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American Cinematographer

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This Month:

**The Evolution of Studio Lighting—
By Harry D. Brown**

**The Great Task of Editing "Ben
Hur"—By William R. Swigart**

**How Cinematography Aids Big Indus-
try—By Herbert Gay Sisson**

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RELEASES

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TITLE	PHOTOGRAPHED BY
The New Commandment	Ernest Haller, member A. S. C.
Go West	Elgin Lessley and Bert Haines
Compromise	David Abel, member A. S. C.
The Bashful Buccaneer	Not credited
The Best People	James Howe
Lights of Old Broadway	Ira Morgan, member A. S. C.
The Keeper of the Bees	John W. Boyle, member A. S. C.
Seven Keys to Baldpate	Jack MacKenzie
Speed Mad	George Meehan, member A. S. C.
Triple Action	Wm. Thornley
Bobbed Hair	Byron Haskins
After Marriage	Not credited
The Knockout	Roy Carpenter
The Road to Yesterday	Peeverell Marley
Old Clothes	Frank B. Good, member A. S. C.
The Scarlet Saint	George Folsey
The Arizona Sweepstake	Harry Neumann
New Brooms	L. Guy Wilky, member A. S. C.
The Prairie Pirate	Georges Benoit, member A. S. C.
Wandering Footsteps	H. Lyman Broening, member A.S.C.
Common People	Max DuPont, member A. S. C.
All Around the Frying Pan	Ross Fisher, member A. S. C.
Three Pals	Robert DeGrasse
When the Door Opened	Ernest Palmer, member A. S. C.
Rose of the World	David Abel, member A. S. C.
The Big Parade	John Arnold, member A. S. C.
Lord Jim	Faxon Dean, member A. S. C.
The Clash of the Wolves	Joe Walker
Stella Dallas	Arthur Edeson, member A. S. C.
The Ancient Highway	Alfred Gilks, member A. S. C.
Bright Lights	John Arnold, member A. S. C.
Two Fisted Jones	Harry Neumann
The Eagle	George Barnes and J. D. Jennings, members A. S. C.
Stage Struck	Geo. Webber
No Man's Law	Not credited
Heartless Husbands	Gordon Pollock
One of the Bravest	Ray June
Morals for Men	Roland Price
The Shadow of the Mosque	Not credited
Simon the Jester	Chas. G. Clarke, member A. S. C.
Wages for Wives	Ernest Palmer, member A. S. C.
Clothes Make the Pirate	Henry Cronjager, member A. S. C.
The Sea Wolf	J. C. Taylor
The Only Thing	Chester Lyons
Hogan's Alley	Charles Van Enger, member A. S. C.
Free to Love	Not credited
Irish Luck	Alvin Wyckoff
The Scrappin' Kid	Wm. Nobles
The Unguarded Hour	Roy Carpenter
Lady Windermere's Fan	Charles Van Enger, member A. S. C.
The Desert's Price	Reginald Lyons, member A. S. C.
The Masked Bride	Oliver Marsh
The Desperate Game	Wm. H. Thornley
The Phantom Express	Art Fried and Harry Davis
The Best Bad Man	Dan Clark, member A. S. C.

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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A. S. C. to Stage Huge Motion Picture Ball

Affair for Film Profession
to Be Held at Hotel Biltmore,
in Los Angeles.



Saturday Night, February 20th,
Is Date Set for Elaborate
Cinema Event.

The American Society of Cinematographers will stage a ball for the motion picture profession at the Hotel Biltmore, Los Angeles, Saturday night, February 20th, it has been announced by the A. S. C. Board of Governors.

Extensive preparations are already well under way to make this the most colorful of all the A. S. C. balls which have numbered some of the most successful functions in the film industry.

Fifth Ball

This will be the first ball to be presented by the Society since October, 1923, at which time the fourth A. S. C. ball was held. The latter affair was conceded to have been one of the most beautiful events in the history of filmdom. Its important happenings and musical presentations were broadcast to the radio world over KHJ, the outside populace having been given its initial opportunity to "listen in" on this exclusive motion picture ball.

A major part of the Society's activities having been monopolized with the construction of the A. S. C.'s special quarters in the Guaranty Building, Hollywood, no ball has been presented by the cinematographers in more than two years with the result that all of the stored-up energies of the membership are now being concentrated on making the forthcoming affair the most pretentious ever undertaken by the Society.

In Charge

The A. S. C. members in charge of the ball activities are Homer Scott, president of the American Society of Cinematographers, as chairman of the ball committee; Fred W. Jackman, former president of the Society, treasurer of the ball committee; and Arthur Edeson, chairman of the special committee on entertainment. Richard Connor, widely experienced in the staging of similar functions, has been retained by the Society to handle the actual management of the ball.

A feature of the occasion will be a lavish souvenir program which will be presented to every person attending the affair. Space in the program is already being reserved by prominent members of the film profession as well as by leading cinematographic and mercantile organizations. This will be the first time in several years that the A. S. C. will issue such a program, and it is predicted that its success will parallel that of the ball itself.

Philip H. Whitman, A. S. C., Enters New Cinema Field

Philip H. Whitman, A. S. C., has joined the staff of the Mack Sennett studios where he is co-directing and writing stories for Mack Sennett comedies.

Whitman's identification with the Sennett forces marks the resumption of an association which began in 1915 at which time he started his cinematographic career with the same organization. It was there that he first manifested the camera genius which has made him one of the outstanding figures in the profession of motion photography. The A. S. C. member is recognized as a master of trick and intricate cinematography, which stands him in good stead in his new connection in the comedy field.

Notable Achievement

Subsequent to his original connection with the Sennett studios Whitman was in charge of the special trick and miniature cinematographic department at Universal City. He left Universal to become associated with Arthur Edeson, A. S. C., in the filming of the intricate phases of Douglas Fairbanks' "The Thief of Bagdad." Whitman's work commanded such wide attention that he was called to New York City to do similar special work for Cosmopolitan, after which he was placed under contract to handle the intricate camera work at the eastern studios of the Famous Players-Lasky Corporation.

Filming "Ben Hur" Chariot Race Scenes

By George Meehan,
A. S. C.

Remarkable Results Regis-
tered by A. S. C. Members
on "Circus Maximus"



Left: George Meehan, A. S. C. Above: A chariot race spill which the cinematographers captured.

A new world's record in the number of cinematographers employed in the "shooting" of motion picture action was established in the filming of the

chariot race scenes in the Metro-Goldwyn-Mayer version of "Ben Hur." Forty-two cameras, each directed by an expert cinematographer, "covered" every angle of the Circus Maximus act and, according to officials of M.-G.-M. it is going down in film history as one of the most thrilling race pictures ever recorded for the silver sheet.

Results Praised

Metro-Goldwyn-Mayer officials, including E. J. Mannix, comptroller; Joe Cohn, production manager, and John M. Nickolaus, laboratory chief with that organization, are loud in their praises for the skill of the cinematographers who captured all the desired results without necessitating the lapping over into another day which would have meant an added expense of thousands of dollars for the hundreds of people who were used in the scenes.

The former record of cinematographers used at one

time in the filming of a motion picture stood at 17, it is said, but in order to capture every detail of the great "Ben Hur" chariot races in which

Great Work!

The following letter and the copy referred to herein were sent to E. Burton Steene, A. S. C., by John M. Nickolaus, head of the Metro-Goldwyn-Mayer laboratories. Similar letters were sent to other A. S. C. members whose work proved so superlative on the chariot race scenes.

Mr. E. Burton Steene,
Dear Mr. Steene:

Your work on the Circus Maximus last Friday and Saturday was very excellent and I want to thank you personally and in behalf of this Company for your efforts and your fine spirit of co-operation.

Enclosed you will find a copy of a letter which Mr. Mannix sent me which expresses the sentiments of the officials of this Company.

Again thanking you, I remain,

Yours very truly,
(Signed) JOHN M. NICKOLAUS.

Mannix Letter

Mr. John M. Nickolaus,
Dear Nick:

I wish to compliment you and your cameramen upon the great work accomplished during the filming of the chariot scenes in Circus Maximus on Saturday last.

I wish that you would express to each and every one of these men, as a representative of the Studio officials, appreciation of the fine spirit with which they all carried on, and the great results accomplished.

It is indeed a pleasure to have men of this calibre do our photographic work.

Mr. Thalberg, Mr. Niblo, and I ran all of the film taken, and we feel proud of everything that they filmed.

I wish that you would see that this word of appreciation is carried on to each and every one of them.

Sincerely yours,
(Signed) E. J. MANNIX.



E. Burton Steene, A. S. C., explaining to Ramon Novarro operation of Akeley camera with which Steene recorded remarkable shots on the Circus Maximus set.

Ramon Novarro and Francis X. Bushman were the principals, 42 cinematographers were stationed about the mammoth amphitheatre at every conceivable angle and in such a manner that every beat of the horses' hoofs, the flexing of muscles, the careening chariots, the tense expressions of the spectators as the race came to its thrilling climax were registered.

Well-Laid Plans

The arrangements for the filming of the Circus Maximus act were made by Percy Hilburn, and the writer. Weeks of detail work preceded the actual filming of the scenes but so well had the pre-

liminaries been taken care of in anticipation of the great event that it was carried to the climax with a precision that drew unstinted praise and commendation from Louis B. Mayer, vice president in charge of production, Fred Niblo, the director, as well as the stars of the classic.

A. S. C. Members

In addition to the writer, among the other members of the American Society of Cinematographers taking prominent parts in the filming of "Ben Hur" race scenes were: H. Lyman Broening, Max Du Pont, Frank Good and E. Burton Steene. Mr. Hilburn was in charge of the cinema-

graphic brigade on the first day of the shooting, but thereafter the writer was in charge of the remainder of the work which was specially directed by Reeves (Breezy) Eason.

The work of E. Burton Steene, veteran cinematographer and expert with the Akeley camera, alone is said to have saved the M.-G.-M. company many thousands of dollars. Steene, left to his own devices on a parallel 120 feet in the air, got the crux of the entire race with unbelievable clearness—namely, the crash of the chariots of Bushman and Novarro. Exercising to the utmost the facility of the Akeley camera, of which he is a recognized master, the A. S. C. member kept the careening chariots of the two principals both in the picture, with the result that every detail of the impact shows in the finished picture. By the use of a seventeen-inch lens, Steene fills the entire screen with the crash. That this shot, which it is believed will become historic, could not be duplicated in a hundred fold of efforts is the opinion of the cinematographic experts who have viewed its exhibition.

All Details Captured

Regardless of what Bushman and Novarro were doing in the wild ride around the track they were always covered by the "eyes" of a dozen cameras. Automobiles made especially for the occasion were so built that ample room was provided for a veritable battery of cinematographers and these machines kept pace with the principals as they whirled the track, thereby enabling the cinematographers to register every detail of the struggling horses and men as they fought for victory.

How Cinematography Aids Big Industry

By Herbert Gay
Sisson

National Cash Register
Company Made Early Use
of Motion Picture Film

(The following interesting account, both from an historical and industrial viewpoint, indicates the use to which cinematography may be put with success by a large commercial organization. The article comes from the pen of Herbert Gay Sisson and is taken from the National Cash Register Company's bulletin, "Progress.")

The progress of the motion picture, one of the outstanding developments of the first quarter of the present century, has affected not only the daily lives of millions through providing an inexpensive medium of entertainment, but it has also become a force in the industrial life of the nation. There are few important manufacturing establishments that do not have films showing their processes of manufacture and telling the story of the development of their product and its importance to the world. Films are also widely used by industry for purposes of instruction and training.

The first large industrial concern in the country to adopt motion pictures in a program of ambitious scope was The National Cash Register Company, and it is doubtful whether any company today uses the motion picture as consistently and for so many objects as does the Dayton, Ohio, organization. This Company's use of the motion picture began in 1902, when special films were made and incorporated in an illustrated lecture on welfare work which was then being given to manufacturers' organizations throughout the country and to visitors to the N. C. R. factory at Dayton.

Today the National Cash Register Company has in its film vault 773,877 feet of positive prints of motion pictures, and 244,702 feet of motion picture negative. In addition, the Company is a daily renter of film from the motion picture industry. Motion pictures are used in special lectures, in an educational film service provided by the Company for the advancement of visual education, in daily noon-hour entertainments provided free for its employees, in weekly Saturday morning children's meetings given to an average of three or four thousand children of the city, and in educational work carried on by the Company among its workers and members of its selling forces.

Worthy Causes Aided

The use of motion pictures by The National Cash Register Company is not confined to films that have to do with the commercial activities of the organization. Upon numerous occasions films have been prepared to aid worthy movements entirely separate from the cash register business. An instance of this occurred in 1924 when Frederick B. Patterson, president of the Company, was at the head of the National Aeronautic Association of the United States. Securing the collaboration of the Bray Motion Picture Studios, Mr. Patterson had a thrilling four-reel film prepared, entitled "Make America First In The Air." This picture, after being approved by the heads of the government air services, was shown in most of the important cities of the country as the basis of an appeal for membership, with the result that the Association's ranks were more than tripled.

Properly to describe the various ways in which motion pictures have been utilized to foster the development of The National Cash Register Company, and the spreading of its principles and idealism, it is necessary to go back in the Company's history to the year 1894.

The late Mr. John H. Patterson, founder of the Company and at that time its president, always firmly believed that the best way to teach is through the eye. Consequently, when in that year it became evident, through the return of a number of defective registers, that the industry was suffering from faulty workmanship, one of the first steps taken was to teach the employees better ways of working through visual methods. This was only one of a number of new and advanced policies launched by Mr. Patterson at that time, which marked the inauguration of industrial welfare work in the United States, revolutionized working conditions in this country, and caused The National Cash Register plant to become known as "the world's model factory."

Moving his desk out into the factory, Mr. Patterson conducted an investigation and found many things that were wrong. He had crude, hand-drawn stereopticon slides prepared. Calling a meeting of all employees in

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The Evolution of Studio Lighting

By Harry D. Brown

Film Illumination Makes Tremendous Strides in Period of Twelve Years



Harry D. Brown

In the year 1914 I became installed as chief electrician for the Universal Film Company at the then embryo Universal City. This was in the days of canvas diffusers and artificial lighting was unknown in Hollywood as red flannel underwear in the South Sea Isles. The high art of using reflectors had not even been developed. Even "Came Dawn" and "Later" had not yet begun their hectic careers as subtitles.

"It's raining, boys, let's go home" was not an uncommon cry and all Filmdom were pagan worshippers of the Sun god.

Indoor Studio

Not long after my advent as Universal's electrician, along about the middle of January, 1915, Isadore Bernstein, then general manager, concluded that the company should have an indoor studio. He was probably inspired by the difficulties attending the

"shooting" of "The Master Key," a serial which Bob Leonard was directing and in which he and Ella Hall were featured. This had been a particularly stormy season—most unusual for California, as any native son will testify—and the serial was behind releasing schedule.

First Cooper Hewitts

Acting upon Mr. Bernstein's order, we selected a garage and converted it into our first indoor studio, into which we invested all the available studio lighting equipment in Los Angeles, i. e., five Kliegl side arcs and one 35-amp. spotlight. To this we added 20 banks of Cooper Hewitts, which we ordered from New York, the first to come to the coast.

Pioneer Electrical Force

We soon followed this up with the installation of 1000 W. nitrogen lamps, which were just being developed as overhead equipment. With this auspicious beginning we proceeded to "shoot" in our proud indoor studio many of the scenes of "The Master Key," which also included several exterior street scenes. The electrical force at Universal at this time was made up of five men, one of whom was Paul Guerin, now chief at the Mack Sennett Studio, and another Walter Strohm, now chief at United Studios.

Winfield-Kerner's

The spring of 1915 saw the coming of the Winfield-Kerner Company's studio lamp, which was adopted and used by most of the studios operating in California. This com-



Frank N. Murphy

pany had previously manufactured photo-engraving lamps. The Winfield-Kerner lamps came into use during the regimes of Messrs. McGill and Harry Caulfield as Universal City general managers. Our total capacity in transformers was 100 K. W. A. C., which included all the power for pumps, etc.

Five Minute Limit

In the latter part of 1915 Universal made a picture called "Lass O'Leary," which called for a rather large street set and considerable night stuff. Our total capacity on this street was 30 K. W. A. C. With fast work on the part of the cinematographers we were able to keep the load on about five minutes without burning up the transformers. "Lass O'Leary" was filmed during Henry McRae's reign as general manager.

We often worked all night

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Rack and Airbell Markings on Cinema Film

Concluding Part of Exhaustive
Treatise Begun in December Issue
of American Cinematographer.

By J. I. Crabtree
and C. E. Ives

Findings of Authorities Reported
in Research Laboratory Com-
munication from Eastman Co.

(Continued from last month, in which complete
illustrations appeared)

If the airbell forms on the film along the sides of the rack, owing to the tendency of the air to rise to the surface, the airbell frequently becomes elongated so that the area of contact is not circular but oval. The tendency for distortion is greater with the larger airbells, which explains why the larger airbell markings are rarely circular, while the small markings are invariably circular.

A typical group of circular and irregular airbell markings is shown in Fig. 7.

Unless the surface of the emulsion is locally greasy or burnished, the points of attachment of the airbells are determined merely by chance. However, there is usually a greater propensity for the airbells to become attached where the film passes over the ends of the rack so that rack marks are usually accompanied by airbell markings. See Fig. 8.

Classification of Airbell Markings

Airbell markings may be of the following types:

1. *Clear white spots.* These may be either circular or irregular in shape as explained above. See Fig. 7. The clearcut edge of the spots indicate that the area of contact of the airbells did not materially alter during the course of development.

2. *Grey spots.* These are similar in shape to those illustrated in Fig. 5 but are not perfectly clear and contain more or less silver grains. They are caused by the airbell breaking or becoming dislodged during development so that the spot was protected for only a part of the total time of development.

3. *Clear spots surrounded by a dark ring.* See Fig. 9. The dark ring is probably a result of developer oxidation fog caused by local oxidation of the developer by the airbell. This type of marking occurs only rarely and with freshly mixed developers which are susceptible to aerial oxidation fog. In such a case if the film remains stationary during development the oxidation products of the developer flow down the film and frequently produce a fog streak or tail as shown in Fig. 10.

4. *Clear spots surrounded by a grey ring.* See Fig. 11. The grey ring is probably caused by a diminution in the area of contact of the airbell with the film due to a change in shape during development as explained above.

5. *Clear spots with a dark central ring.* See Fig. 12. Examination of the dark nuclear ring showed that this consisted largely of silver. The exact method of formation of such markings is not known though they could be formed by bursting of the airbell just before the film was removed from the developer so that the whole airbell area became saturated with developer, and the reforming of a smaller central bubble when the film was immersed in the fixing bath. This second bubble would prevent the access of the fixing bath and permit of development of the image underneath by the developer absorbed by the film after the bursting of the first bubble.

Such a marking could also result from the printing of a positive image from a negative containing airbell markings similar to those described under "3" above, namely "clear spots surrounded by a dark ring."

6. *Clear spots with a nucleus of silver halide.* The appearance of these spots by transmitted light is essentially the same as those shown in Fig. 12, although the dark central ring consists largely of silver halide instead of metallic silver. The method of formation of such spots is probably as follows: During development the airbell prevents access of the developer to the emulsion and persists until the film is removed from the developer. On reimmersion in the fixing bath a small airbell forms where the larger bell previously existed, thus protecting the emulsion from fixation.

The difference between the spots indicated under 5 and 6 is, therefore, merely a result of slight wetting of the previously protected airbell area with developer immediately before fixing. A nucleus of silver halide is produced in one case and a mixture of silver halide in the other.

Factors Affecting the Number of Airbells Formed

The quantity of airbells which may ac-

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The EDITORS' LENS . . . focused by FOSTER GOSS

Credit in Programs

¶ Now that the period of resolutions for the new year is at hand, the cinematographer might well ask that the exhibitor give cinematography the credit that is due it in the exhibition of each and every production. To the mentors of the larger theatres might be addressed the appeal to refrain from cutting credit titles. To the exhibitors of the smaller houses might be directed the request that, if they receive a print from which the credit titles have been cut, they at least insert the name of the cinematographer in the programs. The latter information should be forthcoming from the exchanges. If it isn't, a letter directed to the American Society of Cinematographers in Hollywood—if the exhibitor's bookings are far enough in advance—will bring the same information.

No "Hokum" in Cinematography

- ¶ The cinema has had to suffer, more than any industry, the appellation, "hokum," to be associated with it. Perhaps there has been plenty of hokum relating to the films; at the same time, other lines of endeavor have not been clean of it.
- ¶ This much, however, is worthy of passing note—the basic thing about motion pictures, cinematography, has been singularly free of hokum. Of necessity, no doubt, is this so. Aside from personal preferences for one style of camera work or the other, cinematography, judged from reasonable precepts, must stand on its own feet when it is given its one and only test—showing on the screen. There may be handicaps of poor projection, but there can be no illusions—or "hokum," if you please—about the cinematography that the public sees.
- ¶ There is little place for the unstable foibles in the field of cinematography. If improvement lends itself to the steady ad-

vancement of the science, then it becomes a part and parcel thereof. If it is not conducive to progress, it is soon eliminated. Spasmodically, there may appear various manners of "processes" and the like that may hope to thrive on the supposition that the motion picture industry is susceptible to "hokum," but if those special methods do not measure up to the most thorough-going standards of camera work, the fallacies are soon detected and the promoters and sponsors find themselves high and dry on the rocks of incredulity.

- ¶ Whether cinematography is applied to entertainment, education or whatnot, it is a science all to itself. It is here just as surely and securely as photography itself. It is a gift to mankind. "Hokum" finds the camera a barren pasture, and they who would sow the seeds thereof may well put forth their efforts more profitably elsewhere.

A Real Feature

- ¶ Continued comment on the selection by this publication of the productions with the best cinematography for the past year reveals many interesting phases. The novelty of the feature has proved extremely appealing and contributors to other publications have been quick to take note.
- ¶ While it was the original intention to pick the five pictures with the best cinematography of the past year, this idea was laid aside when there became apparent the size of the task of the critics who perforce had to delve into retrospect for the selections for which they were queried. If they had had the purpose in mind when they were reviewing the different productions during the course of the year, such a procedure would have been more feasible. Hence, as was explained in the Annual Number, all the features cited were presented on a single Roll of Honor, no consecutive number being essayed.

The Great Task of Editing "Ben Hur"

By William R. Swiqart

Crux of All Sequences Must Be Preserved in Cutting Down Lengthy Footage

The gigantic task of editing "Ben Hur" is about at the end of the rope. When we see it on the screen we will marvel at the huge sets, the mobs, the photography, the story and direction. But in retrospection of the task of building this picture, will there be a thought given to this branch which has played a prominent part in making such a spectacle presentable?

Great Amount of Work

Let us for a moment delve into the tremendous amount of work involved in editing "Ben Hur."

After talking with Lloyd Nosler, who is film editor of this great motion picture, I discovered, to my amazement, the great responsibility placed upon his shoulders. More than 1,600,000 feet of negative were shot on this picture from which 800,000 feet of positive were printed. With 16 pictures to the foot, this makes a total of 12,800,000 pictures with which Lloyd Nosler had to familiarize himself before attempting to assemble and edit.

When Mr. Nosler was appointed by the Metro-Goldwyn-Mayer Corporation to edit the film of this epic, he appreciated the honor, a most enviable honor in his profession. But in back of this appointment, M-G-M realized his ability and he was selected because of his past record of achievement in this field. He immediately sailed for Europe, where he was to join Director Fred Niblo. Upon his arrival, Nosler found in excess of 350,000 feet of film awaiting him and he immediately waded in to reduce this footage to continuity form which would enable Mr. Niblo to determine what could be done with the work already accomplished.

Having completed their work in Italy, the company returned home, where there was much to do to complete the picture. It was here that Nosler resumed the task of keeping up with the reels of film that were being constantly furnished after each day's work, but it was much more pleasant after he had organized a force of able assistants who knew what it was all about and could talk his language.

Three Great Sequences

Among the many sequences incorporated in this great super-production, there are three



Lloyd Nosler

which are outstanding because of their magnitude and importance to the story. These are the "Joppa Gate," the "Galley" and the "Circus Maximus." The latter was shot in Culver City and necessitated the building of the largest motion picture set ever attempted in the history of motion pictures. It is a replica of the enormous chariot racing arena as it existed two thousands years ago in Antioch, which was at that time the second largest city in the world and second in importance only to Rome. It is reported that more than 200,000 feet of negative were shot on this one sequence. Forty cameras were used during the filming of the chariot races and one would believe by seeing so many cinematographers that it was an A. S. C. convention. However, they must receive a large measure of credit, for there was not a move made in this huge scene but what it was picked up by one or more of the cameras stationed at strategic points throughout the set. Some remained stationary, while others were mounted on

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The Evolution of Studio Lighting

(Continued from Page 8)

on the "Lass O'Leary" street set, sleeping a couple of hours in the transformer room, where it was warm and going about our duties maintaining the plant during the day.

Cinema Twin

In December, 1915, Universal purchased from W. W. Wohl, 50 overhead Wohls and 25 broadsides, and outside of buying some large deck Cooper-Hewitts, we made no additions to the plant equipment until the late summer of 1917, at which time Winfield - Kerner brought out the Cinema Twin, which is substantially the same type of lamp in use today. Meantime, of course, other studios had introduced much new lighting equipment of varying makes.

In this interregnum H. O. Davis had served his term as general manager and the office came into the able hands of William Sistrom. In the early part of 1918 the Sunlight Arc Company introduced what is known as the Sun Arc. This light became very popular, particularly for street and location work, and is still used to a considerable extent.

These retrospections are probably also the reflections of the experiences of Frank

Gotham Critic Praises Clark

An outstanding tribute to the cinematography of Dan Clark, A. S. C., who is chief cinematographer for Tom Mix on Fox productions, is paid in the following New York dispatch to the LOS ANGELES EXAMINER from Eileen Creelman, motion picture editor for UNIVERSAL SERVICE:

"Tom Mix is the hero of 'The Best Bad Man,' but it is his cameraman who walks away with most of the honors. The picture winds up in a long climax with some beautifully photographed scenes of a great dam bursting and rushing toward the audience in a torrent of danger. We are shown several remarkable exterior and interior shots of its destruction of the hut where Tom Mix is imprisoned."

N. Murphy, now chief engineer for Warner Bros. Studios, and H. G. Ewing, president and general manager of Minerva Pictures Corp., both of whom started their careers in 1914. The latter served with Famous-Players-Lasky Corp. and was responsible to a large degree for the illumination for the excellent photography turned out by that company. Murphy engineered his first lighting in the late Thomas H. Ince's "Civilization."

It is rather difficult to give

facts and figures from memory, but if the reader will stop to consider that from what was considered a large set with 30 K. W. in the days of "Lass O'Leary," we advanced to the gigantic scenes in "The Hunchback of Notre Dame" with 2500 K. W. capacity, he will then realize how important the lighting of motion pictures has become.

Gigantic Jump

From 500 to 1000 kilowatts are used on the average interior set today, and as much as 5000 have been used on others. From an approximate total of 30 kilowatts back in 1914—used by all the studios—the Hollywood film industry today has a capacity for approximately 30,000. Certainly no mean barometer of the industry's growth.

Every studio chief has contributed his talents to the development of the art of motion picture lighting, and in no case have we had any outside assistance. He has not only improved his lighting equipment, but has invented and perfected such mechanical concoctions as wind machines, pumps, lighting machines and numerous other devices.

The studio chief engineer is a veritable tri-god, combining all the virtues of Helios, the sun god; Pluvius, god of rain, and Thor, lord of thunder.

American Society of Cinematographers

~ **BALL** ~

Hotel Biltmore, Los Angeles

Saturday, February 20th, 1926

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BELL & HOWELL n'cety of workmanship is evident in EYEMO. It is built with the same painstaking degree of precision and accuracy as B & H professional studio cameras. A 47 m-m F 2.5 Taylor-Hobson Cooke lens in micrometer mount is standard equipment. Other lenses up to 20" telephoto are regularly stocked and interchangeable by reason of micrometer focusing mounts employed. Adjustable speed feature permits varying the speed from 16 to 8 exposures per second.

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EYEMO is so named because it sights from the eye—like a spy glass. Can be held with the same steadiness as aiming a rifle. The image is seen in the upright position. Easily followed, or the Camera may be quickly shifted to another scene. Level visible in the finder tube assures getting pictures squarely on the film. A quick and accurate Portable Camera.

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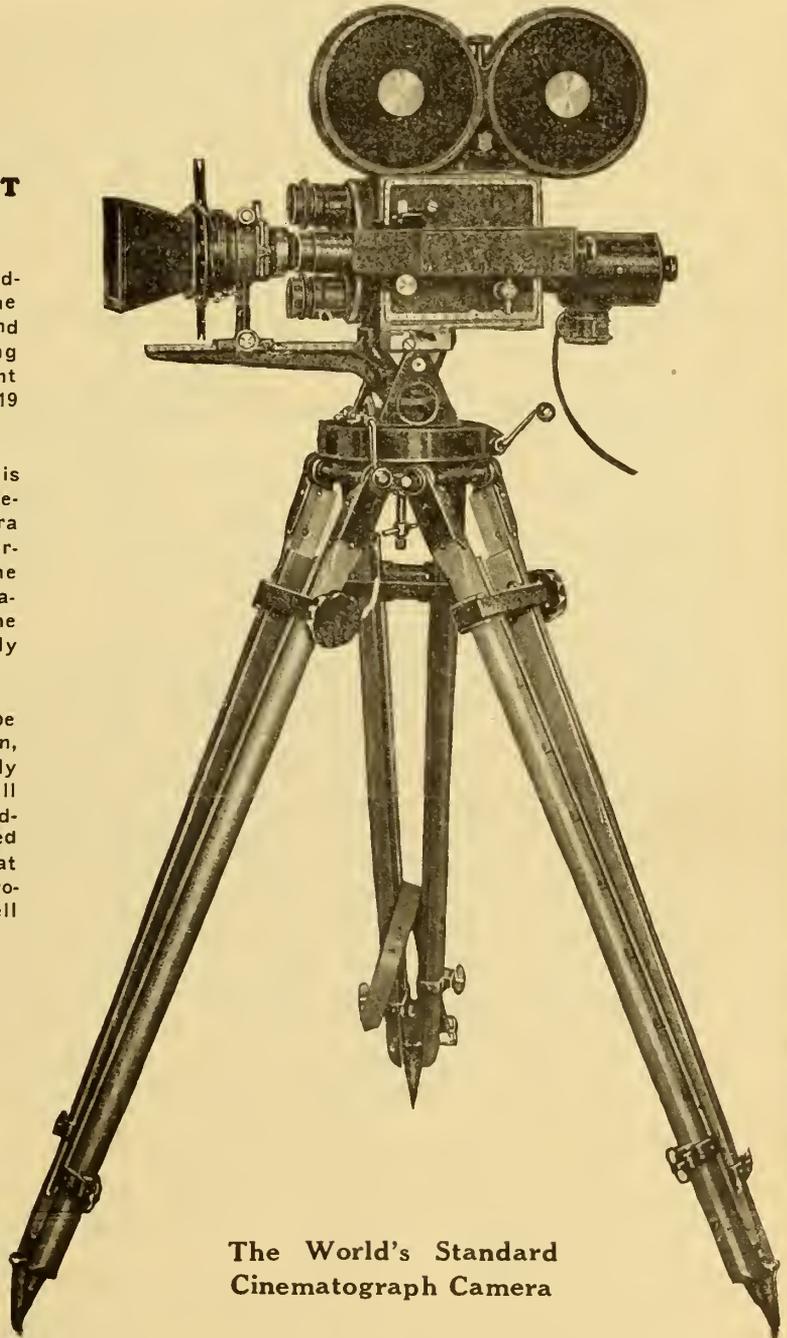
For example—the ultra speed attachment is interchangeable with the normal speed movement of any Bell & Howell Standard Camera now on the job. To accommodate interchangeability, only a few provisions at the factory are necessary. The ultra speed feature does not in any way interfere with the normal operation of the camera. It effectively equips one Camera to do the work of two.

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The Great Task of Editing "Ben Hur"

(Continued from Page 12)

mobile platforms, automobile trucks and air-planes. In some instances cameras were suspended by cables and propelled across the entire length of the arena, which measured approximately 1500 feet long. And with all this film, produced by such a large battery of cameras, you can imagine what a task it was to select 1000 feet which at most is about all you will see of this sequence in the finished picture.

Footage Reduced

The "Joppa Gate" sequence, which is the entrance to Jerusalem and was shot in Italy, is estimated to have furnished over 100,000 feet of film, which was reduced in the final editing to 1000 feet; and the "Galley Sequence" having furnished around 132,000 feet, was edited to 1500 feet.

Exhibiting Length

Perhaps you can understand the mechanical part of assembling this mass of film, but can you conceive the tremendous importance of reducing it to an exhibiting length and in such a manner that will please the audience of the universe? This is an art which few people have mastered. In order to edit a picture, one must know drama; he must be able to place himself in the same receptive mood as that of the great army of people who will ultimately view the picture. He must be able to tell the story in action and with the proper tempo, the same as you would expect to see it portrayed in life. He must know how to time the many situations to get the maximum effect, and to do this, he must know the value of every bit of action and the length of time to keep it before the eyes of the audience. Above all, he must build his plot in action the same as the writer does in words, commanding the interest at all times until the climax is reached. To possess all these requirements, I dare say, it requires a great mind.

In the case of "Ben Hur" the responsibility of the final editing does not fall upon one man; it would be a physical impossibility because of its size, and so we find at this stage, three great minds, Fred Niblo, Irving G. Thalberg and Lloyd Nosler collaborating day and night, exerting their every resource of energy and brain power for one purpose, and that is to make the production of "Ben Hur" stand out as the greatest screen epic of all times.

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The emulsion is made sensitive to red, yellow and green, as well as blue to which regular film responds chiefly. Consequently all the colors you see, either on location or in the studio, can be reproduced in the negative in their true relationship.

EASTMAN KODAK COMPANY
ROCHESTER, N. Y.

(Continued from Page 7)

a nearby Jewish synagogue which had been abandoned and rented by the Company, he showed them by means of these slides the practices that were wrong and how they could be bettered. The effect was salutary and this marked the beginning of the Company's extensive use of the stereopticon, which has since been supplemented to a great extent by the motion picture.

100,000 Slides

In 1896, a photograph department was started at the factory, and after that time photographic slides were used. Despite the motion picture, the use of slides has by no means been discontinued. The Company has on hand at this day approximately 100,000 slides, containing views from every part of the earth and covering a wide variety of topics. The Company's auditoriums are equipped with wide screens, and double-screen stereopticons are used. In this manner a picture can be shown on one side of the screen and accompanying comment on the other. Songs for group singing are illustrated in this manner, a picture being on one side and the words of the song on the opposite side.

Following the inauguration of welfare work, Mr. Patterson had a lecture made up, which was illustrated with the stereopticon. It showed the beneficent results of welfare work, and Mr. Patterson gave the lecture personally to manufacturers' organizations in various parts of the United States to arouse their interest in more considerate treatment of their personnel. Shortly afterwards the Company adopted the policy of inviting visitors to go through the factory. Then a small room was fitted up as an auditorium and the lecture on welfare work was shown to the factory's daily guests.

Use of the 'Movie'

In 1902 the motion picture was still in a state of infancy and a smaller footage of film was being shown in the entire country than in any important city today. Intensely interested in visual education, however, Mr. Patterson saw that the motion picture was more effective in many ways than the stereopticon. He secured from the Edison Company a complete motion picture outfit and a cameraman and brought them to the factory. Thereafter both the traveling factory lecture and the one given at the plant were given as a combination of stereopticon and movies.



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*.

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While traveling in Europe in 1911 Mr. Patterson saw an exhibition of Kinemacolor films, the first colored motion pictures. He became so interested that he paid the expenses of the inventor across the sea, brought him to Dayton and had him make a series of colored motion pictures, the first produced in America. The Kinemacolor pictures were principally views of landscape gardening around the factory and the beautiful front yards, back yards and window boxes in the neighborhood. They were used to illustrate a lecture on landscape gardening and home beautification. Three traveling outfits were sent with this lecture to all parts of the United States in the interest of community betterment.

Children's Meetings

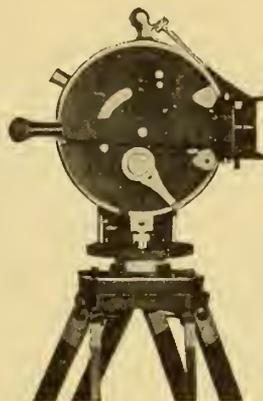
A further use of the stereopticon that later was supplemented by motion pictures was in the case of the "pleasant Sunday afternoons," started by Mr. Patterson in 1897 for the benefit of the children of the neighborhood. The main feature of these entertainments in those days were talks on travel illustrated by the stereopticon. At the present time these children's meetings are held on Saturday mornings, the attendance weekly averaging 3,000 or more, and instructive and entertaining motion pictures constitute the bulk of the program. These meetings are free to all children of the city or vicinity. Each child enjoys an hour or more of motion pictures and songs, and refreshments are served.

In 1915, a motion picture was produced entitled "The Troubles of a Merchant and How to Stop Them." This was used in conjunction with another film entitled "Getting the Most Out of Retailing." For a number of years, five traveling lecturers presented these films to educate the retail merchants throughout the United States and Canada. They were given to Chambers of Commerce and leading merchants' organizations.

A year or two before America entered the World War a film was made in different hospitals throughout the country showing the terrible results of social diseases. This was shown to the conventions of salesmen and to the factory employees, and is still being shown to all new employees. In 1917, Mr. Patterson had the picture revised and sent it to Washington where it was approved by government officials and he then sent this picture out to all army camps so that it was seen by

(Continued on Page 22)

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Rack and Airbell Marking on Cinema Film

(Continued from Page 9)

accumulate on the film is determined by the following factors:

1. *The manipulation of the rack.* This determines:

(a) The rate of immersion of the film. If the film is immersed rapidly there is a much greater tendency for it to carry down airbells than when immersed slowly. It is important therefore, to immerse the rack slowly, especially when the end slat touches the surface of the developer because most airbells usually accumulate along the end slats.

Rapid immersion is also apt to cause foam on the surface of the developer and the small air bubbles constituting the foam attach themselves to the film causing airbells.

(b) The time of soaking before removing from the developer. Experience has shown that if the film is immersed quickly in the developer, allowed to remain submerged for only a few seconds and is then lifted completely out of the developer and resubmerged, a much larger quantity of airbells will be formed than when the film was originally immersed.

Short immersion of the film in the developer followed by exposure to the air leaves the film in a partially swollen state and in this condition it has a much greater propensity to carry along airbells with it on subsequent immersion than the dry or completely swollen film. It is usually necessary to allow the film to soak for at least twenty to thirty seconds after the first immersion in order to remove this tendency.

(c) The degree of agitation of the rack. In many cases airbells can be dislodged after the film has been thoroughly soaked by rapid agitation of the rack or by slapping the end slat against the surface of the developer, though when developing by time it is necessary to duplicate the rack agitation precisely and too much rack manipulation is not practical. It is preferable to remove the airbells manually as described below.

2. *The Quantity of Grease on the Film.*

A very slight trace of grease or oil on the film will so affect the surface of the emulsion that it has a greatly increased tendency to attract airbells. Any appreciable quantity of oil or grease will also act as a resist and prevent

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the access of the developer. Preliminary soaking of the film in a solution of sodium carbonate will often overcome this tendency (see below).

3. *The Condition of the Developer*

Experiments have shown that old developer which frequently tends to foam badly has a greater tendency to give airbells than new developer. This foaming is the result of the presence of decomposed gelatin produced by the action of the alkali in the developer on the small particles of emulsion removed from the film by abrasion. The effect of the addition of ethyl alcohol to such a foaming developer was tried but no beneficial effect was observed by the addition of increasing quantities of the alcohol up to 10%.

Method of Preventing the Formation of Airbells

The formation of airbells may be prevented as follows:

1. By soaking the film in water or a solution of sodium carbonate (about 2%) before development. This has the effect of thoroughly soaking the gelatin, in which condition the propensity for airbells to form is a minimum, while the carbonate solution tends to remove traces of grease which would otherwise cause airbells and prevent access of the developer. The carbonate treatment, however, will not remove splashes of mineral oil.

Any airbells which cling to the film during the soaking process can be removed manually by passing a soft camel's hair brush along the top slat, reversing the rack in the tank and repeating the process.

After soaking the film it is very necessary to thoroughly agitate the rack for the first minute after immersing in the developer, otherwise the liquid carried over by the film will still adhere and cause development streaks.

Soaking is objectionable insofar as it involves an extra operation and is really not necessary if the manipulation outlined below is followed.

2. By taking care not to use developer which is too old and which foams badly, by immersing the rack slowly, and by allowing the film to remain under the surface of the developer for at least 30 seconds before lifting out of the developer for any reason whatever.

3. By removing the airbells mechanically.

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(Continued from Page 19)

every enlisted man shortly after he entered camp. This film is regarded as the most effective warning against the dangers of sexual vice that has ever been produced.

Helped Nation's Morale

As a further contribution to the winning of the war, Mr. Patterson had prepared a lecture entitled "Wake Up America," in which both the stereopticon and moving pictures were used. The object of this lecture was to teach the American people the causes of the war and why we were in it, and to arouse the country to the necessity of devoting all their energies to winning. The five lecture outfits that were given the merchants' educational lectures devoted all their time in presenting this lecture in all parts of the United States.

One of the most noticeable effects of the war in the industrial life of the country was the fostering of inefficiency and wastefulness on the part of workers. To combat this attitude, in 1919, The National Cash Register Company had a film made up which was entitled "Waste Can't Win." It was a clever exposition of the prevalent bad habits and tendencies of the day, and the results of showing it were so evident that it was borrowed by hundreds of manufacturers throughout the United States and shown by them to their employees. This film was everywhere regarded as a big factor in the return of the American workman to "normalcy" following the hectic war days.

About six years ago the factory lecture was revised and is now all motion picture, instead of a combination of movies and slides. It is given in the N. C. R. Schoolhouse twice a day to those who visit the factory, in number about 26,000 per year.

Special 'Movies'

Motion pictures are made of all of the Company's sales conventions, pageants, special visitors. These pictures, as well as our merchants' pictures, are used as part of the instruction of salesmen in the Company's sales school.

Both the stereopticon and motion pictures are used daily in the Company's repair school in connection with the teaching of the mechanics of cash registers to service men.

The main projection room is in the N. C. R. Schoolhouse, an auditorium that seats about 2,300 people. This auditorium is equipped with a complete stage, capable of

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putting on the largest productions. In this projection room are three high intensity arc simplex projectors, one double screen stereopticon, two single stereopticons, and four spot and flood lights. There are four other projection rooms; one in a classroom back of the Schoolhouse stage, one at the N. C. R. City Club auditorium, one at the screening room, and one in the repair school. Each of these is equipped with two motion picture projectors and double screen stereopticon.

The Company also maintains an educational film service, loaning films to schools, churches and organizations for the purpose of promoting visual education. This film service contains travel pictures, scenics, films depicting various industries, pictures of animal and plant life and others. They are loaned free of charge to any worthy organization.

(Continued from Page 21)

Experience has shown that even when the above precautions are taken some airbells may still cling to the film, and especially at those parts where the film passes over the end slats. The only way to be absolutely certain of the absence of airbells at these points is to remove the airbells by passing the hand or a soft camel's hair brush along the upper and lower slats during the course of development. If this is done with reasonable care the film emulsion will not be damaged or scratched in any way although no trace of hypo must be present on the fingers or brush, otherwise streakiness will result.

With the usual rack it is not possible to pass the hand across the slat owing to interference by the separating pins. This difficulty may be overcome by offsetting the pins at an angle of 45° as shown in Fig. 4 or by omitting the pins on the slats and placing a bar fitted with spacing pins slightly below the end slats. *Practical Instructions for Preventing Rack*

Marks and Airbell Markings

Both rack marks and airbell markings may be largely prevented by adhering to the following manipulative procedure which should be applied when developing both negative and positive film.

1. Use racks with cylindrical end slats approximately 2 inches in diameter, with the spacing pins offset at approximately 45° so as to permit of passing the hand or brush along

Taken in a Pouring Rain at Dusk, with

The ULTRASTIGMAT-f1.9

Gentlemen:

I enclose some pieces of negative which I took in a pouring rain at ten minutes to 6 o'clock on September 12, the last event of the Rochester Horse Show.

This film was used in International News Reel No. 78.

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the length of the slats so as to dislodge any airbells.

2. Lower the rack slowly and carefully into the solution and when the lower slat is just below the surface pass the hand quickly along its entire length so as to dislodge any airbells. Then completely submerge the rack, and in a similar manner quickly pass the hand across the upper slat and allow the rack to remain submerged for 30 seconds. Then allow the rack to float, resubmerge immediately and repeat this operation once every minute during the period of development.

3. In case this treatment does not entirely prevent airbells, the film should be soaked in water or a 2% solution of sodium carbonate for 3 or 4 minutes before development, and in addition to this the rack should be moved continuously during the first 30 seconds while submerged in order to prevent streakiness.

Fail to Credit A. S. C. Member for Filming Big Productions

A number of trade journals failed to carry credit in their reviews to Georges Benoit, A. S. C., for the cinematography in a number of important productions. Included among these are "The Scarlet West," "Off the Highway," in which, by virtue of the dual role of William V. Mong, Benoit again had an opportunity to display his thorough execution of multiple exposure; and "The Rubaiyat of Omar Khayyam," which is being released under the title of "The Lover's Oath."

Ernest Palmer, A. S. C., is photographing the Fox feature, "The Price of Pleasure," directed by Emmett Flynn.

* * *

Barney McGill, A. S. C., is filming the Fox production, "A Trip to Chinatown."

* * *

Ross Fisher, A. S. C., is photographing "The Tough Guy," the latest Fred Thompson feature being produced at the F. B. O. studios.

* * *

Charles Stumar, A. S. C., is filming "Poker Faces," a Universal production directed by Harry Pollard.

* * * *

Robert Kurrle, A. S. C., is making preparations for the photographing of the next Edwin Carewe production for First National.



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Whatever Your Question



Be it the pronunciation of vitamin or marquisette or soviet, the spelling of a puzzling word—the meaning of overhead, novocaine, etc., this "Supreme Authority"

Webster's New International Dictionary

contains an accurate, final answer, 407,000 words. 2700 pages. 6000 illustrations. Constantly improved and kept up to date. Copyright 1924. Regular and India Paper Editions. Write for specimen pages, prices, etc. Cross Word Puzzle workers should be equipped with the New International, for it is used as the authority by puzzle editors.

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Saturday

February 20th, 1926



Robert Kurrle, A. S. C., is photographing "Heirs Apparent," an Edwin Carewe production for First National. Among those who will appear before Bob's camera are Edwards Davis, Alec B. Francis, Dolores del Rio, Rita Carewe, Lloyd Hughes, Mary Astor and John Murray.

* * *

Arthur Edeson, A. S. C., is photographing "The Bat," which Roland West is directing as a John W. Considine, Jr., production for United Artists.

* * *

John W. Boyle, A. S. C., has completed the cinematography on "The Far Cry," a First National production directed by Sylvano Balboni, and is at present engaged on the photographing of Lambert Hillyer's latest production for the same organization.

* * *

Bert Glennon, A. S. C., is photographing the latest Paramount production starring Pola Negri. Dimitri Buchowetzki is directing. This is the third consecutive feature on which the A. S. C. member has been chief cinematographer for Miss Negri.

* * *

E. B. Du Par, A. S. C., has been on location on a big sheep ranch near Santa Paula, California, for the filming of the latest Warner Bros. production starring Rin-Tin-Tin. The title of the feature is "The Night Cry." The cast includes June Marlowe, John Harron, Gayne Whitman, Heinie Conklin and Don Alvarado. Herman Raymaker is directing. The past year has been one round of locations for the A. S. C. member who, prior to his departure for Santa Paula, had just returned from location in Toronto, Canada, where he went with Lubitsch and Charles Van Enger A. S. C., for the filming of scenes in "Lady Windermere's Fan."

* * *

Through the courtesy of C. J. Hubbell, west coast manager for International Newsreel Corporation, there was presented at the A. S. C. open meeting of December 14th the reels of International's compiled "thrills" of the past ten years. The exhibition was well

received by the A. S. C. members, several of whom began their careers as news cinematographers. Refreshments were served following the meeting.

* * *

The A. S. C. open meeting of December 28th was featured by the showing of the latest pictures in the "Secrets of Life" series, photographed by Louis H. Tolhurst, A. S. C. These proved some of the most interesting of the Tolhurst pictures that have been viewed to date.

* * *

John Arnold, A. S. C., is being congratulated on all sides for his superior cinematography in "The Big Parade," the Metro-Goldwyn-Mayer success which he photographed.

* * *

Dan Clark, A. S. C., is out of the city several days on location for the filming of the latest Tom Mix feature.

* * *

Victor Milner, A. S. C., has completed the filming of "The Golden Journey," the R. A. Walsh production for Paramount. Buster Collier and Greta Nissen head the cast.

* * *

Norbert Brodin, A. S. C., through the courtesy of Frank Lloyd productions, is photographing "Paris at Midnight," a Frances Marion production being directed by E. Mason Hopper at the Metropolitan studios.

* * *

Frank Cotner, A. S. C., has finished shooting "The Blind Trail" and "Without Orders," both of which star Leo Maloney.

* * *

George Schneiderman, A. S. C., has completed the filming of the Fox production, "The Johnstown Flood," directed by Irving Cummings. The flood scenes call for all of the A. S. C. member's expertness as a cinematographer.

* * *

Reginald Lyons, A. S. C., has finished shooting "The Fighting Buckaroo," a Fox production starring Buck Jones.

HOW TO LOCATE MEMBERS OF THE American Society of Cinematographers

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 Guissart, Rene—Paris, France.
 Haller, Ernest—with Robert Kane Prods., New York City.
 Heimerl, Alois G.—
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 Jackman, Fred W.—directing Fred W. Jackman Prods., Hal Roach Studios.
 Jennings, J. D.—with Metropolitan Studios.
 Koenekamp, Hans F.—with Larry Semon.
 Kull, Edward—with Universal.
 Kurrle, Robert—with Edwin Carewe, United Studios.
 Landers, Sam—with Waldorf Studios.
 Lockwood, J. R.—
 Lundin, Walter—with Harold Lloyd Productions, Metropolitan Studios.
 Lyons, Regina—with Buck Jones, Fox Studio.
 Marshall, Wm.—with Carlos Prods.
 McCoid, T. D.—with First National, United Studios.
 McGill, Barney—
 MacLean, Kenneth G.—with Warner Bros.
 Meehan, George—
 Milner, Victor—with R. A. Walsh, Famous Players-Lasky.
 Morgan, Ira H.—with Marion Davies, Cosmopolitan, Metro-Goldwyn-Mayer Studios.
 Norton, Stephen S.—F. B. O. Studios.
 Palmer, Ernest S.—with Fox Studio.
 Perry, Harry—
 Perry, Paul P.—with Universal.
 Pollito, Sol—with Hunt Stromberg Productions.
 Ries, Park J.—
 Roos, Len H.—with Fox Film Corp., Ltd., Vancouver, B. C.
 Rose, Jackson J.—with Universal.
 Rosher, Charles—with Mae Murray, "Ufa," Berlin.
 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.—with Metropolitan Studios.
 Warrenton, Gilbert—
 Wenstrom, Harold—
 Whitman, Philip H.—with Mack Sennett Studios, Scenario Dept.
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 Wehh, 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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August 15, 1925.

Mr. H. F. Boeger,
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Los Angeles, Calif.

My dear Mr. Boeger:

I wish to congratulate you upon the perfection which the Mitchell camera has developed.

I have used the Mitchell on my last four productions, "The Iron Horse", "Lightnin'", "Kentucky Pride", and "Thank You", and both Mr. Schneiderman, my cinematographer, and myself are highly pleased with the results. Owing to its wonderful equipment and mechanical arrangements, we are able to photograph at nearly twice the speed we formerly used, thereby saving a lot of time in production.

Hoping that you will keep Mr. Schneiderman and me informed of any possible changes or improvements on the camera, I remain

Yours very truly,

William Fox

JF/J

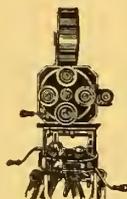
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In this Issue:



**Announcing New
Question and Answer
Department on Amateur
Cinematography**

PUBLISHED IN HOLLYWOOD CALIFORNIA

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American Cinematographer

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Camera Crowds Are Curious World Over

Even Hollywood, supposedly blase to picture making, will produce a crowd whenever a motion picture camera is set up in a public thoroughfare and "shooting" is begun. What, then, can be expected in the far corners of the civilized world?

Len H. Roos, whose camera has caused savages to flee as well as attracted crowds which almost stampeded the instrument off the street on the other side of the world, gives interesting anecdotes in this direction.

"While I was in Canada," Roos writes, "making some mountain scenes for a Fox Varieties picture a few months before I sailed for Australia, I was working at Lake Louise, Alberta. The particular shot that was keeping me busy was some stop-motion footage of a cloud formation at sunset. The habit of the inquiring public, when they sight a motion picture camera, is to watch carefully for a while, and then come up to ask: 'Are you making movies?' In this instance, a middle aged gentleman and a small boy were about 50 feet away, watching carefully. Finally, the old chap, just addressing the world in general and no one in particular, came out with: 'I wonder if he's making movies'—and the modernized small boy replied scornfully: 'No, dad, he's picking rawsberries!'

"While traveling on ships or trains the tripod of a camera outfit is the subject of much speculation on the part of the passengers; it is presumed to be anything from a patented fishing rod to a folding automobile tent. The best one on the poor tripod was pulled by a lady with a youngster at her side. While the tripod was being deposited under the seat of a Pullman, the child asked: 'Mumma, what's 'at?' and started to explore the tripod; whereupon the good lady replied: 'Come away from there, Willie; those are golf sticks!'



Len H. Roos, A. S. C., Gives Rare Highlights on Psychology of the Camera Struck

Where Shown?

"At most places where crowds of people assemble the cinematographer is in for a bad day unless he has at least three inquiries as to how much 'photos are a dozen.' When he explains that they are not photographs but motion pictures which he is taking, he is then asked where and when they are to be shown. After passing out this information to the best of his ability, the party inquiring then tells him of a place that 'would make a great movie.' The informant then proceeds to elaborate about his quarter section which is perfectly flat, has not a tree or a shrub on it and is covered with the greenest grass anyone ever saw. And then the inevitably triumphant question: 'Wouldn't that make a great movie?' Most of these people, when they saw the 'Fox News' name plate on my cameras remember that they have a wonderful scenario kicking around the house somewhere that would make a 'great movie for Tom Mix.' Mix and Dan Clark, his chief cinematographer, don't know how many bad dreams I have saved them by advising these people to write to the company first to ascertain whether 'they need any just now.'

Surveying Instrument?

"In Wellington, New Zealand, I set up the camera on the curb as I was going out into the center of a busy street to make a shot that was wanted by the Sydney office. I was just putting the cranks on the tripod when a very tall, thin chap with at least a four-inch collar and no tie but displaying the latest thing in a front collar button asked: 'What's the machine worth?' The machine, to which he referred, was my new De Brie, and I answered: 'About 400 pounds.' He said: 'Oh, no, I won't have that.' I told him that I couldn't help it; I knew that was what it had cost because I had paid for it. 'Well,' he volunteered, 'I've got a thedolite and it only cost a hundred and fifty!' I opened the camera then and showed him the difference between a hundred and fifty pound surveying instrument and a motion picture camera. He appeared to be convinced.

Form Query Department on Amateur Cinematography

Question and Answer Department to Be Made Regular Monthly Feature



Amateur Motion Photography Brings Forth Special New Department

A QUESTION and answer department, created to meet the needs of the many owners and users of amateur cinematographic sets, will be introduced in the next issue of the *American Cinematographer*. At the same time this department's scope will be extended in general to the affairs of amateur cinematography which has advanced to a remarkable stage during the past several months.

With the advent to the market of various types of practical motion picture outfits and the consequent wide use thereof, queries concerning amateur cinematography have been directed from points throughout the country to the *American Cinematographer* and to the American Society of Cinematographers. As a result, it has been decided to answer the questions of the owners and users of such outfits through the medium of this publication, the answers being prepared under the direction of the American Society of Cinematographers. In this way, it is hoped to simplify to a large degree the problems which arise before the amateur cinematographic enthusiast from time to time. While this department is designed to be highly informative, only legitimate inquiries will be considered; none which tend to jeopardize general motion picture production by divulging trade secrets will receive attention.

It is believed that the operation of this department will prove a boon to amateur cinematography as its details will be favored with the expert cinematographic knowledge centered under the banner of the American Society of Cinematographers, whose membership comprises the ace cinematographers of the world.

Giant Steamer to Carry Full Film Projection Equipment

The largest and fastest high-powered passenger steamship ever to be built in the United States will have, as a part of the equipment designated for the comfort and enjoyment of her passengers, facilities for the showing of motion pictures both in the lounge and on the open deck.

The ship is the *Malolo*, Hawaiian for Flying Fish, which is now being built for the Matson Navigation Company at Cramp's

(Continued on Page 25)

Censorship Worries for News Cinematographer May Soon End

A move to relieve news cinematographers from the onus of having to contend with measures which cause the "killing" of "shots" that very often have been obtained only through great expense and personal danger is seen by the Motion Picture News in a bill recently introduced in the New York Legislature. The News report on the matter follows:

The first bill pertaining to the motion picture industry to be introduced at the present session of the New York State Legislature, made its appearance in the Senate on Wednesday, January 20, being introduced by Senator J. Griswold Webb, a Republican from Dutchess county. The bill modifies the provision of the present censorship law in New York State, to the extent that it exempts news reels from examination. In some quarters the bill is viewed as the opening wedge of a movement calling for the abolishment of the com-

(Continued on Page 23)



Bert Glennon, A. S. C., explaining some cinematographic lore to Pola Negri whom he is photographing in the third consecutive Paramount production.



John Arnold, A. S. C., whose newest achievement is "The Big Parade."

**A. S. C. Members
who Keep in the
Cinematographic
Limelight**



Dan Clark, A. S. C., who creates photographic masterpieces in Tom Mix films.



Robert Kurrle, A. S. C., who makes Edwin Carewe features photographic gems.



Ernest Haller, A. S. C.,—his latest contribution is "Bluebeard's Seven Wives."



Charles Stumar, A. S. C., who ranks high as one of Universal's camera aces.



Frank B. Good, A. S. C., "between" Jackie Coogan pictures, is at Fox where he made many early successes.



Sol Polito, A. S. C., who has guided the cinematographic destinies of Harry Carey for many moons.



Norbert Brodin, A. S. C.,—his cinematography ideally harmonizes with Frank Lloyd's superb direction.

Behind the Camera for William de Mille

By L. Guy Wilky,
A. S. C.

A. S. C. Member Writes
Story Relative to Famous
Director-Camera Team

The following story appeared originally in The Motion Picture Director, which is sponsored by the Motion Picture Directors Association. It gives interesting camera "angles" on one of the most celebrated director-cinematographer teams:

(Registering the psychological qualities of a director's genius on celluloid, getting just the right shading, the proper balance between high lights and low lights, translating on to the film the underlying spirit of the story and the director's conception of its treatment—these are some of the problems which must be met and solved by the cinematographer. Upon him devolves a responsibility commensurable with that of an artist working in oils or in stone, for no matter how much feeling is expressed by the principals and members of the cast, no matter how much artistry is developed by the director in his treatment of theme or scene, unless feeling and artistry are adequately caught by the camera and registered for all time on the film with the same appreciation of artistic qualities their value is utterly lost. L. Guy Wilky, who tells here of his experiences as cinematographer for William deMille, shares with that director the artistic honors accorded deMille productions.)

There is no set form of cinematography. Perhaps that is why it has earned the right to be termed an "art." To attempt to standardize it strictly would deprive it of its expression, and it would soon become rigid and inflexible, slow to progress, rather than being the extremely facile medium that it is today.

Any effort to classify or designate the various standards of cinematography, is, therefore, extremely difficult, outside of indicating, in the most general way, the kind of photography that is used for the outstanding types of motion picture direction.

The cinematographer who has a theme of rousing action

with which to work—costume stuff, with plenty of sword-play and back grounds of castles, and the like—possesses the opportunity to blossom forth with the kind of motion photography which, if properly done, must command the attention of even the casual layman. He has, it has been said aptly, a "photographic picture" to work with. He is enabled to conjure results which are as spectacular in their own way as are the direction and action which they help so much in "putting across."

On the other extreme, we encounter comedy cinematography, replete with "special effects," necessary in aiding and abetting the spontaneous registering of the endless array of "gags" on which the average short comedy thrives. Strangely enough, this branch of cinematography has proved the training ground for cinematographers who have later been retained to utilize their knowledge in putting the intricate action of some of the greatest dramatic productions on the screen—as witness Fred W. Jackman, who, though now a director and a member of the Motion Picture Directors Association, is still acclaimed for his mastery of "trick" cinematography and who has continued to be an active member of the American Society of Cinematographers. The work of the comedy cinematographer, in short, is such that it, too, stands out for recognition to all those who view motion pictures.

Between the foregoing two extremes then, there lies a

field of cinematography wherein the highest compliment that could be paid to the cinematographers, who are giving forth their efforts in it, is that their work, in a given production, is scarcely "noticeable." By that is not meant that the cinematography fulfills its mission in such instances by being inferior or merely passable—by no means; it must, on the other hand, be just as conducive of attaining the end of action and story that the director has in view.

The writer knows of no better means whereby to identify this sort of cinematography than by referring to the productions of William deMille, with whom, if the personal mention may be pardoned, he has been associated for the past six years during which time he has been chief cinematographer on the twenty-five productions which Mr. deMille has produced for Famous Players-Lasky.

As is readily recognized, Mr. deMille's productions have not been of the swash-buckling action sort; nor have they been, on the other hand, of the strictly comedy type. Hence there was no call for the two extreme "types" of cinematography as have been heretofore mentioned. Far from it—this director's touch required a treatment all of its own, and it was in this direction that the writer immediately bent his efforts as soon as he became associated with Mr. deMille.

For the purposes of this article, Mr. deMille might be referred to as a "psycholog-

Braves Turbulent Waves for South Sea Film

Fischbeck Conquers Mountainous Surf—Cinematographically *in* Porto Rico



A. S. C. Member Narrowly Escapes Death *while on* Treacherous Water Location



By raft and boat, Harry Fischbeck, A. S. C., took his camera into the swirling surf at Porto Rico for the filming of Paramount's "Alma of the South Seas" starring Gilda Gray, and had his daring rewarded by being almost drowned by the dashing waves. Once a gigantic wave caught him and threw him far from the shore, and he was slowly floundering in the undertow when a native swimmer reached him in the nick of time.

Above: In tow to photograph a sail—no studio tank this! Lower left: Launching to get a close-up of the breakers and rocks. Harry Fischbeck, A. S. C., (lower right) is at the camera.

The rocks in the background are 55 feet high, while the waves break still higher. From the perspective of the camera, Fischbeck had to look on a 65 degree angle to see the top of the waves which came 200 feet above the rocks.



Urge Credit in Theatre Programs



Recognition for the cinematographer is a subject which has long commanded the attention of those in the cinematographic branch of the film industry.

Through the continued efforts of the American Society of Cinematographers and the co-operation of the part of the important producers, screen credit, on major productions, has become the rule rather than the exception. The line, photographed by "———, A. S. C.," has become an integral part of the credit titles of innumerable producing organizations.

Now that the cinematographer has achieved recognition, to such a large degree, from the producer, it has come to pass that the credit for which he has striven so arduously is in serious danger of being obliterated insofar as the ultimate theatre-going public is concerned. Reports from widely diverse parts of the country carry the information that many of the influential exhibitors are engaging in the practice of cutting credit titles from the prints which they exhibit. While in some instances the responsibility of the exhibitor in the situation is denied, in other cases the argument is advanced, as an extenuating circumstance, that this gross elimination of the credits is essential in order to meet time requirements in programs.

Deleted Captions Lost

The most serious aspect of the entire affair is the fact that once the credit titles have been taken out at the larger houses they seldom if ever find their way back into the print before it is assigned to the hundreds of smaller houses. The result is that the photographic "by-lines" of the cinematographers, as well as other deserving film artists, are precluded from being presented to the millions of patrons who make up the theatre audiences throughout the world.

Aside from the fact that the few seconds required to project the ordinary credit title renders almost absurd the claims as to the time saved by cutting such, the cinematographer and his co-artists feel as justified in having their work carry their "by-lines" as do the author and the magazine illustrator—and so on down the line.

Story in Exhibitors Herald Suggests Cure when Credit Titles Eliminated

Damage May Be Permanent

While the present may be an unripened perspective from which to hazard a prognosis, it might well be imagined that some of the cinematographic efforts might be, a few generations hence, masterpieces to the cinema world, just as the works of the old masters are to painting. What a pity it would be to have such moving pictures unsigned—which the indiscriminate hacking of credit titles could make possible.

It has been suggested that if the exhibitor finds the credits missing from his print, he may insert the properly accredited names in his program. If such names are not forthcoming from the exchange, a letter sent to the American Society of Cinematographers, Hollywood, if the exhibitor knows the dates of his bookings sufficiently in advance, will elicit the desired information.

A. S. C. Members Purchasers of Iris Made by Fred Hoefner

Park Ries and King Gray, both members of the American Society of Cinematographers, and Walter J. van Rossem are recent purchasers of the Hoefner iris, which is manufactured by Fred Hoefner in Hollywood.

Hoefner also maintains a machine shop, specializing in expert and precision mechanics for camera work.

American Society of Cinematographers

BALL

Hotel Biltmore
Los Angeles

SATURDAY

February 20, 1926

The EDITORS' LENS . . . focused by FOSTER GOSS

A New National Instrument

¶ Students of events in the photographic world believe that they see indications of the history of the "kodak" repeating itself with the influx of amateur motion picture outfits to the film marts of America. The original amateur still camera was something of a curiosity, but once the good citizens awoke to the fact that they could take their own pictures with a simplicity that they had never imagined, the American family album had to throw off its plush cover, pitch out its trick music machine, and substitute therefor an abundance of loose leaves to make room for each week-end's supply of prints. Making one's own pictures has become institutional—as institutional, in fact, as it is to visit the motion picture theatre.

¶ The general popularity of the motion picture, the thoroughness of the basic and revolutionary science of cinematography, could but pave the way to the time when moving pictures would come into extensive personal use, in any amateur way, among the public at large. The American likes to have his picture taken as well as to look at pictures. The naturalness of the motion picture's portrayals makes it ideal for the informal picture-taking of the American family. It was only necessary to remove the recording of cinematography to a basis where it could be indulged in conveniently, inexpensively and with a minimum of bother, before an era of widespread amateur motion photography would set in.

¶ The beginning of that era is at hand. The products, which reliable manufacturers are placing in the field of amateur cinematography, are making possible a universal usage of the motion picture. Truly, it is the history of the "kodak" repeating itself. With volume production and marketing of the small, simplified cinematographic sets, moving pictures are being put within the reach of those who never before believed that such could be made available to them without an enormous outlay for professional equipment. The transition from a rich man's hobby to a poor man's pastime has set in.

¶ With these developments in the air, this publication has decided, as is announced elsewhere in this issue, to devote a department to amateur cinematography, with liberal attention being paid to legitimate questions and answers. It is hoped in this way to contribute materially to the progress of amateur cinematography, which promises a very full future indeed.

¶ The Projector Consolidation

¶ The consolidation of the manufacturers of the Powers, Simplex and Acme projectors is being looked on generally as a move which should prove ultimately of great advantage to the motion picture industry as a whole. Reduction of overhead, the combining of facilities under one centralized head, and the aggregate experience of the respective organizations are viewed as making for a body of workers who will maintain, in the greatest way, high projector manufacturing standards.

¶ The consolidation will be known as the International Projector Corporation, which will have headquarters in a ten-story building at 90 Gold street, New York City. The companies, which were merged in the new corporate identity, include the Nicholas Power Company, the Precision Machine Company of New York and the Acme Motion Picture Projector Company of Chicago.

A. S. C. Ball to Be Brilliant Film Event



Occasion to Be Most Ex-
clusive Formal Function
in Motion Picture Annals



View of the Biltmore Ballroom

Preparations for the motion picture ball to be staged by the American Society of Cinematographers at the Hotel Biltmore, Los Angeles, on Saturday night, February 20, give every indication that the affair will be the most elaborate in the history of the A. S. C.

In the past the A. S. C. balls came to be recognized as the most exclusive staged in the capital of motion pictures, and the forthcoming affair, it is stated, will transcend even its predecessors in brilliance. The occasion will limit attendance to members of the motion picture profession.

Special Features

Arthur Edeson, chairman of the entertainment committee, is arranging for a number of surprise presentations which are planned to outshine even the spectacular numbers which the Society has presented at similar affairs in the past. Affairs of the ball are being conducted by Homer Scott, president of the A. S. C., as chairman of the ball committee, Fred W. Jackman, treasurer of the ball committee, and Richard Connor, specially engaged to conduct the direct management of the event.

Boxes

Reservations are already being made for boxes in the Biltmore ballroom which contains 13 boxes, which will seat 6 people; 2 boxes which will seat 12, and 2 which will seat between 16 and 18 individuals.

Tickets for the affair have already been placed on sale and may be secured through A. S. C. members or at the A. S. C. offices, 1219-20-21-22 Guaranty building, Hollywood.

Only a few days remain for the reservation of advertising space in the souvenir program which will be presented to every person attending the ball. The program will carry a diversified array of advertising material; it is not being limited to professional advertising, but includes the messages of specialty shops, mercantile and other establishments.

The physical appearance of the program will represent a distinct achievement in the art of typography, to be printed on the finest grade of stock and a rich, gold-embossed cover.

Dance music for the ball will be furnished by one of the most prominent orchestras in California, it is announced.

RELEASES

December 7, 1925, to January 17, 1926

TITLE	PHOTOGRAPHED BY
The Splendid Road	Norbert Brodin, member A. S. C.
Seven Sinners	David Abel, member A. S. C.
What Happened to Jones	Arthur Todd
Cobra	J. D. Jennings, member A. S. C.
Sally, Irene and Mary	John Arnold, member A. S. C.
The People vs. Nancy Preston	Sol Polito, member A. S. C.
A Broadway Lady	Not credited
We Moderns	T. D. McCord, member A. S. C.
Skinner's Dress Suit	Arthur Todd
The Golden Strain	George Schneiderman, member A. S. C.
Joanna	Robert B. Kurrle, member A. S. C.
Time, the Comedian	Oliver Marsh
The Man from Red Gulch	Georges Benoit, member A. S. C.
The Golden Cocoon	Byron Haskins
The Lawful Cheater	Not credited
The Splendid Crime	L. Guy Wilky, member A. S. C.
The Cowboy Musketeer	John Leezer
Tonio, Son of the Sierras	Alfred Gosden and Jack Johnson
The Midnight Limited	Ernest Smith
The Perfect Clown	H. F. Koenekamp, member A. S. C.
Tumbleweeds	John Stumar, member A. S. C.
The Wedding Song	Not credited
His Secretary	Ben Reynolds
A Woman of the World	Bert Glennon, member A. S. C.
Madame Behave	Gus Peterson
A Desperate Moment	Roland Price
When Husbands Flirt	Sam Landers, member A. S. C.
The Unchastened Woman	Wm. O'Connell
A Kiss for Cinderella	J. Roy Hunt
Sweet Adeline	Philip Tanura
Bluebeard's Seven Wives	Ernest Haller, member A. S. C.
Steel Preferred	J. D. Jennings, member A. S. C.
The First Year	Chester Lyons
Soul Mates	Oliver Marsh
That Old Gang of Mine	Not credited
Infatuation	Hal Rosson
Blue Blazes	Jack Young
Stop, Look and Listen	H. F. Koenekamp, member A. S. C.
The Ancient Mariner	Joseph August
Enemy of Men	Frank Good, member A. S. C.
The Midnight Flyer	Harry Perry, member A. S. C.
The Still Alarm	John Stumar, member A. S. C.
The Enchanted Hill	Alfred Gilks, member A. S. C.
That Royle Girl	Harry Fischbeck, member A. S. C.
Braveheart	Faxon Dean, member A. S. C.
The Palace of Pleasure	Ernest Palmer, member A. S. C.
Mike	David Kesson
My Ladys of Whims	Jack Young
Fighting Fate	H. Lyman Broening, member A. S. C.
Mannequin	Karl Brown

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Motion Picture Film Department

EASTMAN KODAK COMPANY

ROCHESTER, NEW YORK



Max Dupont, A. S. C., photographed the Universal production, "His People," which, directed by Edward Sloman, is being accorded the praises of the critics.

* * * *

James C. Van Trees, A. S. C., is filming "The Prince of Pilsen" at the Metropolitan studios. The cast includes Anita Stewart, George Sidney and Allen Forrest.

* * * *

Norbert Brodin, A. S. C., has completed photographing "Paris at Midnight," a Frances Marion production directed by E. Mason Hopper at the Metropolitan studios. Brodin is now ready for duty on the next production to be directed by Frank Lloyd, the latter having recently returned from his trip to the Orient.

* * * *

H. Lyman Broening, A. S. C., has been on location in San Francisco for several days, photographing for Warner Bros.

* * * *

Faxon Dean, A. S. C., is being congratulated on the cinematography in "Braveheart," the Cecil B. DeMille production directed by Alan Hale. Rod La Rocque starred before Dean's camera.

* * * *

J. D. Jennings, A. S. C., is photographing the latest Buster Keaton feature.

* * * *

Bert Glennon, A. S. C., is back in Hollywood from a week's stay in Truckee, Calif., where he went on location for snow scenes in the latest Paramount production starring Pola Negri.

* * * *

Len H. Roos, A. S. C., who recently returned from an extended cinematographic trip to Australia and New Zealand, has joined the Alexander Film Company, Denver, Colo., as chief cinematographer.

* * * *

Arthur Edson, A. S. C., is still engrossed in filming the mysteries of "The Bat," which Roland West is directing for United Artists release.

Henry Sharp, A. S. C., has completed the cinematography on Douglas Fairbanks' "The Black Pirate."

* * * *

Harry A. Fischbeck, A. S. C., has finished photographing "Aloma of the South Seas," starring Gilda Gray, at the Paramount eastern studios. Fischbeck is making preparations for the filming of "Sorrows of Satan," the next production to be directed by D. W. Griffith, for whom the A. S. C. member is chief cinematographer.

* * * *

Dan Clark, A. S. C., has returned to Hollywood from a location trip for the photographing of the latest Tom Mix production for Fox.

* * * *

Victor Milner, A. S. C., is filming the current William Wellman production for Famous Players-Lasky.

* * * *

Frank B. Good, A. S. C., has completed photographing "The Gilded Butterfly," a current Fox special production. He is now filming "The Dixie Merchant," a Fox feature directed by Frank Borage.

* * * *

Jay Turner, A. S. C., is photographing the Fox production, "From the Cabby's Seat," one of the series of vehicles based on the O. Henry stories.

* * * *

Ernest Palmer, A. S. C., is filming "Dangers of a Great City," a Fox production directed by Chester Bennett.

* * * *

Frank Cotner, A. S. C., is shooting "Without Orders," a Malaford production starring Leo Maloney.

* * * *

Georges Benoit, A. S. C., is photographing "Forbidden Waters," a Metropolitan production starring Priscilla Dean.

* * * *

Charles G. Clarke, A. S. C., is filming "Whispering Smith," George Melford's latest production for Metropolitan.

Marshall Re-joins Paramount; Abel Signs New Warner Contract

William Marshall, A. S. C., has re-joined the cinematographic staff of the Famous Players-Lasky Studios in Hollywood, where he photographed numerous of the outstanding hits released under the Paramount banner several years ago. Marshall will film the next production starring Raymond Griffith; Art Rosson will direct.

Marshall was long identified with George Melford productions for Paramount and filmed such features as "Moran of the Lady Letty," with Dorothy Dalton and Rudolph Valentino; and "The Sheik," which signalized the popular designation of Valentino as "the sheik." Among the other Paramount vehicles photographed by Marshall were "The Great Impersonation," with James Kirkwood; "Our Leading Citizen" and "The Proxy Daddy" with Thomas Meighan, and "The Ghost Breaker."

Abel Signs

David Abel, A. S. C., has signed another contract for a period of one year. Abel has just returned from New York City and Montreal, Canada, having been absent for ten weeks on a combined business and pleasure trip.

Abel has been responsible for the cinematography on numerous of the most notable Warner Bros. productions, including "Beau Brummel," "Babbitt," "The Lover of Camille," "The Dark Swan," "A Lost Lady," "Recompense," "The Man Without a Conscience," "How Baxter Butted In," "Compromise," "Rose of the World" and "Seven Sinners."

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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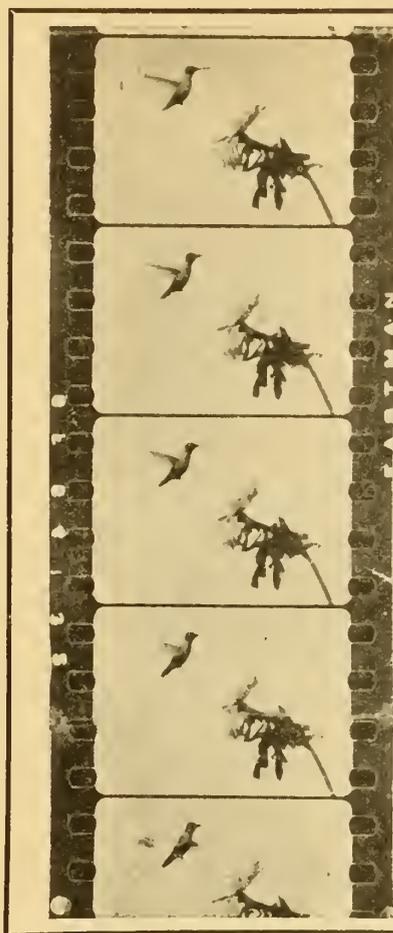
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 Superintendent of Photography

Edwin S. Kuee
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A CLOSE UP
OF A
TEMPERAMENTAL ACTRESS
MADE WITH A
Universal Motion Picture
Camera

Motion picture of a hummingbird in flight. Taken at a distance of 18 inches, and the bird held within this extremely small field for a full minute period. The bird is so large on the screen that it is easy to determine the exact manner in which the feet are carried in flight; a fact heretofore not definitely known.

*Photographed and Produced by T. Walter Weiseman
of "Bird Manor"*

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CHICAGO

(Continued from Page 7)

ical" director. His action is not expressed via the medium of violent action. If the keynote may be struck at all, his story is told by suggestion—subtly, as the critics seem to agree. Now, then, if Mr. deMille's direction is subtle, his cinematography must be all that, and more. Above all, it must be unobtrusive. The bold, hard effects cannot be gone into. They might jar with the story, rather than working along with it. That is the point that the writer reasoned out at the beginning of his association with Mr. deMille; the diagnosis proved correct and is only more emphasized at each script reading which Mr. deMille holds with all the members of his cast and staff at the beginning of each production, at which time he tells

the story of the picture in his own words with recommendations to the cinematographer as to "key" in which the cinematography is to be struck.

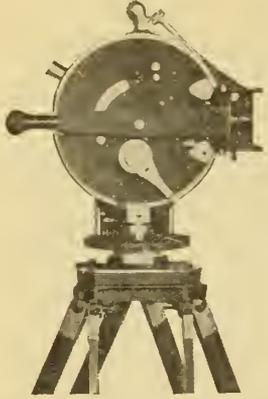
It must be admitted that there is no hard and fast cinematographic rule for direction such as Mr. deMille's. As had been said heretofore, this matter of motion photography is difficult of standardization. Then how, it may be well asked, may Mr. deMille's direction be exemplified in cinematography, if that direction is recognized as being distinctive in its own right? To such a query it must be answered, that the cinematographer who would be successful in the portrayal of direction such as that of Mr. deMille must, basically, view the entire production exactly from the perspective of the director himself. He

must put himself "in the director's shoes." His viewpoint is that of the cinematographer, to be sure; but not exclusively so. He must, briefly, look at the matter from a dual promontory—from that of the director and the cinematographer both. If he can put on the celluloid what the director has in mind, then he is successful; otherwise he isn't. If he thinks exclusively cinematographic, then there is apt to result that "jarring" which Mr. deMille has so endeavored to avoid in his productions.

If the writer were able to suggest a formula—what kind of light to use and where to place it, what sort of lens to use and how to expose it, and so on—he would only be establishing an equation, the correct answer of which would be that after all cine-

PARIS	<h2 style="text-align: center;">RENE GUISART</h2> <p style="text-align: center;">☞</p> <p style="text-align: center;">Atmospheric Shots in Any Part of Europe</p> <p style="text-align: center;"><i>Taken according to your own in- structions in an artistic manner to match the pho- graphy of your pro- duction.</i></p> <p style="text-align: center;">OFFICIAL CORRESPONDENT IN EUROPE FOR:</p> <p style="text-align: center;"><i>American Society of Cinematographers; Frank D. Williams</i></p> <p style="text-align: center;">118 Avenue des Champs-Elysees PARIS</p> <p style="text-align: center;">Cable Address: LOUVERANDE-PARIS</p>	BERLIN
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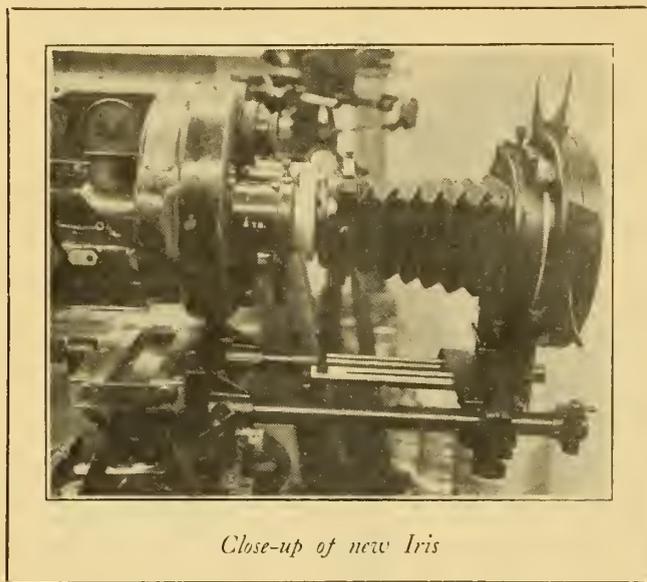
matography is standard. However, it isn't. Therefore, knowing what the deMille "idea" is, the cinematographer must literally sense the best manner in which to handle the photographing of any one given scene. Mind you, it is not said that he gropes about wildly for ideas. If artists have souls and if cinematographers are artists, then it might be ventured that the camera artist's soul is susceptible to inspiration when he endeavors to crystalize some scene in this subtle kind of direction. But behind that inspiration there must be thorough and basic knowledge, not only of the fundamentals of cinematography but of the working methods of the director whose "style" is universally heralded wherever motion pictures are shown.

For instance, in Mr.

deMille's "Grumpy," the theme revolved about Theodore Roberts in the role of a grandfather. There was a great deal of grouching about the characterization, although it radiated its share of humor in the aggregate. The cinematography for this production may be said to follow the lines of something definite and sharp, to use a technical designation. It is severe and conventional, whereas that of "Midsummer Madness," a production made by Mr. deMille some six years ago, struck the chord of softness, of moonlight, and of the romance of youth. That of "Only 38," while it had to fit in with a decided love theme, called for something less vague and more mature. The lighting and the exposures had to be conducive of something more substantial, more sophisticated. Then we

come to "The Fast Set." The cinematography properly was light and airy—"fast," as it were. There could be no sombreness about it, such as in the stark "Grumpy" and, more recently, "The Splendid Crime," just completed. The latter production called for an atmosphere that is gloomy, with long shadows and thin rays of light. There is much action in semi-darkness. There is the extinguishing of all lights but that coming from the lamp on a table in the center part of a room; then that too is put out with a resulting darkness that is to be pierced by a flashlight. And so it is that we arrive at a treatment in cinematography that represents the other extreme from something breezy and rollicking as that in Barrie's "What Every Woman Knows" which Mr. deMille produced.

Harry D. Brown Introduces
New Iris for Cinema Work



Close-up of new Iris

By special arrangement with C. S. Worth, Harry D. Brown has become sole distributor of a new iris device for motion picture cameras. This invention is principally a shading and matting device and is announced to be quite an improvement over the original iris.

It is already in use and it is claimed that it gives a picture greater volume and depth. It can be attached to any type camera and contains a matting device in the form of slides which come in gauze and solids, which are already within the attachment, leaving no separate pieces to be carried.

To facilitate rapid handling of double exposures the whole device is built to move universally and can be used for any lens from 26 millimeters to 6 inches. It has a bellows extension, filter holders, sky filter, gauze mat-box, four-way sliding gauzes and four-way solid matting plates. The iris is 4½ inches in diameter and clears perfectly on 28 millimeter lens, closing out entirely.

The theory of the new iris is that light rays do not travel in a straight line, but have a rolling motion from sides and bottom, therefore making necessary a shading device that would reach a greater depth of picture and so concentrate the light rays. This is accomplished with a specially constructed hood with numerous light traps and which is removable from the instrument.

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3 in.....	122.50	61.00
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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 sizes from 8½ to 20 inches. For all around long focus work the 6½ inch at \$92.00 (not including mount) offers the speediest aperture of F 3.5—combines flatness of field with perfect color correction.

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New Hollywood Studio Club Soon Ready *for* Occupancy

The Hollywood Studio Club for girls which is being erected by the National Board of the Y. W. C. A., at the corner of Lodi Place and Lexington Avenue, is nearing completion and will be ready for occupancy late in February.

Girls and women of the motion picture industry are watching its progress with interest—as a club house and centre of activities as well as a residence for the eighty girls who will live there.

A central patio, a large studio for dancing or amateur theatrical performances, writing, make-up and rest rooms are some of the features which will serve all members of the club.

Membership plans will be worked out early in 1926 and an opportunity will be given for all girls and women who are interested in its purpose and affiliated with the picture industry, to become members. The opening date will be announced later.

Miss Julia Morgan, the architect, met with the committee last week at the home of Mrs. Cecil B. de Mille, and plans for furnishing and equipment were discussed. The entire cost of the building and lot have been met by funds raised by a building campaign conducted in 1923 to which most of the motion picture corporations and more than 2000 people contributed, together with the profit realized from the sale of the old property on Carlos Avenue.

The furnishing and equipment will cost \$25,000 more and the committee has just sent out an appeal for contributions to this fund. They have suggested that gifts be made personal by designating what items of furniture and equipment they are to cover and have submitted this partial list of items with their estimated cost:

Furnishing one of the 50 single bedrooms.....	\$ 150.00
Furnishing one of the 20 double bedrooms.....	200.00
China and glass.....	500.00
Dishwashing machine	500.00
Linen	1,000.00
Electric light fixtures.....	1,000.00
Office furniture and equipment.....	600.00
Garden	500.00
Dining room furniture and draperies.....	1,500.00

Estimates have not yet been made on other articles needed, including piano, and projector.

Among those who have already responded are the Feagans Co., Mary Pickford and Douglas Fairbanks, Florence Vidor, Mr. and Mrs. Lucien Littlefield. A fund of \$3,000 was raised some time ago by girls who lived at the old club and the decision as to how it is to be used will be left to their committee.

WANTED—Bell and Howell camera complete; 170 shutter. A-1 condition and reasonable figure. Phone MAin 2861, Los Angeles.

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IN the old days you frequently heard of some temperamental star refusing to work under anything but Cooper Hewitt light. Now they don't get a chance to refuse. Roam as you will, it's hard to find a studio that isn't busy and happy “under the Coops.”

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Reginald Lyons, A. S. C., Hurt; Thrown From Trailer in Crash

Reginald Lyons, A. S. C., sustained painful injuries last month when, during the filming of Buck Jones' "The Fighting Buckaroo" for Fox, he was thrown from a camera trailer which was traveling at the rate of 40 miles per hour. The accident occurred on Hollywood Boulevard near St. Andrews Place, Hollywood.

Lyons suffered a broken nose, severe body bruises, a sprained wrist and lacerated knees and limbs. He was confined in bed at home for a week, but is now back at his post as chief cinematographer on Buck Jones features.

Lyons was precipitated to the street when the wheels of the trailer, which was being pulled by an automobile, caught in the street car tracks, the back wheels of the vehicle passing over the A. S. C. member's body. The camera and lenses which Lyons was operating were practically a total wreck.

New Photographic Firms Starts Business in Hollywood Field

William Thornley and Tony Kornmann, well known in Hollywood photographic circles, have opened a portrait, motion picture and commercial studio at 5422 Santa Monica Boulevard, Hollywood.

They will engage in the various phases of photographic and cinematographic work, with special attention to developing, printing, enlarging and copying. In addition, they will carry motion picture and still cameras for rental purposes.

John W. Boyle, A. S. C., is photographing "The Second Chance," a First National feature directed by Lambert Hillyer.

* * * *

Robert Kurrle, A. S. C., is hard at work on the cinematography on Edwin Carewe's latest production, "Running Wild," for First National.

* * * *

Sol Polito, A. S. C., is filming "The Frontier Trail," Harry Carey's latest starring feature.

* * * *

Harry Perry, A. S. C., is in Arizona with Charles Brabin, in search of locations for "The Winning of Barbara Worth," a Principal Pictures Corp. production. Brabin will direct and Perry will be chief cinematographer.



NO CAMERA can be better than its lens. There is a life-time of satisfaction and pride for the owner of a Carl Zeiss Tessar—the lens which is doing the world's finest photography. Among prominent users of Zeiss Tessars are the U. S. Army Air Service, The National Geographical Society, The American Museum of Natural History, Famous Players and a legion of others. The Tessar f4.5 is standard equipment on the finest imported cameras. For greater rapidity there is the Tessar f3.5 and the Tessar f2.7 has recently been introduced. For rapid distance-photography the Tele-Tessar and for photo-engraving the Achromatic Tessars enjoy an enviable popularity.

Which catalogue may we send you?

- '' Zeiss Photo Lenses ''
- ''The new Extra-Rapid Zeiss Photo Lenses''
- (f 2 . 7 series)
- '' The Tele-Tessar ''
- ''Optical Instruments for Process Work''

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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 wry.

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

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(Continued from Page 4)

"The best of all," Roos continued, "was accorded me in Sydney, Australia. I was making a shot in the Domain and took my camera over to the gate to set up away from the crowd. A chap on the other side of the gate had one of those tin-type, quick-finish cameras all ready for business. He watched me draw out the tripod legs and then yelled: 'Ere now, 'op it. I've 'ad this plice for a long time and this is my plice. Now 'op it!' Talk of American newsboys and how they guard their 'corners'—I 'opped.'"

Roos, who is now back in the United States with the Alexander Film Company at Denver, Colo., recently returned from a trip of several months to Australia, New Zealand, and lands on the other side of the equator.

(Continued from Page 5)

mission, the bill being introduced by a Republican, naturally being accorded support from members of that party.

Governor Alfred E. Smith named John H. Walrath, former Mayor of Syracuse, to the New York State Motion Picture Commission on Monday night of this week. Mr. Walrath will succeed George H. Cobb, of Watertown, who has been chairman of the commission since it began to function in August, 1921. Mr. Cobb will return to his home in Watertown and take up the practice of law. The position pays \$7,500 but there is a possibility that the commission will be wiped out of existence this year by either Governor Smith or the reorganization plans.

All three heads of the commission are now Democratic politicians and leaders in their respective cities. Mr. Walrath was for many years a leading business man in Syracuse and served as Mayor for several terms, being defeated last fall. Mrs. Elizabeth V. Colbert, also one of the heads of the commission, is Democratic vice chairman of Albany county, while Arthur Levy, secretary of the commission is a Democratic politician of New York.

Although Governor Smith has named a person to succeed Mr. Cobb, he let it be known that he is firmly convinced that censorship should go and that he was still standing on the same policy of years past in declaring that motion picture censorship was absolutely unnecessary. When Mr. Walrath

Taken in a Pouring Rain at Dusk, with

The ULTRASTIGMAT-f1.9

Gentlemen:

I enclose some pieces of negative which I took in a pouring rain at ten minutes to 6 o'clock on September 12, the last event of the Rochester Horse Show.

This film was used in International News Reel No. 78.

Without your wonderful Ultrastigmat speed lens F:1.9 I believe it would have been impossible to get this picture.

(Signed) CAROL FENYVESSY,
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Water Engine

was selected for the position, he was acquainted with the situation and the possibility of the position being little more than a temporary one.

The plan as outlined by the leading Republican majority in the Assembly as well as the Senate according to the best authorities is that no action will be taken or the Republican attitude on censorship will not be known until the Charles E. Hughes non-partisan reorganization committee files its report with the Legislature.

The proposition is to see what this committee decides relative to the consolidation of the state departments. It is reported that the Hughes committee will not recommend the abolition of the commission entirely, but will recommend that the functions of the censor board be transferred to the State Department of Education.

The report of the New York State Motion Picture Commission, just submitted to Governor Smith, outlining the work of the commission during the last twelve months, there were 4,236 eliminations made by the commission during the last twelve months, these consisting of 3,868 scenes and 368 titles. All told the Commission examined 8,949 reels. Eliminations were made from 712 films, while 2,598 films were approved by the commission without eliminations. There were 592 permits granted without examination and 3,310 original licenses issued, while duplicates were issued to the extent of 36,039.

Twelve features were condemned in their entirety by the commission. Eliminations were made on the following grounds, in some cases eliminations being made on more than one ground: Indecent, 656; inhuman, 1,438; tending to incite to crime, 1,804; tending to corrupt morals, 318; sacrilegious, 20.

Of the eliminations made by the Commission, 428 came from dramas; 140 from comedies; 61 from comedy dramas; 65 from serials; two from news reels; two from educational; one from cartoons, and 13 from miscellaneous. During the year 32 appeals from decisions of the Commission were made by producers seeking a review by the entire commission.

The report of the commission to the Governor stresses the fact that it is a revenue-producing body and calls attention to the fact that during the period of its existence from August, 1921, to January 1, last, the receipts of the censoring body amounted to \$853,-



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..... 192

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986.85 and that its running expenses over the same period amounted to \$373,927.97, leaving a profit to the state of \$480,058.88. During the past year receipts amounted to \$197,049.34, the largest in the history of the commission, but its operating expenses of \$89,956.33 were also the largest.

In connection with the Commission's report, a portion is devoted to the aid that has been given the commission by state troopers who visit the theaters in the smaller communities and who report directly back to their head, on any violations of the law. The same recommendations were made by the Commission as a year ago, which include one giving the Commission power to stop the showing of pictures in which criminals or persons of a debased character appear.

The Commission also calls attention to a question as to the power of municipalities to prevent the exhibition of films that have been licensed by the state. It appears that there have been one or two complaints of this sort coming from the municipality which has a censoring board of its own, and where persons in charge insist that different eliminations be made from the picture other than deemed necessary by the Commission.

According to the Commission pictures have shown great improvement since the censorship became effective in New York State, the report closing with a declaration to the effect that on account of the millions invested in motion picture theaters, that there is even greater need of censorship and clean, wholesome pictures than ever before, not only to protect the public, but also to protect those whose fortunes are invested in the theaters.

(Continued from Page 5)

Shipyard, Philadelphia. She will be launched this coming spring and will be placed in service on the San Francisco-Honolulu run in the spring of 1927.

Both of the motion picture projection quarters will be provided with electrically driven exhaust blowers, doors, and other equipment to meet the requirements of the National Board of Fire Underwriters. The lounge projection quarters will be a built-in steel structure lined with magnesia and galvanized sheet iron. The screen will be designed to roll up and lie concealed within a false beam aft of the fireplace.

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1	3/4x1	2	50	\$22.00	\$26.00
2	1 1/4x1 1/4	3	75	30.00	34.00

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1	3/4x1	1 1/4	32	\$23.50	\$26.00

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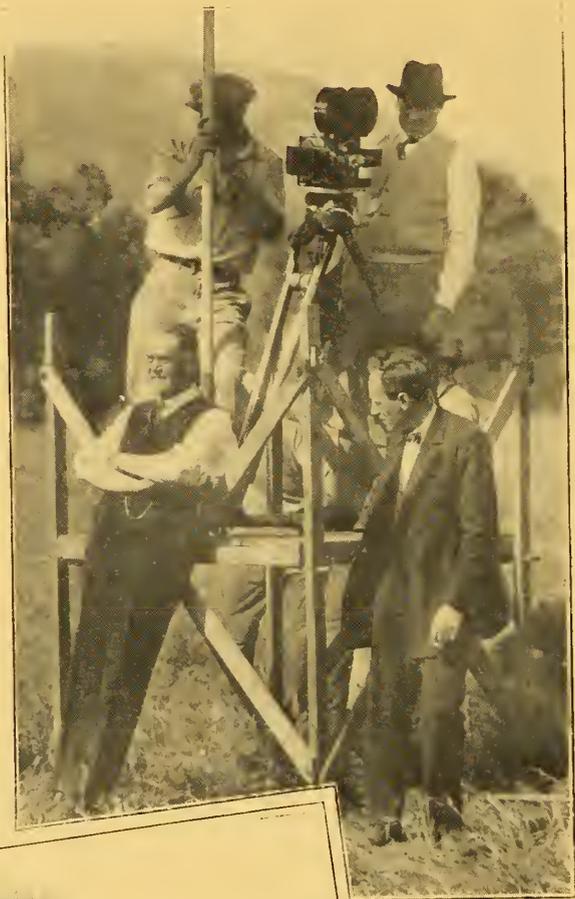
Meetings of the American Society of Cinematographers are held every Monday evening. On the first and the third Monday of each month the open meeting is held; and on the second and the fourth, the meeting of the Board of Governors.

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Yours truly,

Victor Searcy

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American Cinematographer

Published by the American Society of Cinematographers, Inc.



This Month:



John W. Boyle, A. S. C., Invents "Close-up Long-shot" Device—By Maxwell Shane

Herford Tynes Cowling, A. S. C., Films Coronation of Sir Hari Singh

"Black Light"—

By Herbert S. Marshutz, A. B., D. Opt.

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American Cinematographer

FOSTER GOSS, *Editor and Business Manager*

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A. S. C. ROSTER.	

An educational and instructive publication, espousing progress and art in motion picture photography.

Published monthly by THE AMERICAN SOCIETY OF CINEMATOGRAPHERS, Inc.

Subscription terms: United States, \$3.00 a year; Canada, \$3.50 a year; foreign, \$4.00 a year; single copies, 25 cents

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Telephone GRANite 4274

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Amateur Cinematography

☪ (Questions on amateur cinematography will be gladly answered in this department. Inquirers should sign all queries

with correct name and address. Only legitimate questions will be considered. None which

tend to jeopardize general motion picture production by divulging trade secrets will receive attention.)

The extremely portable motion picture cameras which make it possible for the amateur to indulge in cinematography open an entirely new era of "picture taking." As fascinating as it has been, still photography of the past has been necessarily limited, and, at the best, could offer only a fragmentary record of any given occasion.

Complete Record

With the newly created cameras and projectors at the disposal of the amateur, a practically complete record, of that which the still camera could make only partially permanent, is possible. Action pictures are feasible at last. The fastest of the amateur still cameras could present only one phase of a given "scene," whereas the new motion picture cameras perpetuate the entire happening. "Natural" pictures are to be had for the asking. The posing incident to the average still shot is not conducive of naturalness.

Amateur "Stills"

However, the amateur still cameras that have served so faithfully in the past need not be put in the discard because the owner has a new motion picture outfit. As in the professional motion picture studios, the still outfit should prove as indispensable as the cinematographic equipment itself. No production company would think of photographing a picture without ample provisions for "stills." The same should apply to the amateur.

Freedom of Motion

The new cinematographic creations make it possible for the amateur photographer not to be "tied to the ground" any more. Too many owners, in the habit of keeping their subjects stationary for still pictures, pursue the same method once they begin filming with their cinema outfits. This is positively not necessary. They are as free, photographically, as the

Welcomes Idea

—

*American Cinematographer,
Hollywood, California.*

Gentlemen:

Enclosed please find check for \$3.40 for "clubbing offer" of *American Cinematographer* and *Camera Craft*.

I am pleased to note the new department on amateur cinematography as I have always felt your magazine could fill a great need along this line.

I am sure both the professional and amateur will gain by this department.

Wishing your magazine success, I am,

Very truly yours,

(Signed H. W. GEORG.)

*Herbert Georg Studio,
514½ East Capitol Ave.,
Springfield, Ill.*

winds. Put the subjects of the film through as much action as they would naturally go through. They do not have to hold still until the shutter clicks. Keep them away from posing as much as possible.

Wealth of Angels

In amateur still photography, virtually all pictures have been habitually shot "head on" from the front. That has been the sole shooting angle. The cinema camera releases the amateur photographer from such stereotyped perspectives. He may shoot from the level of the ground, from overhead, side, back, etc., and his action will always be on the film. He may invade places heretofore thought to be inaccessible, photographically, and get results. Don't be afraid to take the amateur set to the edge of a cliff, to an upstairs window or to

a house- or tree-top to photograph. Portability is the keynote of the manufacturers' plan, and their equipment is designed to work from every conceivable angle.

Study Perspectives

Study camera angles. Give thought to the position from which the subjects of the picture can be photographed to the best advantage. The results will be surprising. Original and effective angles are a great factor in the success of professional cinematography. In visiting motion picture theatres, give attention to the various angles from which the different scenes are shot. The amateur cinematographer will soon pick up many mute suggestions as to how his own efforts may be made more forceful. The individual will well find amateur cinematography as interesting as professional film productions themselves!

E. I. E. S. Chooses New Officers

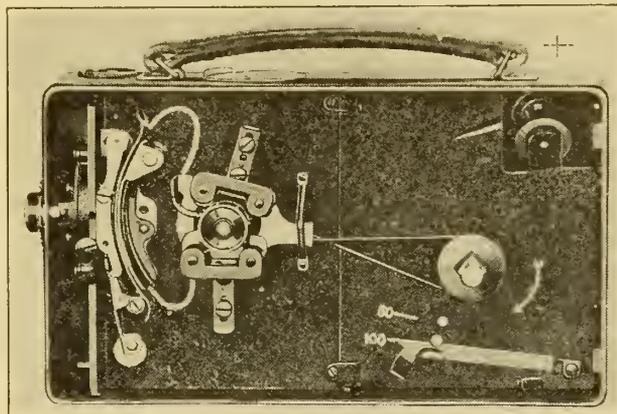
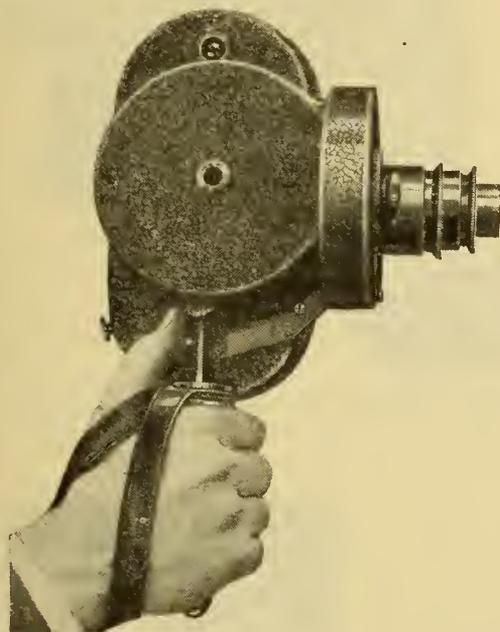
At the regular monthly meeting of the Electrical Illuminating Engineers on Thursday evening, February 11, at the Hollywood Athletic Club, the annual election of officers took place, naming Frank Arrousez as the new president succeeding William Whisler.

Harry D. Brown, acting as chairman of the nominating committee, submitted Arrousez for president, Herbert Alden for vice president, Ray E. Delaney for secretary, and Duke Daggy for treasurer, which was unanimously adopted by the members present. The two latter are re-elections having held these offices during the past term.

Prominent Features on Compact Cameras



Important Facts Concern-
ing Each Make Presented
in Answer to Inquiries



Left: View of Bell and Howell "Eyemo".
Above: Interior view of Eastman's Cine-Kodak,
"Model B".

For many months past queries have come to the *AMERICAN CINEMATOGRAPHER* from all parts of the world concerning the features of the various cameras and projectors on the market, suitable for the use of the amateur or those requiring an extremely compact and portable outfit. For the benefit of the many inquirers seeking such information, there are compiled herewith salient details relative to the various instruments:

Bell and Howell "Filmo"

The Bell and Howell "Filmo" weighs $4\frac{1}{2}$ pounds. Its size is 3 by 6 by 8 inches. The camera is automatic, being set in motion by the touch of a button. It will take a single picture as well as "moving" pictures. The film is 16 mm., of the reversible type. No tripod is required with the outfit. The shutter opening is 216 degrees. All regularly mounted standard micrometer Bell and Howell mounts may be used with an adapter.

Bell and Howell Projector for "Filmo"

The Bell and Howell projector to exhibit film taken with the "Filmo" weighs 9 pounds, and may be carried in a case 8 by 11 by 11 inches in size. Four hundred feet of the film

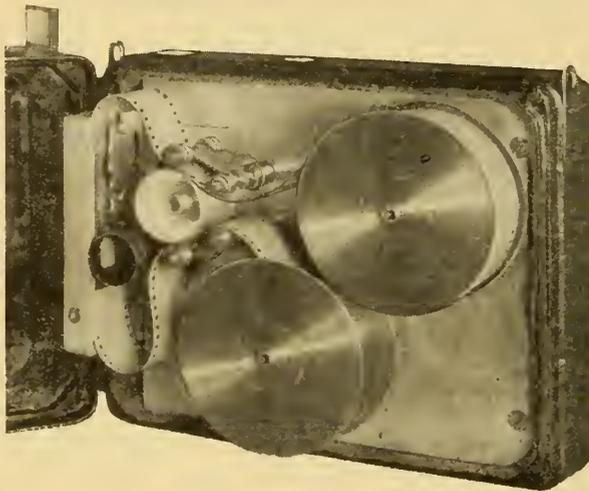
used requires the same projection time as 1000 feet of standard film. Universal mounts for objective lenses are provided, ranging from one and one-half to 4 inches. Pictures may be projected to the size of 9 by 7 feet. Condensers are of the plano type. Other details include mirror reflector; self-centering lamp mounting; 200-watt, 50-volt lamp; two-ounce air-cooled rheostat and auto fire shutter. The projector runs either forward or backward, or may be halted for a single picture without danger of warping the film.

Bell and Howell "Eyemo"

The Bell and Howell "Eyemo" uses standard motion picture film. The measurements of the camera are $4\frac{1}{2}$ by 6 by 8 inches and the weight is seven pounds. The "Eyemo" is entirely automatic. Power is furnished by a spring motor, which is rewound with a key. To insure an equal and uniform exposure of every frame, a governor controls the spring. The motor is controlled by a trigger. The speed of exposure is adjustable. Single pictures may be photographed. No tripod is used, but the instrument is held to the eye in field-glass fashion. However, a tripod may be applied by virtue of a universal socket



Upper left: Comparative size of Eastman's Cine-Kodak, Model "B", and of 3-A Kodak, folded.
Upper right: Illustrating De Vry Camera.



Lower right: Showing Bell and Howell's "Filmo"

Lower left: Showing the inside mechanism of the De Vry camera.



which is provided. Long range lenses are interchangeable with the Taylor-Hobson Cooke F 2.5, 47 mm. lens with which the camera comes equipped. The camera has a capacity of 120 feet of standard film. Rolls of 100 feet for daylight loading are available.

Eastman Cine-Kodak, Model A

The Eastman Cine-Kodak, Model A, is hand-cranked or motor-driven. It measures 8 by 4 $\frac{5}{8}$ by 8 $\frac{5}{8}$ inches. The weight is 7 $\frac{1}{4}$ pounds. The instrument is daylight loading. A light-weight tripod is provided. Sixteen mm. film is used, and is of the reversible type—reversing negative into positive. Recent additions to Model A equipment include a 1.9 lens, and a telephoto 78 mm., F 4.5 which is interchangeable with the 1.9, giving triple magnification. The model has a top and a

rear finder. The motor drive unit is 6 $\frac{3}{8}$ by 2 $\frac{1}{8}$ by 7 $\frac{7}{8}$ inches in size. Weight is 4 $\frac{7}{8}$ pounds. The motor is a two-volt electric, propelled by a two-volt storage battery.

The tripod, when folded, is 26 inches long, and, when extended to maximum, is 57 inches in length; panning and tilting are both provided for.

Eastman Cine-Kodak, Model B

The Eastman Cine-Kodak, Model B, follows the same underlying principles as the original model, but is even more compact and lighter. It weighs 5 pounds, loaded, and is about the size of a 3A Kodak, closed. Its size is 8 13-16 by 5 9-16 by 3 1-16. The film is 16 mm., reversible. This model is spring-driven. A tripod is not required. The film is

(Continued on Page 23)

Cowling Films Coronation of Sir Hari Singh

Officially Retained to Record Durbar Ceremonies for Ruler's Private Archives.



Maharaja of Kashmir Personally Retains A. S. C. Member for Unique Film Mission.

In one of the most distinguished missions ever accorded a cinematographer, Herford Tynes Cowling, A. S. C., left last month for Kashmir, India, to officially film the coronation of Sir Gen. Hari Singh, K. C. I. E., K. C. V. O., as Maharaja of Kashmir.

Cowling's trip carries all the color of the most romantic fiction. He entered on his 13,300-mile journey on the shortest possible notice, and had scarcely the proverbial moment to spare in making the many rail and ship connections which his record jaunt entails.

Personal Offer

Cowling was at his home in Suffolk, Va., when he was cabled the offer to film the coronation ceremonies. The offer was sent by Sir Gen. Hari Singh personally, and came to the A. S. C. member out of a clear sky. There was an exchange of several cablegrams, and on January 7th, the future ruler of Kashmir accepted the terms quoted by Cowling.

Short Notice

The A. S. C. member discovered, on investigating train time and sailing dates, that, in order to arrive in India in time for the coronation, he would have to sail from New York City at 10 o'clock on the morning of January 9th—which gave him less than two days in which to make the extensive cinematographic preparations for his historic trip.

Close Connections

The veteran cinematographer and globe-trotter pressed the telegraph wires into service and, with his home town in Virginia as the base of operations, was soon taking care of the details in his campaign. He found that by sailing from New York on the 9th on the Leviathan, he would arrive in Paris on the 16th. Thence he would proceed by rail across Europe to Naples; then by steamer to Alexandria; by train to Port Said, and by steamer to Bombay where he would arrive on February 5th. From Bombay to Kashmir, Cowling's destination, stretches a distance of 800 miles which the A. S. C. member would have to traverse by native railways and by automobile over native roads—and the latter are not reputed to be among the best in the world. This

schedule was calculated to land Cowling in Kashmir on February 10th.

"Just a month to make the trip," the A. S. C. member stated before he left, "and it could not be done a minute quicker. If I miss a train, I'm sunk—but I don't intend to miss any."

Whole-hearted Cooperation

Cowling's urgent telegrams and telephone messages, by virtue of which he made possible his speedy departure, met with ready response among the various representatives of the industry. The Eastman Kodak Company rushed his film to the ship where it arrived 30 minutes before the vessel sailed. Bell and Howell sent through special supplies for Cowling's new Eyemo, and these arrived shortly before sailing time. The Akeley Camera organization fitted a special F 1.9 lens to Cowling's Akeley, in a micrometer focusing mount furnished by the manufacturers, within a period of two hours' time—all of which the A. S. C. member regarded as "some rush job". In New York, Carl L. Gregory, dean of the New York Institute of Photography, veteran cinematographer and life friend of Cowling, stopped his work and assisted in arranging passports and other incidentals. Through the cooperation of J. C. Kroesen, of the Edison lamp works, arrangements were made to send to Bombay, from the Paris plant of the organization, a quantity of 1500-watt Madza bulbs to assist lighting the actual coronation scene in the Durbar Hall at Jammu, Kashmir. Cowling will also remove a section of the roof of the building to allow the entrance of sufficient daylight for the occasion.

"Had it not been," Cowling wrote aboard the Leviathan at sea, "for my friends in the Eastman Kodak Company and other branches of the cinema sales business I could not have made my hasty departure. If I did not have the confidence in Eastman, Bell and Howell, and the others that I had, I would not have attempted it. In view of the fact that all photographic goods had to be packed especially for tropical protection and transport, and

(Continued on Page 18)

"Black Light"

By Herbert S. Marshutz,
A. B., D. Opt.

"Invisible" Light Brings
Interesting Speculation
in Scientific World.

THE old saying "there is nothing new under the sun" is sometimes contradicted. To state that white lamp black has been invented might inspire you to laugh or tap your forehead significantly. We can say, however, that "black light" has been discovered and you should not laugh because it is scientifically true.

Black light! Sounds just as ridiculous as white lamp black.

At first thought, one might conclude that black light must be the light in a totally dark room. Thinking about such a problem is a good deal like trying to determine whether there really is sound or not, when a book falls on the floor in a room where no one is within ear-shot.

Mixture of Colors

But black light has nothing to do with light in a dark room. All light—sun light and artificial light—being a mixture of all colors, the more thoroughly and correctly the colors are mixed according to nature's formulae, the whiter the light.

Rainbow Effect

Now if white light is broken up into its component colors by means of such a simple device as a prism, or a very complicated delicate instrument such as a spectroscope, the rainbow effect obtained is the spectrum. The rainbow is of course nothing more than the light of the sun broken up into the various colors that make it white—the familiar red-yellow-green-blue-violet, each color with a different rate of vibration speed.

Light Invisible to Eye

These colors are all that the eye can see. With instruments, however, light that the eye cannot see can be measured and photographed. This light is both at the red end and at the violet extremity of the spectrum. We have known of this invisible light and have called it infra-red and ultra-violet, respectively.

But because it cannot be seen, has no quality of illumination or color, British scientists have appropriately called it "black light."

Vibrations

The characteristics of black light are as well known as our old friends infra-red and ultra-violet. The former has a lower vibration rate than its neighbor, red, and the latter vibrates at a higher rate than violet, but not as high as the X-ray. Still faster than even the X-ray are the gamma rays of radium, vi-

bration at some 150 quintillion times a second. According to calculations in "The Forum" the pendulum of a clock would have to swing for over a billion years to make as many back and forth motions as the gamma ray does in a single second.

Scientific Attention

Invisible light, unknown and then considered of minor importance for decades, is now holding the center of the world's scientific stage. Employment of ultra-violet and infra-red rays for invisible long distance signalling has been reported. The highly exploited but still mysterious "death rays"—intended to destroy an aeroplane in midair, etc., depend upon "black light." Still more recent honors have come to invisible light, with the announcement of unusually successful celestial photographs employing infra-red rays. Perhaps the real story of life on the planets will be revealed when black light is sufficiently understood and controlled to provide detail photography over millions of miles.

Smith and Aller to Handle

Dupont-Pathe Film on Coast

Distribution of a new brand of motion picture film in Hollywood and on the Pacific coast was announced during the past month.

Dupont-Pathe is the new film product; it will be distributed by Smith and Aller, Inc., as Pacific Coast distributors for the Dupont-Pathe Film Manufacturing Company. The principals of the new film distribution firm are J. Wesley Smith and Simeon Aller, both of whom are well known in cinematographic and laboratory circles on the Pacific coast.

Prior to announcing the formation of his firm to handle the film, Smith made a trip to New York City and the East where he conferred with factory officials on the product which is being produced and marketed under the famous Dupont insignia.

Smith and Aller, Inc., are establishing headquarters at 1056 North Cahuenga Avenue, Hollywood.

Boyle Invents "Close-Up Long-Shot" Device

¶ *A. S. C. Member Devises Invention to Combine Two Standard Cameras for Two Shots of Same Subject. Record Is Put on Film in Same Photographing Operation.*

By Maxwell Shane

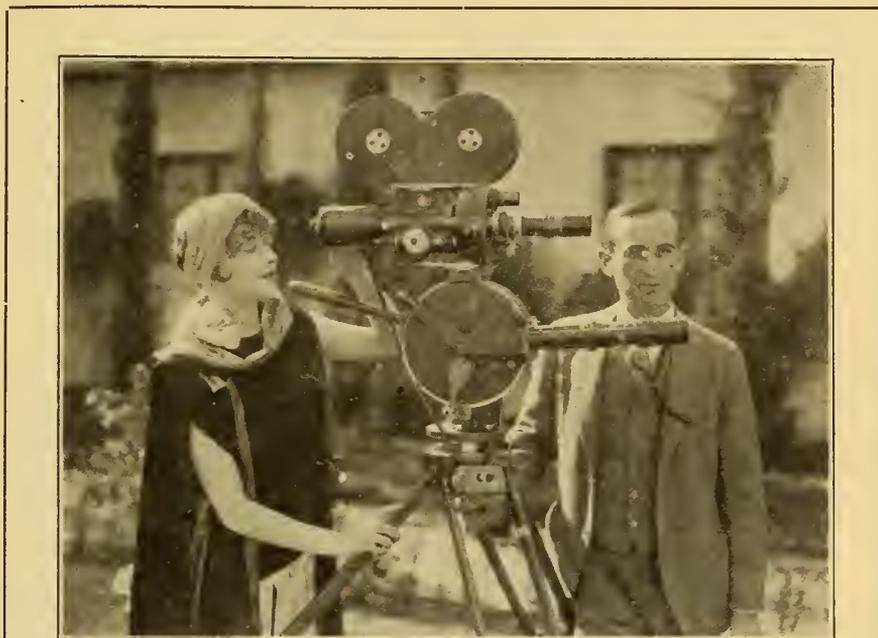
Of the greatest interest to motion picture people, and also to those scientists using the motion picture camera in any way, is the announcement that John W. Boyle, A. S. C., has invented a device by which two negatives can be secured with one "set-up" of the tripod.

Experiments

Cameramen who have seen the device in operation are of the opinion that it will revolutionize that process of cinematography known as "panoramism," and will also eliminate much of the time wasted at present in matching up close-shots with corresponding long shots. Simple as it may seem on description, the device fills a crying need of cinematographers, and is the result of several years of hard work on the part of Mr. Boyle.

Operation

Briefly, the device consists of a metal block, which is clamped to the top of an Akeley camera, and to which a Bell and Howell camera is in turn clamped by its bottom side. Both lenses, that of the Akeley and that of the Bell and Howell, are set to cover the same field. The device operates in this manner: the



John W. Boyle, A. S. C., explaining his dual camera device to Anna Q. Nilsson, who is being featured in First National's "Her Second Chance," on which Boyle is using his invention.

Akeley camera is hand-cranked as usual, but the Bell and Howell is operated by a motor drive. Both cameras, in this way, revolve on the perfectly balanced Akeley tripod.

Duplex

This duplex arrangement makes it possible to secure at the same time not only two perfectly matched negatives, but it will also provide the director with a perfectly matched long shot and close-up at the same time, whenever desired. In order to procure the long shot and close-up simultaneously it is merely necessary to fit one camera with a wide lens for the long shot and the other camera with a long focus lens for the close-up. In this way much time is saved for the director in eliminating the necessity for retaking the same action in a far and near set-up.

Principle

The element of ameliorated panoramic potentiality is explained as follows: ordinarily it is necessary to use two separate camera units each on individual tripods. When a panorama of more than one hundred eighty degrees is taken, the instruments come within photographic range of each other, thus spoiling at least one of the negatives. Mr. Boyle's method eliminates this possibility as one camera is above the other instead of alongside. It also eliminates the necessity for two camera operators, a necessity which is often impossible to comply with.

Advantages

With these objects in view, that of saving time, that of matching negatives perfectly, that of attaining a better panorama, that of obtaining close

(Continued on Page 25)

RELEASES

January 17, 1926, to February 15, 1926

TITLE	PHOTOGRAPHED BY
The Outsider	G. O. Post
Hands Up	H. Kinley Martin
Just Suppose	Stuart Kelson
The Sea Beast	Byron Haskins and H. Lyman Broening, member A. S. C.
The Checkered Flag	Not credited
Too Much Money	George Folsey
Rocking Moon	Chas. G. Clarke, member A. S. C.
The Golden Strain	Glen MacWilliams
Ship of Souls	E. B. DuPar, member A. S. C.
The Gilded Butterfly	Karl Struss
Nell Gwyn	Roy Overbaugh
The American Venus	J. Roy Hunt
Memory Lane	Percy Hilburn
The Yankee Senor	Dan Clark, member A. S. C.
The Danger Girl	Georges Benoit, member A. S. C.
Lure of the Wild	George Meehan, member A. S. C.
The Reckless Lady	Ernest Haller, member A. S. C.
Flaming Waters	William Marshall, member A. S. C.
The Black Bird	Percy Hilburn
The Song and Dance Man	James Howe
The Shadow on the Wall	Ray June
Dance Madness	John Arnold, member A. S. C.
North Star	Not credited
Made for Love	Arthur Miller
The Beautiful Cheat	Jackson J. Rose, member A. S. C.
The Cowboy and the Countess	Reginald Lyons, member A. S. C.
Behind the Front	Charles Boyle
The Million Dollar Handicap	J. D. Jennings, member A. S. C.
The Phantom of the Forest	Ray June
Combat	Charles Stumar, member A. S. C.
The Count of Luxembourg	Steve Smith, Jr., member A. S. C.
Queen of Diamonds	Roy Klaffki
S. O. S. Perils of the Sea	George Meehan, member A. S. C.
Lovers' Island	Alfred Ortlieb
Six Shootin' Romance	William Nobles
The Red Kimono	James Diamond
The Pleasure Buyers	Joseph Walker
When Love Grows Old	William Miller



Al Gilks, A. S. C., has completed the filming of "Blind Goddess," a Paramount picture directed by Victor Fleming, with a cast including Jack Holt, Esther Ralston, Ernest Torrence and Louise Dresser.

* * * *

E. B. Du Par, A. S. C., is enjoying the distinction of what is believed to be the first cinematographer to photograph a South American condor in a dramatic picture. Du Par filmed this new player in "The Night Cry," a Warner Brothers production, which, just completed, stars Rin-Tin-Tin, the cast including, in addition, June Marlowe, John Harron, Gayne Whitman, Don Alvarado and Baby Louise Miller.

The feathered actor had a wing spread of 12 feet, which gives some indication of its size—which served to become a real "menace" when the bird decided to show its savage traits. On one occasion, the king of the South American altitudes took a piece out of its own trainer's cheek. When the condor, therefore, developed a complex for alighting on the top of Du Par's camera, the A. S. C. member cannot be considered as having been totally enthusiastic over the new player's fond proximity. The bird weighed 40 pounds, so that Du Par had to be exceedingly careful that it did not knock the camera over—at the same time making no unbecoming moves that might be misinterpreted by the fractious actor. Once the condor did roost on the cinematographer's matte box with the result that the box was broken.

In the story Rin-Tin-Tin is accused of stealing sheep, but it is later learned that the condor is the culprit. Du Par had plenty of excitement before his camera when the dog star and the villainous bird of prey engaged in a fight in which the condor showed that it had courage galore.

Du Par is now filming a new Warner Brothers production, "The Sap," which, directed by Erle Kenton, features Kenneth Harlan.

Victor Milner, A. S. C., has finished the photographing of "The Cat's Pajamas," a Paramount picture directed by William Wellman.

* * * *

Jackson J. Rose, A. S. C., has had to cease his cinematographic work at Universal City temporarily to go on a sad mission to Chicago where Rose's mother has just passed away. Rose began his career as a cinematographer in Chicago with the old Essanay company.

* * * *

James C. Van Trees, A. S. C., has completed photographing "The Prince of Pilsen," a Metropolitan production.

* * * *

Walter Griffin, A. S. C., is back in Hollywood from Detroit where he has been for some time on an extensive cinematographic assignment.

* * * *

Gilbert Warrenton, A. S. C., has returned from location and has finished the photographing of the latest Emory Johnson production for F. B. O., and has begun work on the filming of a current Universal production.

* * * *

Paul P. Perry, A. S. C., has come back from two location trips to Nevada for special scenes for the Universal miniature department.

* * * *

Ernest Palmer, A. S. C., has completed the filming of "Yellow Fingers," a Fox production directed by Emmett Flynn.

* * * *

Ernest Haller, A. S. C., is still holding forth in New York City, where he is photographing Robert Kane productions for First National. Among the Kane vehicles which Haller has recently photographed are "The New Commandment," "Bluebeard's Seven Wives," "The Reckless Lady" and "The Dancer from Paris." Haller is at present filming "The Wilderness Woman."

The EDITORS' LENS • • focused by FOSTER GOSS

"Culture" and Cinematography

- ¶ Under the head, "Claims Cameramen Are Incompetent," *Film Mercury*, Hollywood, reports that Milton Sills, in a recent speech before the National Board of Review, New York, "was especially severe on the limitations of the cameramen, saying that many of them knew nothing whatever about the physics of light and had not the cultural background which would aid them in extracting from scenes the full measure of artistry."
- ¶ Despite Mr. Sill's more or less widely publicized collegiate background in Chicago, we do not believe that any reason should exist for him to entertain a warped academic perspective. Mr. Sills has endeavored to portray life enough during his esteemed career to lift him from the role of a cloistered pedagogue, so that we might venture that whatever premium might be placed on "cultural" foundations for cinematographers, Mr. Sills must rightly recognize that cinematography as an art or science must rise or fall on the strength of its practical application. We believe that Mr. Sills will stipulate that cinematography certainly has not failed in its practical renditions. After all, what shows on the screen does not have to come, in order to meet the most critical artistic standards, through the medium of a university degree or its equivalent—no more than did the works of the master painters have to come from minds, "cultured" according to Mr. Sills' precepts.
- ¶ "Culture," through university courses or otherwise, is as desirable for cinematographers as it is for presidents, but good cinematography is no more predicated thereon as is masterful statesmanship.

Abe Lincoln might be cited in this connection. What about Thomas A. Edison, father of modern electricity and not a sloven student in the physics of light, and his opinion of "cultured" and college-trained workers? And how much about the physics of light did the wizard Steinmetz learn in college or other fields of "culture."

¶ In the final analysis, the cinematographer, according to the fairest of present standards, is a pictorialist, judged by what he can produce on the screen, regardless of the fact whether or not he enjoys discussing Freud "off set" with male stars. And Mr. Sills cannot deny that the results which the cinematographer has produced on the screen are nothing short of remarkable—especially in view of the fact that he has created his calling, with zero as the starting point, within the period of the last twenty-five years. Nor do we believe that the cinematographers' accomplishments, gauged from the ultimate screen test, could have been made any more meritorious had they all immersed themselves, in universities or elsewhere, in Mr. Sills' desired "culture."

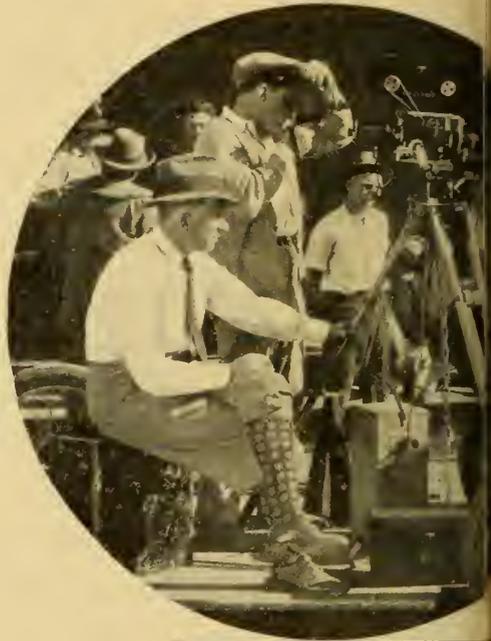
¶ The hotbeds of "culture" can do no more and no less toward turning out the best there can be in cinematography than have the university courses in dramatics and writing of plays done in producing master dramatists—and the latter applies from the time of Shakespeare to the day of George M. Cohan. For the good of the respective callings, cinematography cannot thrive on pedantry—no more than can playwriting or even acting!

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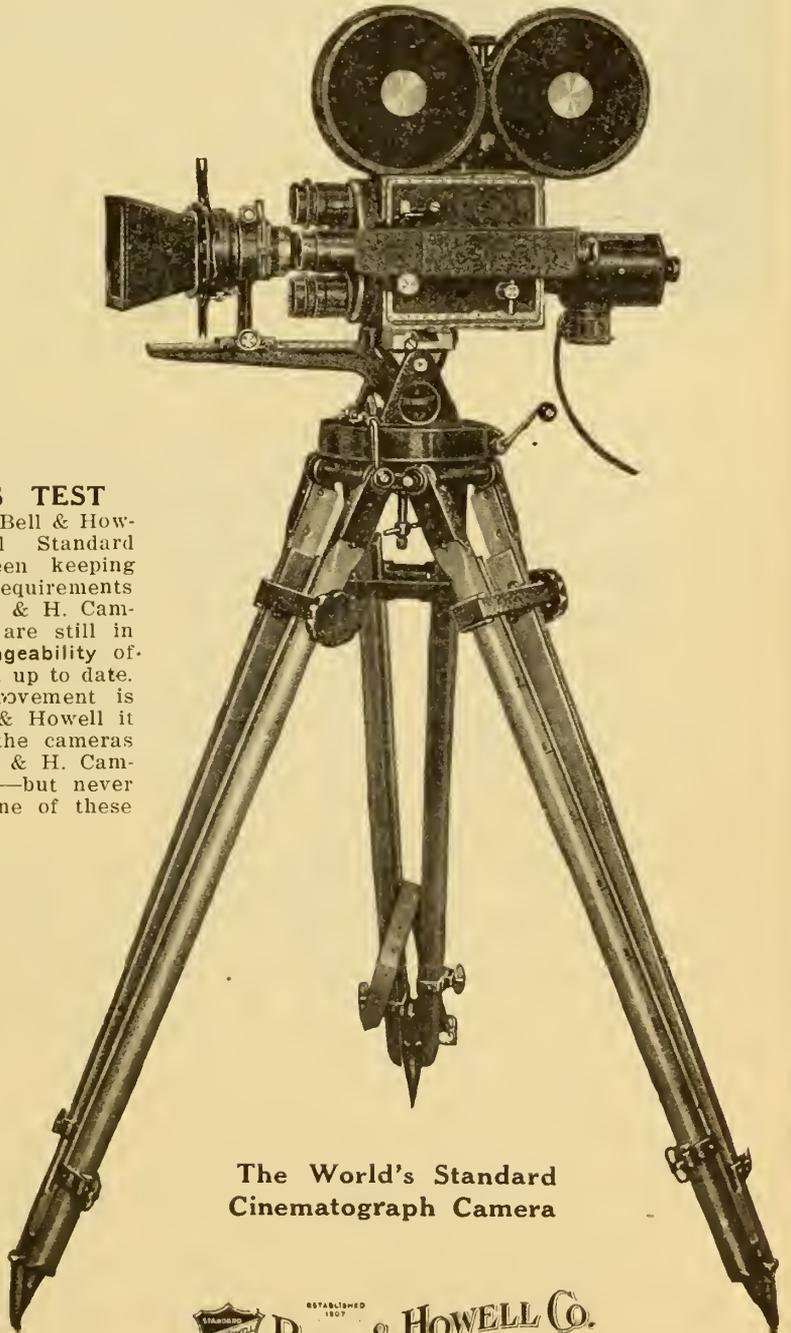
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A. S. C. Members in Film Connections



Charles J. Van Enger, A. S. C.



Henry Sharp Signs with Metro-Goldwyn-Mayer; Charles J. Van Enger Leaves Warner Brothers on First National Contract; Harry Perry Back Again with Paramount for Zane Grey Vehicles Supervised by Lucien Hubbard.



Henry Sharp, A. S. C.

Formation of new cinematographic connections by three prominent members of the American Society of Cinematographers was among the outstanding happenings in the field of motion photography in Hollywood during the past month.

With First National

Charles J. Van Enger, A. S. C., who has been chief cinematographer for Ernst Lubitsch since that director began his notable American career with Warner Brothers, signed a contract with First National on the expiration of the period of his agreement with Warners'. Van Enger has already left for New York City, where he will film his initial First National picture which is to be announced later.

Lubitsch Vehicle

Productions photographed by Van Enger have been among the most successful in film history. For Lubitsch he has done "Lady Windermere's Fan," "Kiss Me Again," "Three Women," and "The Marriage Circle," all under the Warner banner. In addition, he photographed Lubitsch's "Forbidden Paradise," starring Pola Negri, for Paramount. Van Enger was farmed out by the Warners to Universal to film "The Phantom of the Opera." The A. S. C. member's earlier

successes included Nazimova's "Salome" and her production of Ibsen's "The Doll House."

Sharp With M-G-M

With Douglas Fairbanks having completed, in "The Black Pirate," his final production before he begins his scheduled trip around the world with Miss Pickford, Henry Sharp, A. S. C., has moved his cinematographic activities to the Metro-Goldwyn-Mayer studios with which organization he signed a contract last month.

Fairbanks Film

Sharp was chief cinematographer on Fairbanks' "Don Q," as well as "The Black Pirate" which as yet has not been released. Critics throughout the country bestowed unstinted praises on the cinematography in "Don Q." It is stated that "The Black Pirate" is no less a cinematographic success.

Long With Ince

Before joining Fairbanks, Sharp had been connected with the Thomas H. Ince studios for several years. In fact, Sharp originally went to the post of first cinematographer while with Ince and subsequently filmed many of that producer's most important productions including "Beau Revel," "Mother o' Mine," "Hail the Woman," "Lorna Doone" and "Enticement."

(Continued on Page 20)

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Motion Picture Film Department

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(Continued from Page 7)

that I had to conduct my arrangements from Suffolk by telegraph, I consider it a pretty quick get-away."

Singular Mission

Cowling's commission is particularly unique in that he is photographing the entire ceremonies for the Raja with no connections with any producing companies in the United States or elsewhere. The cinematographic record is to be exclusively for governmental archives.

Knows Sir Hari Singh

In 1923, during the course of his most recent photographic journey around the world, Cowling spent several months with the Raja of Kashmir as his guest. As indicated by the title, the Raja was at that time crown prince. He became greatly impressed with Cowling's work and adventures, and it was through the good graces of the future ruler of Kashmir that the A. S. C. member was enabled to take what is believed to be the first motion picture camera to enter unknown Tibet. Cowling became very friendly with Sir Hari Singh, whom he found to be developing into an enthusiastic motion picture fan.

The A. S. C. member subsequently purchased, in the United States, two projectors for the Raja which he installed in his summer and his winter palaces respectively. He subscribes to a film service in Bombay for pictures to show on his private screens. Upon his ascension to the throne, he will allow his subjects, it is said, to have motion picture theaters. This the old Maharaja, who was an orthodox Hindu of the Dogra caste, would not permit. Sir Hari Singh is a reform Hindu sect adherent and therein, it is stated, lay considerable intrigue to prevent his coming to the throne, such as the "mysterious Mr. 'A'" stories which emanated from London several months ago. Some observers state that the situation was manufactured by the opposition to prevent the British government from recognizing Sir Hari as Maharaja on the death of the late ruler.

Great Caution

In the latter connection lies a particular reason for the new Maharaja's insisting that Cowling, whom he knows and trusts, come to officially photograph the coronation. A ruler, in the atmosphere in which the ceremonies will take place, never knows what plots of assassination are being directed against him. Hence he has a direct interest in knowing "who" is pointing "what" at him.

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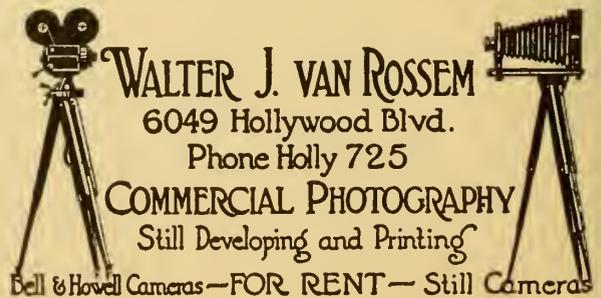
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The new ruler, who is 35 years old and an Oxford graduate, is spending upward of two million dollars on the coronation—which is not counted as so much in his land of three million subjects since it comes but once in a lifetime.

Cowling will use three motion picture cameras and will shoot approximately 20,000 feet of negative. He will return to New York about April 15th.

**Eastern Editor Scoffs at
"Prologues" on Film Bills**

Striking a chord similar to that which was sounded in the December issue of this publication, Arthur James, editor of MOTION PICTURES TODAY, in his issue of February 6th, speaks pointedly on a subject that is gaining ever-increasing intention. Mr. James' editorial is re-printed herewith:

Presentation, prologue, preliminary and all the rest of the names given to that which precedes the showing of the feature motion picture on the screen, has about reached the height of its foolishness. By example and by promotion the idea of a big show spread from Broadway to Chicago, from Chicago to the West Coast and then all over our motion picture theater map.

In its beginning it was a good idea and it was successful. It served to dress up and garnish the meal of entertainment in the large capacity houses and enhanced the importance of these institutions.

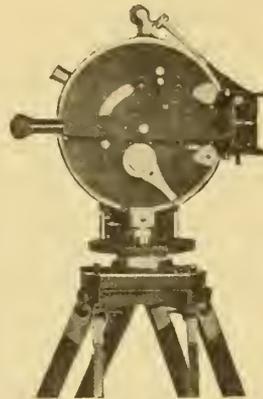
It still is an important factor in—and only in—the largest houses. Now as before, it is, after all, only a garnishment, the parsley on the well served steak. When the steak itself proves tough the customers are not fooled by the parsley, and they won't come around unless there is nourishment. The nourishment, the juicy and sustaining meat of all picture house entertainment, is the picture.

Broadway houses for example have been garnished up with bundles of parsley in the way of vaudeville, soloists, and monkey-doodle performers who ruin the bill. Recent shows at the Rialto, a Katz house, have been described by New York newspapers as "hick" with nothing to praise but the polite manners of the ushers.

The net result of these strivings toward class and fancy show business has been a discouragement of public patronage. Paying the price of these bills makes a smaller amount available for picture rentals and good pic-

(Continued on Page 22)

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(Continued from Page 16)

Perry Goes to Paramount

Harry Perry, A. S. C., has been retained at the Famous Players-Lasky studios in Hollywood as chief cinematographer for Lucien Hubbard, supervisor on the Paramount productions of the Zane Grey stories. Perry's work in "The Vanishing American" gained wide recognition for bringing the beauties of western scenic country to the screen. Perry worked with Hubbard on the prologue in this production which was photographed with Charles E. Schoenbaum as regular staff cinematographer. Perry later served with Hubbard on Zane Grey's "Desert Gold," soon to be released. The A. S. C. member was scheduled to photograph Sol Lesser's production of "The Winning of Barbara Worth," the famous novel by Harold Bell Wright, but the sale of film rights to the vehicle to Samuel Goldwyn brought an end to the Lesser production plans.

Started With Famous Players-Lasky

The present affiliation is not Perry's first with Famous Players-Lasky. It was with that organization that he first rose to prominence as a cinematographer. Paramount pictures filmed by Perry include "The Easy Road," "The City of Silent Men," "White and Unmarried," "The Conquest of Caanan," "A Prince There Was," and "If You Believe It, It's So," all starring Thomas Meighan. When Tom Forman, who had been Meighan's director, left Paramount to direct for B. P. Schulberg, Perry went with Forman as chief cinematographer, filming a number of important productions including "The Broken Wing" and "The Virginian."



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A. S. C. Members Principals in Big "Wampas" Ball Act

Members of the American Society of Cinematographers were the principals in one of the feature acts of the "Wampas" annual frolic and ball, held by the Western Motion Picture Advertisers on February 4th, at the Shrine auditorium, Los Angeles.

The novelty and originality of the A. S. C. act brought down thunderous applause from the brilliant assemblage of more than 5000 people who attended the affair.

Attired formally and with cameras set up in regular studio fashion, a score of A. S. C. members were arrayed over the breadth of the mammoth Shrine stage. The various members were introduced individually to the audience by Charles Murray, prominent comedian, who announced production successes photographed by the cinematographers. As each member was introduced a spotlight was centered on him. When the last member was introduced, Murray shouted "camera," and the audience was given the thrill of being "turned on" by the first and the most notable body of cinematographers ever to be assembled on a theatre stage.

The idea for the act was that of Sid Grauman, famous showman, who was director general of the Wampas presentations.

A. S. C. members who constituted the act were Norbert Brodin, Frank B. Good, Bert Glennon, Hans Koenekamp, John Arnold, Robert Kurrle, Reginald Lyons, George Schneiderman, William Fildew, Alfred Gilks, Homer Scott, Arthur Edeson, Ira Morgan, Fred W. Jackman, Dan Clark, Charles G. Clarke, Floyd Jackman, L. Guy Wilky, Kenneth G. MacLean, John W. Boyle, Park Ries and Ernest Palmer.

At the opening meeting of the American Society of Cinematographers, held February 8th, in the A. S. C. assembly rooms, Guaranty Building, Hollywood, examples of the "Binoscope" method of stereoscopic photography were exhibited. William Worthington, well-known director and actor, and Harry Fairall were in charge of the exhibition.

Musical offerings were rendered by Henry Goodman's orchestra, the personnel of which numbered Master Bobby Goodman, Miss Lea Goodman, Bill Borzage and Messrs. Karpaty and Molavsky.

The orchestra appeared from the Fox studios through the special arrangement and courtesy of Dan Clark, A. S. C.

Here to keep you happy "Under the Coops"

IN the old days you frequently heard of some temperamental star refusing to work under anything but Cooper Hewitt light. Now they don't get a chance to refuse. Roam as you will, it's hard to find a studio that isn't busy and happy "under the Coops."

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(Continued from Page 19)

tures cost money. The presentation money is in most instances thrown away. The surrounding bill does not bolster a poor picture and does not supplant a good picture.

The picture now, as always, is first and last the attraction. Short lengths, novel in character and with picturesque or comedy values, help tremendously but they, also, are pictures.

With good pictures on the market the bigger houses no matter how they are signed up would do better to shelve the poor product they have contracted to use, pay the price and spend their presentation money for the good product available but now outside in the cold because of our strange and seemingly unavoidable block booking system. Good pictures and only good pictures will win patronage.

The Capitol Theatre with an excellent accompanying show at all times rises or falls in its receipts according to its picture attraction. With a lemon there is a falling off of sometimes as much as \$20,000 in a week and with a real picture the new box office records are hung up.

From where we sit with no end to serve, save that exhibitors and producers should all make money and plenty of it on good pictures, we are moved to describe the presentation enthusiasm as mistaken and coming under the popular though possibly low term HOOEY.

We appreciate the art of Sid Grauman and the genius of Roxy, but their fields are their own and not for general imitation. The good picture brings its own crowds. The poor picture keeps them away and that is likely to be the situation for long years to come.

Harry D. Brown in \$50,000 Cinema Expansion Program

Harry D. Brown consummated arrangements last month whereby the Cinema Studios Supply Corporation, Hollywood, will undergo an expansion to the extent of \$50,000.

This addition of this capital to the resources of the corporation will enable that concern to make new additions to the shop and increase lighting equipment service rendered the motion picture studios. This expansion, according to Brown, was necessitated by the growing needs of the motion picture industry. He predicts an unprecedented year of cinematic activity for the Hollywood district.



NO CAMERA can be better than its lens. There is a life-time of satisfaction and pride for the owner of a *Carl Zeiss Tessar*—the lens which is doing the world's finest photography. Among prominent users of *Zeiss Tessars* are the U. S. Army Air Service, The National Geographical Society, The American Museum of Natural History, Famous Players and a legion of others. The *Tessar f4.5* is standard equipment on the finest imported cameras. For greater rapidity there is the *Tessar f3.5* and the *Tessar f2.7* has recently been introduced. For rapid distance-photography the *Tele-Tessar* and for photo-engraving the *Aprochromatic Tessars* enjoy an enviable popularity.

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(Continued from Page 6)

daylight loading. The lens is F 6.5, wide angle, with 20 mm. focus that is fixed.

Eastman Kodascope

The Eastman Kodascope, the projector which shows the 16 mm. reversible film, weighs 20 pounds, and measures 18½ by 14¾ by 10¾ inches in size. Its capacity is 400 feet of 16 mm. film—which gives projection for approximately 16 minutes on the screen. The lens is a 50 mm. focus, throwing a picture 30 by 40 inches at 18 feet with a 56-watt lamp, or a 39 by 52-inch picture at 23 feet with a 200-watt lamp. Source of power and illumination for the Kodascope's electric motor may be taken from any house circuit, alternating or direct current, not over 125 volts nor less than 105, by "plugging in" on an ordinary bulb socket or wall plug. There is an adjustable rheostat, with ammeter, to furnish correct voltage for a special 14-volt, 56-watt Mazda lamp or for a 50-volt, 200-watt Mazda lamp. There are provided special rheostats for adaptation to 210-250-volt circuits, or to 32-volt home generators.

Pathex Camera

The Pathex camera is approximately 3 by 6 inches in size and weighs 1¼ pounds. It has a fixed focus F 3.5 lens, with an adjustable iris diaphragm; the focal length is 20 mm. The film is supplied in daylight loading magazines which have a capacity of 26 to 30 feet. The Pathex film runs 40 frames to the foot. Development is by the reversible process, sent to company laboratories, as with the Eastman 16 mm. film. A tripod comes with the Pathex.

Pathex Projector

The Pathex projector weighs 5 pounds; 5 ounces, and measures 4½ by 7 by 12½ inches. Power is drawn from the ordinary electric socket. A special Mazda lamp, 12 volts, .5 amperes, furnishes the illumination.

(Continued on Page 26)

Boyle Invents "Close-up Long-Shot" Device

(Continued from Page 9)

shots and long shots at the same time, and because of its efficiency and inexpensiveness, Mr. Boyle believes that the device will soon be in common use in all studios. Many camera authorities

agree with the inventor, who has taken papers of patent out on his mechanical brain-child.

Mr. Boyle is at present using this device in photographing fast racing scenes for "Her Second Chance," a First National film, being directed by Lambert Hillyer.

Gets Shots that You Couldn't Get at all Without it

The ULTRASTIGMAT-f1.9



"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."

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Hollywood, Calif.

The entire circumference of the track will be taken in one shot by this camera.

The device was also successfully used, through the courtesy of Mr. Boyle, by J. D. Jennings, A. S. C., in the filming of "The Million Dollar Handicap," a Metropolitan production.

PROJECTION • Conducted by Earl J. Denison

PLATE A
FULL VIEW OF
SPLICING MACHINE

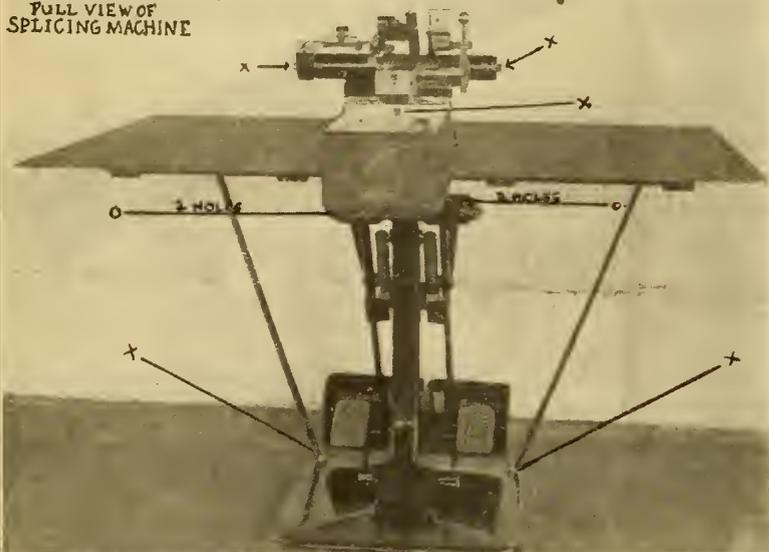


PLATE B
Machine Open

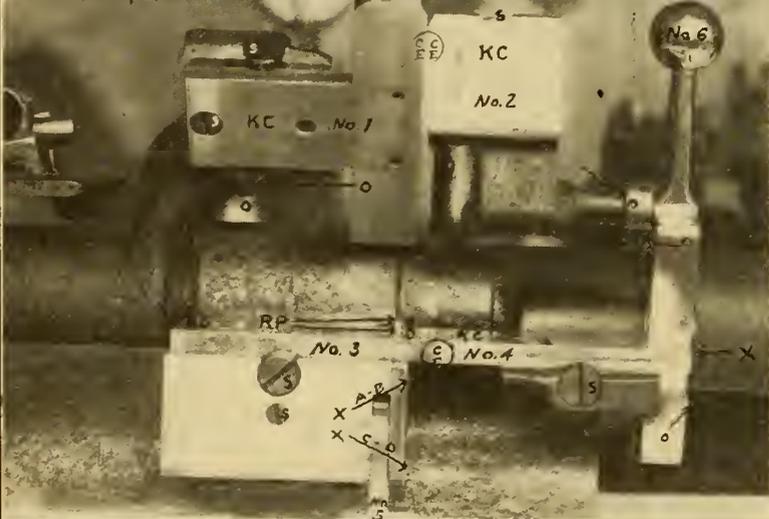
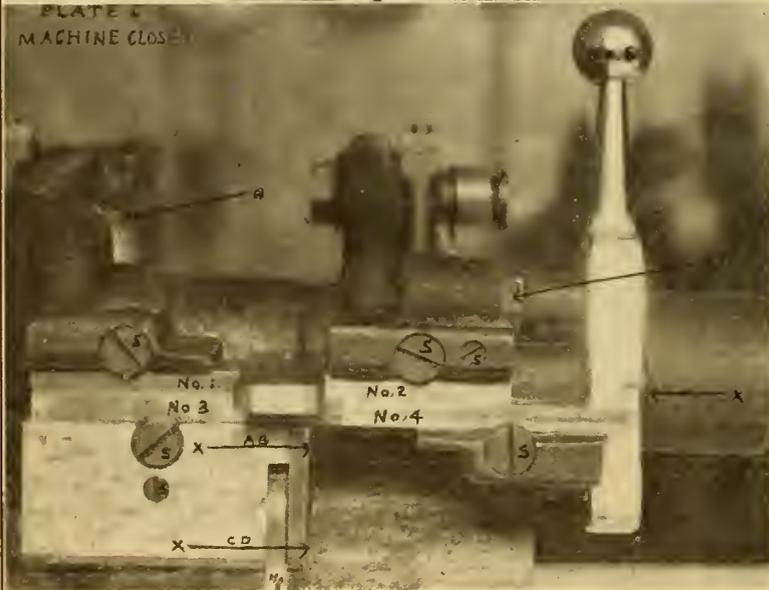


PLATE C
MACHINE CLOSED



(The Bell and Howell splicing machines, the proper care and use of which are illustrated herewith, were especially designed for use in all Famous Players-Lasky exchanges where they have been installed under the supervision of Earl J. Denison.—Editor's Note.)

The Bell and Howell splicing machine makes a perfect splice .156 wide—of the full hole type. The machine is automatic in operation and electrically heated to about 120 degrees which keeps metal plates, film and film cement at the same temperature, thereby insuring a permanent splice.

The registration of the perforations is perfect and splices will not buckle. Experienced people can make a splice on these machines in about 10 seconds. The use of these machines has practically eliminated film damage due to splices.

The following instructions, as given in the Paramount exchanges, regarding the care and operation of these machines must be closely followed at all times:

First, the machines will not function properly unless they are kept scrupulously clean at all times. (Cleanliness is the most important factor in handling film under any conditions.)

Second, the machines are mechanically perfect and require no adjustment whatsoever. Therefore, under no consideration, attempt to make any adjustments on the machines. (In case of accident or breakage, the home office must be notified.)

Third, use a fresh blade every morning. At mid-day, reverse the blade and use the other end. Under ordinary conditions this will insure having a sharp blade at all times. However, in case a blade is nicked or for any other reason it does not scrape properly, immediately get a new blade. Machines are to be thoroughly cleaned and covered every evening and before closing.

Fourth, turn the electric heating unit on the first thing in the morning and do not turn off until the day's work is finished.

Fifth, the scraping blade holders are not interchangeable and under no condition change holders.

Lower Right: Plate D, Service Table and Setting Gauge. Upper Right: Plate E, Blade Holder

in Proper Position for Setting. Center Right: Plate F, Rear View

of Toggle Arms, Toggle Spring, Oil Holes. Lower Left: Plate G, Blade Holder with Blade Set.

Sixth, it is highly important that each day's work be started with fresh cement. Never mix fresh cement with old cement but drain the bottles the previous evening and refill in the morning.

Seventh, girls will alternate each week in operating the machines and are not to switch machines any time during the week, or switch positions at any individual machine as the two girls sitting at any one machine will be held responsible for the condition of that machine.

Eighth, keep feet on the pedals all the time you are sitting at the machine, and whenever it is necessary to leave the machine always close down the cutting blades.

Ninth, oil all places marked "o" once each week.

By following the above simple instructions no trouble whatsoever should occur.

KEY TO LETTERS AND NUMBERS ON PHOTOGRAPHS

(Letters and numbers on all photographs have the same meaning.)

Numbers

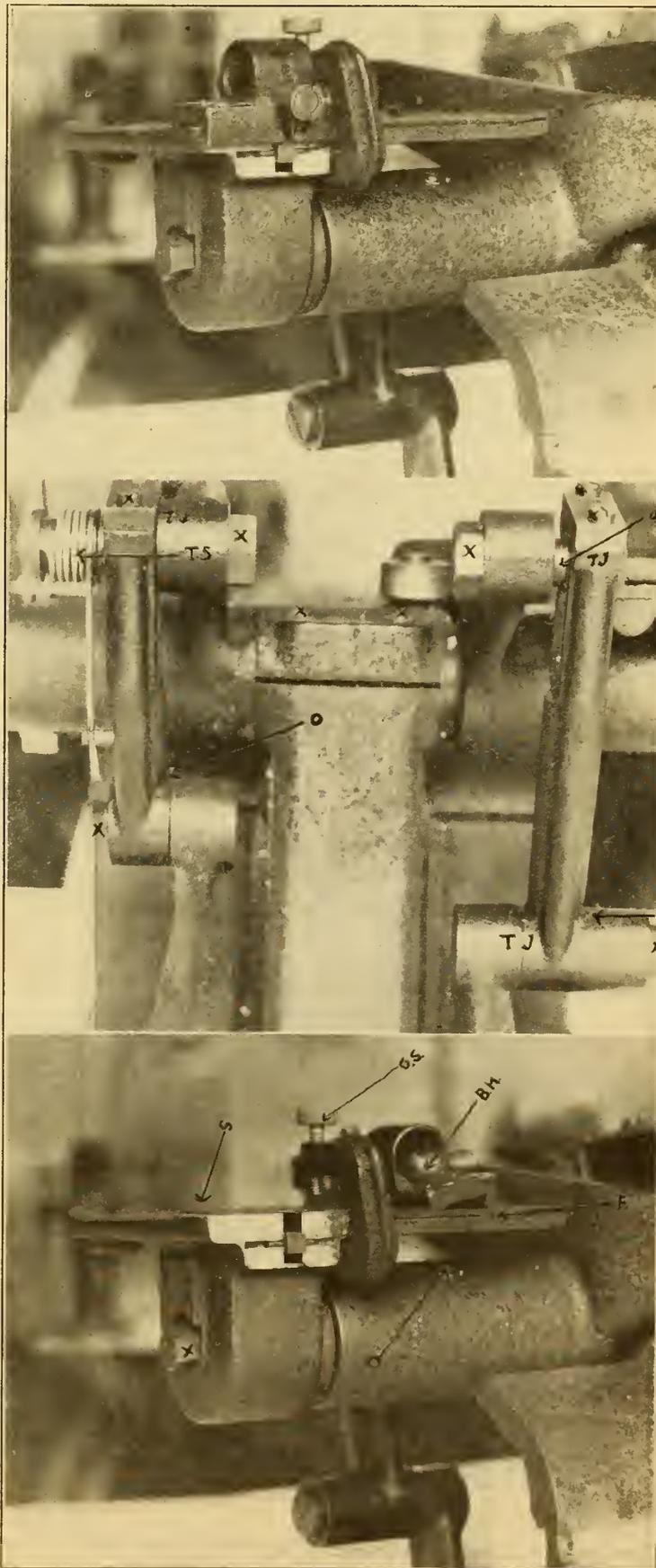
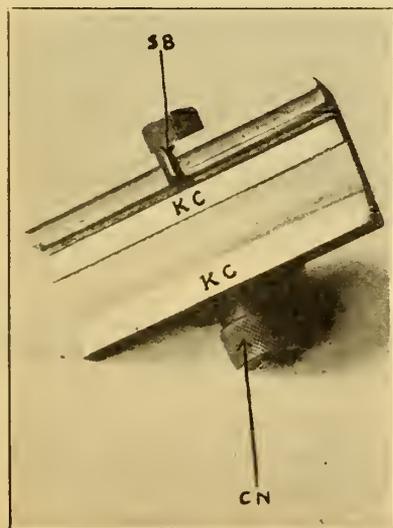
- No. 1.—Upper left cutting blade.
- No. 2.—Upper right cutting blade.
- No. 3.—Lower left cutting blade.
- No. 4.—Lower right cutting blade.
- No. 5.—Puller for registering pins.
- No. 6.—Film clamp lever.

Letters

X—Keep all screws and bolts marked x tightened.

S—All screws marked s must not be touched.

(Continued on Page 26)



(Continued from Page 23)

De Vry Camera

The De Vry camera, being manufactured by the De Vry Corporation of Chicago, is automatic, operated by a spring motor. This camera carries 100 feet of standard motion picture film. It weighs 8½ pounds, and may be spanned by a man's hand. While no tripod is needed, a universal screw socket is provided in the event that a tripod is desired. There is a hand crank for special work. The lens is standard F 3.5. The De Vry camera is a fellow creation of the De Vry portable projector which has been on the market for several years.

(Continued from Page 25)

- O—All places marked o to be oiled weekly. (Use 3 in 1 oil only.)
- R P means registering pin. (Oil weekly.)
- C E in circles means cutting edges. (Keep clean.)
- K C means keep clean.
- H N means hexagon nut (for adjusting film clamp lever.)
- C S—Clamp screw for blade holder.
- B H—Blade holder.
- F—Felt for setting blade holder on.
- T J—Toggle joint.
- T S—Toggle spring.
- S B—Scraping blade.
- C N—Clamp nut (for tightening blade. in holder.)

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		In.	MM.		
1	¾x1	1⅜	35	\$32.00	\$36.00
2	¾x1	2	50	35.00	39.00
3	¾x1	3	75	43.00	47.00

ILEX PARAGON CINEMAT F:3.5

CAT. NO.	Covers at Full Aperture	EQUIV. FOCUS		Price in Barrel	Price in Focusing Mt.
		In.	MM.		
1	¾x1	2	50	\$22.00	\$26.00
2	1¼x1¼	3	75	30.00	34.00

ILEX PARAGON ANASTIGMAT F:4.5

CAT. NO.	Covers at Full Aperture	EQUIV. FOCUS		Price in Barrel	Price in Focusing Mt.
		In.	MM.		
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 Brodin, Norbert F.—Frank Lloyd Productions, First National, United Studios.
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 Glennon, Bert—with Famous Players-Lasky.
 Good, Frank B.—with Fox 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.
 Jennings, J. D.—with Metropolitan Studios.
 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, Metropolitan Studios.
 Lyons, Reginald—with Buck Jones, Fox Studio.
 Marshall, Wm.—
 McCoId, T. D.—with First National, United Studios.
 McGill, Barney—
 MacLean, Kenneth G.—with Warner Bros.
 Meehan, George—
 Milner, Victor—with Famous Players-Lasky.
 Morgan, Ira H.—with Marion Davies, Cosmopolitan, Metro-Goldwyn-Mayer Studios.
 Norton, Stephen S.—F. B. O. Studios.
 Palmer, Ernest S.—with Fox Studio.
 Perry, Harry—with Famous Players-Lasky
 Perry, Paul P.—with Universal.
 Polito, Sol—with Harry Carey, Hunt Stromberg Productions.
 Ries, Park J.—
 Roos, Len H.—with Alexander Film Co., Englewood, Denver, Colo.
 Rose, Jackson J.—with Universal.
 Rosher, Charles—with "Ufa," Berlin.
 Schneiderman, George—with Fox Studio.
 Scott, Homer A.—
 Seitz, John F.—with Rex Ingram, Europe.
 Sharp, Henry—with Metro-Goldwyn-Mayer Studios
 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 First National, New York City.
 Van Trees, James C.—with Metropolitan Studios.
 Warrenton, Gilbert—with Universal.
 Wenstrom, Harold—
 Whitman, Philip H.—with Mack Sennett Studios, Scenario Dept.
 Wilky, L. Guy—

Edison, Thomas A.—Honorary Member.
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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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Dear Mr. Boeger:-

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For quality of photography, as a time saver in securing quick setups -- and in its adaptability to any kind of work I do not think a Mitchell can be beaten.

My three best pictures - "The Narrow Street", "Little Annie Rooney", and "Scraps", have been shot with Mitchells, but don't blame that on the camera.

Charles Fosher, who shot the two latter pictures with Miss Pickford as the star, is taking a Mitchell to Europe to use at the UFA Studio -- that's what he thinks of them -- and he ought to know.

Yours sincerely,

Bill Beaudine

P.S. Don't cut out the alligator - he got a \$7.50 check for this picture.

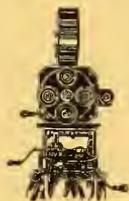
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25 Cents A Copy

April, 1926

American Cinematographer

Published by the American Society of Cinematographers, Inc.



This Month:



Culture and the Cinematographer

**By T. D'ARCY CORRIGAN, M. A., LL. D. (Dublin),
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Do Motion Pictures Injure the Eyes?

By HERBERT S. MARSHUTZ, A. B., D. O.]

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American Cinematographer

FOSTER GOSS, *Editor and Business Manager*

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A. S. C. ROSTER.	

An educational and instructive publication, espousing progress and art in motion picture photography.

Published monthly by THE AMERICAN SOCIETY OF CINEMATOGRAPHERS, Inc.

Subscription terms: United States, \$3.00 a year; Canada, \$3.50 a year; foreign, \$4.00 a year; single copies, 25 cents

Advertising rates on application.

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Telephone GRANite 4274

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Amateur Cinematography

¶ (Questions on amateur cinematography will be gladly answered in this department. Inquirers should sign all queries

with correct name and address. Only legitimate questions will be considered. None which

tend to jeopardize general motion picture production by divulging trade secrets will receive attention.)

(The following story was written by the Editor of the AMERICAN CINEMATOGRAPHER especially for the studio section of the EXHIBITORS HERALD, and gives another interesting angle on the use of the amateur cinema camera.)

With numerous well-made amateur motion picture cameras and projectors being marketed throughout the country, it is predicted by those who have closely observed the trend of cinematography that the average motion picture, as displayed by the exhibitor, will be looked to as a matter of student's interest by the general run of theater patrons.

Wide Distribution

It is believed that the amateur's indulgence in cinematography bids fair to become as widespread as "kodaking," and, with this possibility in the offing, cinematography, as practiced by professional experts, will be naturally sought out for "pointers" by the novices. At the present time, the distribution of the amateur motion picture outfits has reached even the department stores and the neighborhood music shops so that the layman's participation in motion photography is distinctly removed from the plane of speculation. The angle that should interest foresighted exhibitors is to make sure that the prints, as shown by them, approach as near as possible a presentation that is perfect.

Interested in Cinematography

The public will be more interested in cinematography than ever before. This situation has been coming about for many seasons past, as is indicated by correspondence that has reached the American Society of Cinematographers from every part of the earth. Perhaps a good photographic presentation has meant more to the patron than many exhibitors have realized. Certainly cinematography will be a factor more definite than ever before. Pictures photographed by recognized cinematographers carry, with few exceptions, pictorial merit in the negative, and it should behoove the exhibitor to insist that this merit, through good prints and otherwise, is brought out to the maximum when the film is exhibited on his screen. Good photography, properly projected, is destined to be demanded by even the most lax theater audience.

Cowling Carries

Eyemo to India

Herford Tynes Cowling, A. S. C., included an Eyemo in his equipment when he departed for his rapid-fire journey to Kashmir, India, to film the coronation of Sir Hari Singh.

Cowling stated that the cooperation accorded him by the Bell and Howell company, manufacturers of the

Eyemo, was an important factor in the success of his hurried departure, made necessary by the short notice which launched him on his dash around the world.

Must Prove Self

The fact that the A. S. C. member made this type of camera a part of his photographic paraphernalia is regarded as significant, inasmuch as the exigencies, which are entailed in Cowling's work in going to the most remote parts of the globe, call for cinematographic equipment that must have proved its reliability before ever he can court the risk of taking it with him to rely on under most adverse conditions, such as he unfailingly encounters.

Eyemo Used on Melford Feature

When "Whispering Smith," a Metropolitan production directed by George Melford, reaches the screen, it is scheduled to contain scenes photographed by a standard, portable motion picture camera of the "amateur" variety.

Studio Use

Charles G. Clarke, A. S. C., chief cinematographer for Melford on the Metropolitan picture, employed the Eyemo in conjunction with his regular Bell and Howell apparatus. The A. S. C. member filmed John Bowers and other players in the cast with his new camera, and reports that his results were most commendable.

A. S. C. Member Answers Amateurs

By
Victor Milner, A. S. C.

Representative Queries
Reviewed by Noted Professional Cinematographer

A NUMBER of inquiries have been referred to the writer concerning Bell and Howell's "Filmo" outfit which uses the 16mm. type of reversible film. These queries seem to be of a general nature, as is indicated in the fact that they have been less formally put to the writer, when, on several occasions, he has been consulted by those who know that he is a cinematographer by profession for bits of detailed information concerning new "amateur" motion picture outfits.

Before going into the nature of these questions, it might be well to observe that the writer has encountered a number of amateur equipment owners who seem to stand in awe of their instruments. For some reason or other, they do not seem to realize that it is possible for the amateur actually to take motion pictures on such a simplified scale. They are prone to make an easy task a hard one. There is no use for excessive "fussing" or awkwardness over these cameras and projectors of reliable manufacture, for they are simplicity itself. However, there are some problems which necessarily must arise, but, by going to the right source, they should be solved with comparatively little difficulty.

There are appended herewith, therefore, a number of representative questions, and the answers thereto:

"How can I get a close-up with my Filmo?"

This seems to be a favorite form of query. The amateur naturally wants to emulate the interesting features in professional cinematography. The close-up is one of these, and, fortunately enough, it is quite within the range of these new cinematographic creations.

Standard equipment on the Filmo carries a one-inch lens



Victor Milner, A. S. C.

mounted in a universal mount. This will give a sharp image from a distance of six feet on.

For those who are better acquainted with lenses, the camera may be equipped with a focusing mount. This makes focusing possible at a distance of two and one-half feet.

"Is the camera really daylight loading?"

The illusion seems to be present among some that, in order to load their small cameras, it is really necessary, as an added precautionary measure, to retire to the darkest of darkrooms and there to laboriously load the instrument. This is all quite unnecessary.

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Mix Being 'Shot' By Small Camera

Tom Mix's hazardous encounters in motion pictures will appear more graphically than ever to audiences, as the result of a new cinematographic auxiliary methods instituted by Dan Clark, A. S. C., chief cinematographer on the Mix features for Fox.

Difficult Places

Clark is using an Eyemo to get to difficult places, from which heretofore it was impossible to photograph the Fox star with regulation equipment.

Gets Close to Danger

Clark states that he is now able to shoot his star in the closest and most dangerous quarters. Where formerly action seen over the edge of a cliff, and the like, was impossible or taken only with the greatest difficulty, it is now within the realm of accomplishment for the A. S. C. member.

Since much of the action in Mix features are taken in precarious straits, Clark regards the new type of camera as a boon to his calling.

PROJECTION • Conducted by Earl J. Denison

Dialogue on Projection

Between Joseph Steele
and
Richard Barthelmess

Famous Star Emphasizes
Value of Perfect Projec-
tion to Finished Picture

(Richard Barthelmess long has been known to his associates as an ardent admirer of good projection. Cognizant of this fact, the AMERICAN CINEMATOGRAPHER, as soon as Barthelmess arrived in Hollywood to make "Ransom's Folly" which Sidney Olcott is directing, requested Joseph Steele, publicity director for Barthelmess, to record his star's views on the matter of projection. Herewith, then, Steele presents, in a most entertaining way, highlights of Barthelmess' convictions about projection.—Editor's Note.)

Mr. Steele:

The American Cinematographer has asked me to get a story from you on projection; do you happen to know anything about it?

Mr. Barthelmess:

I happen to know that projection is to the completed picture what cutting is to the picture during production.

Mr. Steele:

Please elucidate, Mr. Barthelmess.

Mr. Barthelmess:

Very well. The cutter, as you know, is the gentleman of the shears who can insert a piece of film showing the Roman galleons into the middle of an American western, and thereby transform it into a travelogue. Similarly, the projectionist, if he is not competent, may ruin what might have been a perfect entertainment.

Mr. Steele:

Quite right. Do you mind expatiating still further.



Richard Barthelmess

Mr. Barthelmess:

Of course, and gladly. Many component parts of this thing we call "projection" may go wrong; there is the screen itself, the illumination, and others with which I am not technically familiar.

Mr. Steele:

Please be good enough to cite a specific instance of the terrible destruction that the demon projection is capable of.

Mr. Barthelmess:

Let me see—yes, I have it! I have one that should serve amply for the purpose of illustration. Last September when we were shooting a location in fashionable Southampton down on Long Island, we arranged with the local Cinema Emporium to run

our "rushes." The antique institution was set in order and a whole week's work was projected before what was probably the most terror-stricken audience in the history of this infant industry. I turned to Mr. J. Boyce Smith, our general manager. He was pale and it is highly probable that my own complexion matched his. "Great Gamaliel!" he exclaimed. "We will have to shoot that stuff all over again!"

Mr. Steele:

Yes, yes—go on.

Mr. Barthelmess:

Well, I cogitated over the impending catastrophe. And after due deliberation I suggested that we take the "rushes" to New York and run them in our own projection room. We did so, and I assure you that the difference in the appearance of the pictures was the difference between a daguerrotype and the modern photographer's art.

Mr. Steele:

Do you think, then, that given any picture the modern projection equipment will present it to advantage?

Mr. Barthelmess:

I think nothing of the kind. After all, the projector merely reflects what it sees, and if the camera has recorded a blur on the celluloid that blur will appear in all its glory. I dare say that the ratio of perfect projection is in proportion to the quality of photography in the picture. I

(Continued on Page 24)

Do Motion Pictures Injure the Eyes?

By Herbert S. Marshutz,
A. B., D. O.

Prominent Optometrist
States that Eyes Found
to Be Source of Trouble

The effect of motion pictures upon eyes has been misunderstood for years.

The first impressions on the subject date back to a time when fewer people attended pictures, and to a period when motion picture projection was not at all like it is today.

At the present time several millions of people of all ages visit motion picture houses every day. Ninety per cent of them will suffer no inconvenience to their eyes. But there is nevertheless an undercurrent of belief firmly imbedded in the public mind in the United States and wherever pictures are shown, that movies hurt the eyes. Now why is this the case?

In preparing this material, we have analyzed the conditions under which the human eye functions in a motion picture theater. Every condition that is somewhat unusual, and any circumstance under which the eye must work differently than in any other visual effort, are a hundred times less objectionable than 15 or 20 years ago. During that early period, there were many flaws both in picture making and picture showing. Today they are either greatly lessened or omitted entirely.

"Dark-Adaptation" Necessary

Now what are the unusual conditions under which the eye must function in a picture house? There are quite a few. First of all, there is a great reduction in the amount of light. Even the brightest

and whitest scenes are dim in contrast with daylight illumination. And the theater is still darker. Consequently, the eye is working in reduced light. Even though the eye is observing detail the pupil is larger than would be the case in an ordinary room or office. Between the screen and the corners of the auditorium, is a decided contrast of lighting. Another unusual feature in spite of the impression of flowing motion, the picture on the screen is, of course, a series of rapidly changing scenes. Then again, there is no depth—the screen is a flat surface. And the eye is seeing a world without its accustomed perspective. What one sees is not an image of any object but the image of an image. It is not in natural colors as a rule, but in monotonous tones of black and white.

Abnormal Functioning

All these point to the undeniable fact that the eye must function under abnormal conditions while viewing a photoplay. But we must not be too harsh. Most eyes should have no difficulty. The old viewpoint that motion pictures are bad for the eyes is based on conditions of many years ago. At the present time, the abnormal conditions present in the showing of a photoplay are for the most part present in the legitimate theater, at the lantern lecture, at the opera and even in some of our badly illuminated homes and offices. Except for the motion and the quick changes of shading on the

screen, motion pictures and the theaters have much in common when it comes to the eyes.

How to Rest Eyes

The average photoplay lasts almost two hours, during which time the audience usually has the opportunity to rest the eyes by listening to music or viewing a vaudeville act. Such rest periods are very valuable and by all means should be taken advantage of. Trying to read programs in the usually dim light between acts is just as apt to bring on visual fatigue as watching the picture too steadily. For years I have made a practice of looking around the theatre, studying the decorative effects, noting the ornamentations — anything to get the eyes on different light and at different angles. This has proven very restful. Nothing will tire eyes more than looking too steadily at one point or at one kind of object. Even gazing for just a minute at one color, one letter, produces what we know as retinal fatigue. This is involved in most discomforts experienced from prolonged use of the eyes at theaters, or any steady observation at any distance, near or far.

An Improved Situation

Since the nickelodeon of long ago, so much improvement has been made in the showing of pictures that no one who has investigated the subject today can come to the conclusion that the movies

(Continued on Page 24)

History Makers in World of Cinematography

Many Achievements Made
by Sextet of Noted A. S. C.
Camera Celebrities.



Artists Responsible for
Pictorial Masterpieces
in the Cinema World.



Ernest Palmer, A. S. C., who has imbued the Fox production, "Yellow Fingers," with rare cinematographic atmosphere.



Norbert Brodin, A. S. C., who is now filming Frank Lloyd's "The Wise Guy." His work in "The Sea Hawk" is still remembered.



Ernest Haller, A. S. C., who has put Michael Arlen's thoughts in cinematographic form in "The Dancer from Paris."



George Barnes, A. S. C., who is carrying on with the quality of work he manifested in "The Dark Angel."



Bert Glennon, A. S. C., who is the photographic mentor on the current Paramount features starring Pola Negri.



Herford Tynes Cowling, A. S. C., who is scoring a great personal "scoop" in filming Sir Hari Singh's coronation.

Culture and the Cinematographer

By T. D'Arcy Corrigan M. A., LL. D. (Dublin); Ph. D., Litt. D. (Madrid). The Retort Courteous to Prominent Actor's Observations on Cinematographers

(By all tenets of education as well as culture, T. D'Arcy Corrigan is eminently fitted to write the accompanying article. Mr. Corrigan received his primary education in Ireland and England under the Jesuit Fathers, and later with the Basilian Fathers in France. He subsequently attended lectures at the celebrated Sorbonne, Paris. His father receiving a naval appointment to Malta, young Corrigan was sent to the University of Madrid, where he took his degree of doctorate of philosophy and letters. In Spain he was lay secretary to the late Cardinal Gascajarez. Returning to Ireland he entered Trinity College, Dublin, to study law, and in due course was called to the Irish bar. However, the lure of literature and stage drew him to London. He



T. D'Arcy Corrigan

soon drifted to the stage, where, in a notable career over a period of 18 years, he became known

as one of the foremost Irish character actors in Great Britain. During this time, he found occasion for dilatory writing, and contributed as a critic to various publications including the "Dublin Review" and the "Irish Monthly." During the war he was official translator of documents for the Admiralty at Whitehall. During the second rebellion in Ireland, he was staff-lieutenant under General Michael Collins. On coming to this country, he held the chair of English at the University of Buffalo. Because of his classical knowledge and his familiarity with the romance languages, his services were soon in demand by such publishers as Funk and Wagnalls, the Encyclopedia Americana and the Lincoln Library. Mr. Corrigan is at present in Hollywood, where he is transferring his acumen as an actor to the screen.—Editor's Note.)

"... Blow, blow, thou winter wind
Thou art not so unkind
As benefits forgot" . . . King Lear.
Shakespeare.

The attention of the present writer has been drawn to two articles which have recently appeared in the *Film Mercury* and the *American Cinematographer* respectively. Both articles deal with certain remarks more or less derogatory to various sections of the motion picture industry and made by Mr. Milton Sills on the occasion of a luncheon given by the New York National Board of Review. These remarks are said to have caused considerable indignation, especially among the cameramen, to whom Mr. Sills seems to have dealt "the most unkindest cut of all" by accusing them of lack of culture and an entire

ignorance of the physics of light.

Debt is Great

It is to be regretted that Mr. Sills should have lent himself to such airy vapourings wanting so much in verisimilitude and yet able to irritate the susceptibilities of a body of capable and worthy technicians to whom Mr. Sills like other eminent artists in his profession owes so much in his screen career.

It may, however, be said in extenuation of Mr. Sills' aspersions that he was no doubt called upon to speak impromptu and for the inspiration of what rhetoricians tell us is one of the most difficult forms of oratory—an after dinner speech—had to rely in these days of prohibition on no stronger stimulant

than a tumbler of iced water. Hence he was unable to reach to the verities, for as the ancients tell us "not in water, but in wine, is truth to be found"—*in vino veritas*, they insisted. His words then, are not to be taken too seriously. Horace, to show the evanescent nature of the verses of certain self-styled poets, was wont to refer to the latter as mere water drinkers—"aquae potoribus."

What is Culture?

But seriously, in what does this culture consist, the lack of which in the cameraman, Mr. Sills deplures? Briefly, it may be said that just as art and science as well as morality go to form the *substance* of religion—that is, religion a part from supernaturalism—so culture in its highest

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The EDITORS' LENS . . . focused by FOSTER GOSS

"Not Credited"

- ¶ An inspection of the list of "Releases," as published in the *American Cinematographer* this month, reveals the refreshing fact that not a single production carries the line, "Not Credited."
- ¶ This circumstance speaks a world of progress. When the "Releases" idea was originated several years ago as an exclusive feature of this publication, the "Not Credited" legend practically dominated. The reason was simply that the producers were not crediting the cinematographer on the pictures which they made. Through the efforts of this magazine and of the American Society of Cinematographers, the fallacy of the former procedure was urged upon those responsible, with the result that the practice of ignoring the cinematographers was slowly but surely put in the discard.
- ¶ For this, then, we may salute the producers!
- ¶ But the situation is as yet unsolved. All the co-operation of the producers is but for naught if, after the picture reaches the theatre, the credit titles are eliminated and the cinematographer is not recognized in the program, house organ or otherwise. This method, as has been pointed out on numerous occasions previously, is indulged in too often by the managers of important theatres. It is to be hoped that they will show the same sign of progress that the producers have!

A Bugaboo Blasted

- ¶ The hoary complaint that motion pictures injure the eyes seems to be very decisively spiked in the article which, written by Dr. Herbert S. Marshutz, appears in other columns of this issue. It

is more than welcome that the results of the research, which is mentioned in Dr. Marshutz' article, come from outside the industry. Responsible theatres long have been endeavoring to lessen any suggestion of eyestrain, so that the facts, as revealed by Dr. Marshutz, that, if there is strain in the cinema house, it is the eyes that are at fault blast the final vestige of the old complaint. If a percentage of the public still needs to be educated on this point, no more time should be wasted in so doing. Dr. Marshutz, in radio talks, similar to his article, over KFWB, Warner Brothers, in Hollywood, demonstrates one intelligent way of going about the matter.

" D a n n y " P a s s e s

¶ With the passing of Joseph Dannenberg—"Danny"—editor of the *Film Daily*, the motion picture industry loses an identity that will never be replaced. Peculiarly enough, much of the eulogy that attended Danny's sudden departure, dwelt on the lovable and the square-shooting personality of the man—however, Danny was not only a true gentleman of the highest breeding, but he was a worker whose efforts very definitely bettered the profession which he so meritoriously graced for the decade preceding his death. Danny was a success as a newspaperman; he was a success in the trade paper field before he changed to film journalism; he was a success as the guiding editorial genius of the *Film Daily*. Danny produced—he built, constructed and never destroyed.

¶ In looking backward, it is with gratification that we remember that the leading feature in the A. S. C. Annual last October, when various critics picked the productions with the best cinematography for the past year, was Danny's. His prompt attention and cooperation in that instance were indicative of the ever-efficient and likeable man that was Danny.



J. D. Jennings, A. S. C., has returned to Hollywood from a lengthy location trip, four weeks of which were spent in Kernville and two and one-half weeks of which were passed in Santa Ynez. Jennings is filming the latest Buster Keaton feature, "Battling Butler," which Keaton himself is directing. The cast includes Sally O'Neill, Snitz Edwards, Tom Wilson, Francis MacDonald and Mary O'Brien.

* * * *

E. B. Du Par, A. S. C., has finished shooting the latest Rin-Tin-Tin feature, "The Hero of the Big Snows." Alice Calhoun and Don Alvarado headed the cast. Herman C. Raymaker directed. Du Par is now filming the Warner Bros. special production, "The Better Ole", which, starring Syd Chaplin, is being directed by Chuck Reisner. The cast numbers Doris Hill and Tom Kennedy.

* * * *

Harold Wenstrom, A. S. C., has been appointed chief cinematographer on the latest Corinne Griffith production, "Into Her Kingdom." Svend Gade is directing.

* * * *

John Arnold, A. S. C., has completed the photographing of "Love's Blindness," a Metro-Goldwyn-Mayer production based on an Elinor Glyn story. John Francis Dillon directed.

* * * *

Walter Griffin, A. S. C., is filming a David Hartford production, "Jack in the Pulpit," starring Cullen Landis.

* * * *

Hans Koenekamp, A. S. C., is hard at work on the comedy cinematography in "Spuds," Larry Semon's latest comedy feature. Dorothy Dwan is leading lady.

* * * *

Barney McGill, A. S. C., is shooting the Fox comedy, "Rah, Rah, Heidelberg," one of the Richard Harding Davis, Van Bibber series. Earle Fox is starred.

William Marshall, A. S. C., is filming the Paramount production, "Wet Paint," starring Raymond Griffith.

* * * *

Bert Glennon, A. S. C., is photographing "Good and Naughty," the latest Paramount production, starring Pola Negri. Mal St. Clair is directing.

* * * *

Floyd Jackman, A. S. C., is photographing the Mabel Normand comedies being produced at the Hal Roach studios.

* * * *

Fred W. Jackman, A. S. C., has returned from a flying business trip to New York City. "The Devil Horse," the latest Fred W. Jackman production, starring Rex, is ready for general release.

* * * *

Norbert Brodin, A. S. C., is filming Frank Lloyd's latest production, "The Wise Guy."

* * * *

John W. Boyle, A. S. C., is photographing "Miss Nobody," a First National production, starring Anna Q. Nilsson.

* * * *

Sol Polito, A. S. C., is shooting "Satan Town," starring Harry Carey and directed by Edward Mortimer.

* * * *

Gilbert Warrenton, A. S. C., has returned from an extensive location trip to the big snow country, where he filmed wintery sequences for "Prisoners of the Storm," a Universal production, starring House Peters, and directed by Lynn Reynolds. Warrenton's experiences on the current production were the antithesis of those on the previous feature filmed by him. This was Emory Johnson's "The Non-Stop Flight," in which many scenes were shot in the hottest parts of the desert regions.

* * * *

T. D. McCord, A. S. C., is being lauded for his cinematography in First National's "Irene," starring Colleen Moore.



Herbert E. Bradley

says—

You will probably be interested to know that I carried one of your Universal Cameras with Turret Front, on my expedition around the world in 1924 and 1925. We took 10,000 feet of film from America with which to take pictures in Africa, and picked up 5,000 feet additional in Bombay for work in India, Sumatra, Java and Indo-China.

In Africa where we were the first expedition through the cannibal country west of Lake Edward, the camera was carried on the heads of porters for a period of about four months.

Out of the 15,000 feet of film, we had less than 400 feet of poor film which I considered remarkable record, in view of the fact that we had no special photographer, and the pictures were taken by Professor Scott of the University of Chicago and myself. Mr. Scott had never had any experience, and my own had been very limited. The camera gave us entire satisfaction and we were well pleased with its work. It stood up well under hard usage, rough work and every sort of weather.

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UNIVERSAL CAMERA CO.

355 WEST ONTARIO STREET, CHICAGO

Culture and the Cinematographer

(Continued from Page 9)

sense may be regarded as the *essence* of this same natural religion, its fruit being the higher or spiritual life. This spiritual life known as culture embraces the three-fold devotion to Beauty, Goodness and Truth which in reality are but some of the various names denoting the essence of the Supreme Deity. From this consideration we are led to the true meaning of the term, "Civilization," which expresses the same three-fold religion shown on a larger scale in the characters, institutions and customs of nations.

Where this or some such similar view of religion is lost sight of as it is frequent in many of the higher secular institutions of learning, education or university training, call it what you will, spells merely a prodigious intellectual activity accompanied by moral decay. Such decay is evidenced in the abnormalities that we find in the art, literature and drama of today, which by the way we are asked to regard as emanations of culture, whereas in reality our admiration is being challenged in order that we shall fall into ecstasy at beholding a paste pearl in a pig's snout.

The Philosopher's Angle

Mr. Sills' chief *faux pas* would seem to the writer to

be in confounding culture with education in using what the philosophers call the "post hoc ergo propter hoc" style of argument. In other words, he insinuates that culture exists by reason of a college or university training whereas it may and does exist in spite of it. Culture, not indeed in its fulness as the writer has endeavored to portray it above, but in its simple or what may be termed in its embryonic state, is an innate quality.

Where Culture Abides

It may be present in the soul of the peasant as well as in that of the prince or of the college student and can be de-

(Continued on Page 17)

RELEASES

February 15, 1926, to March 22, 1926

TITLE	PHOTOGRAPHED BY
The Grand Duchess and the Waiter	Lee Garmes
Partners Again	Arthur Edeson, member A. S. C.
Three Faces East	Peverall Marley
Stella Maris	Milton Moore
Don't	Max Fabian
Driftin' Through	Sol Polito, member A. S. C.
The Pinch Hitter	Jules Cronjager
Moana	Robert Flaherty
The Far Cry	John W. Boyle, member A. S. C.
Hearts and Fists	Not Credited
Dancing Mothers	J. Roy Hunt
Mare Nostrum	John F. Seitz, member A. S. C.
Fifth Avenue	James C. Van Trees, member A.S.C.
The Traffic Cop	Gilbert Warrenton, member A. S. C.
The Auction Block	John Arnold, member A. S. C.
Irene	T. D. McCord, member A. S. C.
La Boheme	Henri Sartov
Let's Get Married	Edward Cronjager
The Cohens and the Kellys	Charles Stumar, member A. S. C.
The Torrent	William Daniels
Oh! What a Nurse	John Mescall
The Girl from Montmartre	R. J. Bergquist
The Johnstown Flood	Geo. Schneiderman, member A.S.C.
Watch Your Wife	Arthur L. Todd
The Blue Streak	Jack Stevens and Frank Evans
The Transcontinental Limited	Steve Smith, Jr., member A. S. C.
The Dixie Merchant	Frank B. Good, member A. S. C.
Fascinating Youth	Leo Tovar
The Cave Man	David Abel, member A. S. C.
Under Western Skies	Virgil Miller
In Borrowed Plumes	Edward Paul
Sea Horses	James Howe
White Mice	Not Credited
Broken Hearts	Frank Zukor
The Border Sheriff	Harry Mason and Wm. Nobles
Miss Brewster's Millions	H. Kinley Martin
The Set-Up	Eddie Linden
The King of the Turf	Jules Cronjager
The Black Pirate	Henry Sharp, member A. S. C.
The Untamed Lady	George Webber
The Love Toy	John Mescall
My Own Pal	Daniel B. Clark, member A. S. C.
The Bat	Arthur Edeson, member A. S. C.
The Night Patrol	Chas. Long and Jack Stevens
The Broadway Boob	Marcel LePicard
The Only Way	Claude McDonnell
Two Can Play	Andre Barlatier
The Road to Glory	Jos. August
The Bar-C Mystery	Jos. Brotherton, member A. S. C.

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For correct rendering of colors in black and white use Eastman Panchromatic Negative.

No matter how brilliant the hues of set or landscape, they show in the negative, tone for tone, in their correct relationship in monochrome.

Eastman Panchromatic Negative does full justice to the director's art and cinematographer's skill.

Write for the booklet "Eastman Panchromatic Negative Film for Motion Pictures." Properties, uses, handling, development of the film are described.

Motion Picture Film Department

EASTMAN KODAK COMPANY

ROCHESTER, N. Y.

Kinograms Cinematographer Honored by the Explorers Club

One of the greatest honors ever paid a news reel cinematographer has been bestowed upon Gene Lamb, staff operator in the Orient for Kinograms, by The Explorers Club of America, which has made him a full member of that distinguished organization. Associate members with Lamb number among them Amundsen, MacMillan, Captain Bartlett, who was with Peary on his trip of discovery to the pole, and a host of others.

After a two-year expedition into Northern Tibet, Lamb, who is a native of Washington, D. C., came to America for a short visit. He was invited to lecture before the club and so enthusiastic were the members of his audience over his remarkable achievements that he was told an application for membership would probably be favorably acted upon. Lamb thereupon make formal application on January 19 and on March 11, last, he was notified that he had been elected a fully qualified member.

The full importance of this lies in the fact that in order to become a member of The Explorers Club the applicant must prove to the satisfaction of the electoral committee that his explorations have been of value to humanity and science. For instance one clause in the rules expressly states that the applicant must show that he has "contributed to the geographical knowledge of the world." He must also be a recognized author and lecturer.

U. S. Lines Film of Rescue to Be Shown Throughout Nation

The Keith-Albee Theaters have booked for showing all over the United States, "History in the Making," a 1,600-ft. picture treating with the rescue of the British freighter, S. S. Antioe, by Captain George Fried of the United States liner President Roosevelt.

This picture, compiled by Leonard Mitchell of the United States Lines, in collaboration with International Newsreel, was originally used in connection with the official entertainment of Captain Fried by the City of New York. It was shown at the Hippodrome on the occasion of the entertainment of Captain Fried and his crew, and again at the benefit performance of that theater.

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ILEX SUPER CINEMAT F:2.6

CAT. NO.	Covers at Full Aperture	EQUIV. FOCUS		Price in Barrel	Price in Focusing Mt.
		In.	MM.		
1	3/4x1	1 3/8	35	\$32.00	\$36.00
2	3/4x1	2	50	35.00	39.00
3	3/4x1	3	75	43.00	47.00

ILEX PARAGON CINEMAT F:3.5

CAT. NO.	Covers at Full Aperture	EQUIV. FOCUS		Price in Barrel	Price in Focusing Mt.
		In.	MM.		
1	3/4x1	2	50	\$22.00	\$26.00
2	1 1/4 x 1 1/4	3	75	30.00	34.00

ILEX PARAGON ANASTIGMAT F:4.5

CAT. NO.	Covers at Full Aperture	EQUIV. FOCUS		Price in Barrel	Price in Focusing Mt.
		In.	MM.		
1	3/4x1	1 1/4	32	\$23.50	\$26.00

ILEX OPTICAL COMPANY

Manufacturers of High Grade Photographic Lenses and Shutters, Projection Lenses, Condensers and Designers of all types of Special Optical Equipments.

Rochester, New York

(Continued from Page 13)

veloped in any atmosphere that may be congenial to its growth but not antagonistic. Hence we speak of "Nature's gentlemen" such as the writer many golden years ago had the privilege of meeting in a secluded Benedictine monastery in Brittany, in the persons of a group of young peasant novices whose gentleness of bearing, courtesy and charm of manner would have abashed any assembly of a royal court. At best education or university training is but the Ceylon diver who brings to the surface the pearl of great price. It must be at the bottom of the ocean before he can emerge with it. If it be not there the diving of the diver is in vain.

The writer knows certain university men who hold their college degrees and concomitantly their knife and fork as though they were emulating the example of a jazz expert on the kettle-drum. One of these gentlemen indeed is possessed of a *sang-froid* so egregiously daring that in certain hygienic exigencies he discards the use of a handkerchief in public in order to exhibit preferably a boastful dexterity of forefinger and thumb. And seriously what has Mr. Milton Sills to say anent the culture of the two sexual maniacs, Loeb and Leopold, for whom counsel on their behalf put in as one of the strongest pleas the *super-education* of these two young murderers.

In fine, from what has been

written it may easily be seen that culture may be found in the soul of the cameraman despite the lack of a university training. This is proved by the excellence of the majority of pictures made in the studios of this country, 85 per cent of which are sought for in Europe alone. The ambition of the youth who enters on his duties as humble assistant on the set is to handle some day the camera. This ambition postulates hidden culture which through an arduous novitiate of years of drudgery is imperceptibly brought out and nurtured and trained. This is accomplished by the close observation and the acute questioning of the whys and wherefores of his own miscellaneous duties as well as by the watching and enquiring into the meticulous modes and methods of his chief.

University of the Practical

Simultaneously not withstanding Mr. Sills' assertion the camera neophyte receives a thorough and expert training in the physics of light in the university called Experience whose fees—years of patient labor—are the highest. This practical training in this special branch of physics cannot be surpassed if at all equalled in the chemistry lecture halls or laboratories which Mr. Sills seemingly has in mind.

Several months ago the writer had the privilege and pleasure of a conversation

with Mr. James Cruze on this very subject. They were speaking of the comparative successes of American and European pictures. Mr. Cruze, during the course of this interview magnanimously paid tribute to the excellence that is to be found in many European pictures but he added that European directors are unfortunately handicapped owing to the dearth of expert mechanical and technical men whom we have in such vast numbers here in our American studios.

Isolated Personal Instances

Mr. Sills possibly may have been urged to his statements by the remembrance of one or two incidental failures on the part of cameramen to do him full justice. But even so it is bad logic to argue from the particular to the general, and so condemn the many for the faults of a few. He will but prove himself once more the true artist that he is by showing the courage of humility that will enable him to make the *amende honorable* by proclaiming that hard words uttered on the spur of the moment were rather a slip of that unruly member, the tongue, than any malice aforethought springing from the heart.

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**American
Cinematographer**

Arrange Distribution for Ashcraft Automatic Arc

Contracts have been signed by Harry D. Brown, Hollywood electrical engineer, and Clarence Ashcraft, inventor, giving the former the world rights to the handling and distribution of the Ashcraft automatic arc. This device, revolutionary in motion picture lighting equipment, is used in high intensity spot-lights and sun-arcs. It is manufactured under General Electric as well as Ashcraft patents.

Following the consummation of this deal, the Metropolitan and Cecil De Mille Studios purchased \$25,000 worth of 80 ampere spots and sun-arcs, which sale was followed by large orders to Fox and Universal running into the many thousands, it is said.

Brown plans to make Hollywood the distributing point for this important cinema-making product. He will immediately establish agencies in New York and Europe. First National Pictures are already using these lamps both here and in New York.

Gilks to Be Cinematographer on Paramount's "Old Ironsides"

Alfred Gilks, A. S. C., has been appointed chief cinematographer on the Paramount production of "Old Ironsides," which will be produced under the direction of James Cruze. It is understood that Karl Brown, who has been chief cinematographer on Cruze successes for the past several years including "The Covered Wagon," is to enter the directorial fold at the Famous Players-Lasky studios.

Gilks has been connected with the Paramount studios for the past several years. He has filmed numerous important productions, among which was "North of 36."

W. W. Kerrigan Heads New Hollywood Costuming Firm

Announcement was made last month of the incorporation of United Costumers, Inc. The new firm will be located at 6248 Santa Monica Boulevard, Hollywood, and will manufacture costumes for motion picture productions.

The directors of this new Hollywood industry are W. W. Kerrigan, N. E. Walker, N. A. R. Spencer, Dan Greenberg, and H. S. McCaughy. The personnel of the various departments includes Mary A. Foote, ladies'

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designer and cutter; William Myers, uniform cutter and draftsman; Gertrude Streitberger, ladies' historical and period costumes; N. A. R. Spencer, uniforms and men's costumes; Elsie Koch and Louise Howard, wigs, hair goods, make-up; Johnnie Walker, hat factory, properties, and equipment; M. DeBrevin, research and art department; and W. W. Kerrigan, business manager.

The United Costumers have already furnished costumes for "The Sea Beast" prologue at the Figueroa Theatre, Los Angeles, and Paramount's production of "Beau Geste," which is being directed by Herbert Brenon.

Change Name and Ownership of L. A. Motion Picture Company

The L. A. Utility Manufacturing Company has taken over the plant of the L. A. Motion Picture Company which was operated for many years in Los Angeles by H. Paulis.

The new organization will occupy the same premises as its predecessor at 215-217-219 E. Washington street, Los Angeles. This location comprises the factory and salesroom of the firm.

A. J. Sagon, who is in charge of the new company, announces that the line of motion picture equipment will be continued as heretofore, with special attention to precision and general machine work.

Creco Research Department to Be Formed by Sylvester

To promote a better understanding and co-operation between the cinematographer and the studio lighting equipment manufacturer, Bert Sylvester, president of Creco, Inc., Hollywood, will establish shortly a research department, in which experiments will be made concerning visual and actinic values of high intensity arcs, carbons, various diffusing mediums, colored glass and relative stock speeds.

Peter Mole, Jr., consulting engineer for Creco and formerly affiliated with the General Electric Company, will supervise the work of the new department.

Suggestions from members of the American Society of Cinematographers pertaining to the problems at hand, from a photographic and lighting standpoint, will be sincerely appreciated, Creco officials announce. It has been proposed that the results of the experiments be compiled in bulletin or book form.

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Catalogues Present Varied Data on Two Standard Cameras

Two complete and handsome types of catalogues on two standard makes of motion picture cameras have been received during the past month at the offices of the *American Cinematographer*.

One comes from the Universal Camera Company, Chicago, and contains interesting information relative to the use of the Universal in this and in foreign climes.

The other comes from the Motion Picture Apparatus Company, New York City, and presents historical matter concerning the Debie camera, for which the latter company is agent in the United States and in Canada.

Bell and Howell to Establish Branch in London, England

J. H. McNabb, president of the Bell and Howell Company, accompanied by Mrs. McNabb, has left for New York enroute to London on an extended business trip.

McNabb, who is considered an authority in the manufacture and use of motion picture producing and processing equipment, will spend a day or two in New York at the branch office of his company, visiting with the professional film producers using Bell and Howell equipment located in that city, after which he and Mrs. McNabb will embark for London, England, where a new branch office is to be established.

"The rapid growth of our foreign business," stated McNabb shortly before leaving, "has made this move necessary to enable us to extend a closer service to our European users. Personal service is the foundation on which our business has been built and we feel that only by the establishing of a foreign branch office can we properly serve our increasingly large number of users in England and other countries."

Upon leaving London the McNabbs will proceed to Paris. Their itinerary includes Berlin and other points in Europe. They intend to return to Chicago some time in May.

* * * *

Charles Van Enger, A. S. C., is in New York City for the filming of his first production on his new First National contract.



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The camera outfit was sold three weeks ago, so you can see the advertisement is useless. May I state that I received queries from all over the country and some foreign queries as well! This shows the tremendous advertising power of the American Cinematographer.

Yours very truly,

(Signed) FRANK KING.

E. Burton Steene, A. S. C., has been away on location for the filming of Akeley work on the latest George Melford production for Metropolitan.

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Critic Resents Thunder Theft; Produces True Film Manuscript

Dear Editor: There's someone who is taking the edge off my critically keen knife. I am an apologetic authority in this business because I admit it. Therefore, I call your attention to an attempt to steal my thunder in column three, page 14, in the February fifth issue of FILM MERCURY. Here is the authentic version of this particular one of my masterpieces. Compare them, and decide for yourself which is true blue:

Some of our bootleggers do not seem to be complete without false beards, so a little technique on the subject may be intriguing in an issue of some remote future date.

Since I am not a bootlegger I am criticized for writing on the subject of alcoholography. This is not a patent medicine journal, and for this astounding reason I cannot give you blueprints or recipes to illustrate the abject matter. The object of Filmograph is to efficiently cater to all trunks of our baggage room. If Harry Burns should ever ask me, (which is not unlikely), "What's Trite With the Movies?" my answer would be, "Lack of pyrotechnical education, beer and platitudes."

While on the subject of alcoholography, take the case of Peter Dawson, who it is alleged, lost Universal recognition because it did not alcoholograph well, yet on "The Boulevard" it alcoholographed splendidly. The answer was in properly triting. This brings me to the subject of intoxication, which we seem to know so little about. (Inasmuch as I also know so little about this, I will study up on it and will treat you to an amazing dissertation on it soon.)

Do any of the brethren know what has become of the "Intoxicating Entrepreneurs" of the P. S. F.? (Poor Sick Fish.)

Took a few shots of Gordon Jinn the other day. Mike Jerkins handed them, and (gracious!) they were delightful.

Notta Nickel, I. W. W.:

This should be a banana year, alcoholographically, as we have started out like two cents.

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Amateur Cinematography

(Continued from Page 5)

On the 16 mm. film, there is a trailer of opaque paper six feet long. This supplies the needed protection, and the camera owner need worry no further.

"I want my pictures as big as I can get them. What is the largest picture I can get?"

The foregoing has been asked the writer quite consistently by a number of Filmo owners. It is the natural desire to want the pictures as large as possible. However, the size of the projected picture is a matter of relativity, and the owner or the prospective owner of an amateur out-

fit need not hesitate in his use or purchase of the same because of the lack of projection space in his home. The minimum size picture may be enjoyed just as thoroughly as that of maximum size, once the family audience is accustomed to the difference. Thus, under ordinary conditions, where a throw of 40 feet is convenient, a clear picture, six by eight, is possible with a two-inch lens.

In conclusion, for those who are using the reversible type of film, it might be well to suggest that this film should be sent to the company laboratories as soon as it has been exposed as lack of promptness in this respect often engenders excessive handling

before it is finally sent, with the result that unpleasant scratches may have been accumulated, through no fault of the laboratory itself.

A. S. C. members are seldom available; but when they are, information concerning their cinematographic achievements may be obtained from the
AMERICAN SOCIETY OF CINEMATOGRAPHERS
 1219-20-21-22 Guaranty Bldg., Hollywood, Calif.

PROJECTION (Continued)

Dialogue on Projection

(Continued from Page 6)

might even say that the future of projection depends largely upon developments in motion picture photography. The projector has been developed to a point approaching perfection. As a matter of fact, I cannot, at this moment think of anything that might be done additionally in the latter connection; except, perhaps, to induce the smaller theaters to install the style and quality of equipment in use in our finer theaters.

In conclusion, I might sum everything up by saying that the matter of good projection is one of the most important factors in the entire scheme of motion pictures. The producing company may spend thousands of dollars on a given production, the work of all concerned in the filming of the picture may approach a masterpiece, but if the projection fails, the picture itself can hardly help failing. After all, the projectionist with his projection equipment is largely the master of our photographic destinies.

Do Motion Pictures Injure the Eyes?

(Continued on Page 7)

harm the eyes in any way. I believe that if pictures bother the eyes, it's the eyes, not the pictures. Those persons who sit very far down in front are apt to feel quite some eye-strain—due to the increased brilliancy of the screen at

this point, the undesirable angle at which the head must be held, and the close position itself. If movies do give you uncomfortable eye sensations, by no means sit closer than half-way down. It is better to wait for a good seat than to take a bad one. If you can't see clearly or comfortably three-fourths of the way back, it is quite likely that it is not the picture at all and your eyes should be examined.

Where Fault Lies

Today the owners of picture theaters are doing a great deal to make the eyes of their audiences more comfortable. To begin with, better films are being made—better and more gentle lighting effects, less harsh contrasts, fewer glaring white surfaces. Then, theaters are not the terrible black holes they used to be. Faint house-lights are on continually—the theater is partly illuminated. There are special acts in various colors. We have "non-flickering" projection, and film without flaws and scratches. All these are factors that have led investigators to the same conclusion. And this is the conclusion—*if the movies hurt your eyes, nine chances out of ten, it's your eyes, not the movies.*

Those eyes which never have rest except when in sleep, are the eyes that suffer from any unusual work. Possibly a long day's drive, pos-

sibly even reading or other close application of the eyes, possibly the theater or a picture show bring discomfort or headaches—such eyes are doing more than their normal work. For them, unfortunately, the act of seeing distant objects is labor—a steady task—instead of relaxation, unless the owner of such eyes is wise enough to get optometric relief through glasses.

Picture Not at Fault

We are glad to note that in accordance with our own views on the subject, such organizations as the Eyesight Council of America, the British Committee on Eyestrain in Cinemas, The New York City Department of Health, Optometrists and Ophthalmologists, illuminating engineers and optical scientists throughout the world are agreed that even though present-day picture theatres cause the eye to function under unusual conditions, such conditions are seldom at fault if the eyes cannot view a half-dozen reels of film without inconvenience or bad after effect.

The concentration necessary in the comparatively dim light is the underlying cause of discomfort in motion picture houses. But such concentration should not affect a normal pair of eyes to any considerable extent nor should it affect eyes that are functioning normally with the aid of glasses.

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Persons whose eyes suffer at the movies owe it to themselves to do everything possible to prevent such an undesirable aftermath to an evening's entertainment. Complete relief is nearly always within their reach with the proper optical help. We who meet the lens-wearing multitude rarely hear a complaint that motion pictures are bothersome.

It is certainly to be hoped

that the bettered conditions in our finer picture theatres will continue to improve, and that the smaller theatres and the small houses in country towns will not fail to take advantage of every improvement and innovation to make the evening's pleasure less strenuous on the public eye.

There are still millions of men and women who stay away and keep their children away from movie theaters. These people are either harboring old ideas about the

harmful effect of pictures or else they are suffering from unnecessary eyestrain without knowing it. It should not be a very difficult task to re-educate them upon the subject. By endeavoring to tell these men and women the truth about eyes and the movies and at the same time continuing the good work in improving visual conditions in the motion picture theatre is one of the best ways we can think of to insure bigger and happier audiences.

Perfect projection should be practical projection—and vice versa. Read about practical projection and kindred subjects in the American Cinematographer.

Facts on Eiffel Tower Film Incident Given by Hatrick

Through the skill of an International Newsreel cinematographer, pictures were obtained in Paris of Leon Callot's ill-starred attempt to fly through the Eiffel Tower, the feat having resulted in the death of the intrepid aviator. The complications, which subsequently developed through the withholding of the negative, are clarified, insofar as the American company is concerned, by the statement issued by Edgar B. Hatrick, general manager of the International Newsreel Corporation. Hatrick's statement follows:

"The motion pictures of Lieut. Callot's flight through the Eiffel Tower were shipped to us by our French agents via the purser of the S. S. La France. When the France was at sea the newspapers published reports that the film was to be seized by the Captain on orders of, presumably, the French Government.

"When the France docked the International Newsreel Corporation made formal demand for the film. This was met with a denial by French Line officials that the film was on board the ship. A representative of the International Newsreel, however, had already examined the ship's manifest and confirmed thereon the fact that the film was aboard the France.

"The writ of replevin resulted. The International Newsreel Corporation does not know that the French Government wishes to suppress the film for sentimental or any other reasons. The International Newsreel Corporation has received no request from the French Government to suppress the film. It only knows that the captain of a French steamship has seized motion picture film which is the property of the International Newsreel. It proposes to recover its property.

"If the film, on being recovered by the International, should prove to be objectionable, and therefore unfit to show to the American public, it will not be released. If the French Government wishes the film suppressed for sentimental reasons, the International Newsreel will give the utmost consideration to any such request, but up to the present time the International Newsreel has not heard from the French Government.

"The International Newsreel is in the position of objecting to the high-handed methods of the French steamship captain—the unwarranted seizure of private property. It has asked the United States Court for aid in the recovery of its own property."



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and

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I'm for the Mitchell.

Yours very truly,

Frank Borzage

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American Cinematographer

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Projection — By EARL J. DENISON
Amateur Cinematography
Len H. Roos, A. S. C. with
Australian Productions

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American Cinematographer

FOSTER GOSS, *Editor and Business Manager*

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A. S. C. Officers for 1926-27 Are Elected



Daniel B. Clark, A. S. C., Is
Chosen President. Board of
Governors Is Also Selected



DANIEL B. CLARK,
President.



L. GUY WILKY,
First Vice-President.



FRANK B. GOOD,
Second Vice-President.



At the annual election of the American Society of Cinematographers, Daniel B. Clark was chosen president of the A. S. C. for the coming year.

Clark's fellow officers, selected at the same time for 1926-27, are as follows:

L. Guy Wilky, first vice president; Frank B. Good, second vice president; Ira H. Morgan, third vice president; George Schneiderman, treasurer, and Charles G. Clarke, secretary.

Board of Governors

In addition to the officers, the Board of Governors elected for the same period of office numbers Victor Milner, John Arnold, Alfred Gilks, Homer A. Scott, King G. Gray, E. Burton Steene, Reginald Lyons, H. Lyman Broening and Fred W. Jackman.

Active in A. S. C.

Dan Clark, the new president, is chief cinematographer for Tom Mix in Fox productions. He has been active in the affairs of the A. S. C. since he was invited to membership several years ago. During the administration just closed, he held the office of second vice president, in addition to being a regular member of the Board of Governors.

For Tom Mix

Clark has photographed all of Tom Mix' productions of recent years. These include "Up and Going," "For Big Stakes," "The Fighting Streak," "Romance Land," "Just Tony," "Do or Dare," "An Arabian Knight," "Watch 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," "Riders of the Purple Sage," "The Rainbow Trail," "The Lucky Horseshoe," "The Everlasting Whisper," "The Best Bad Man," "The Yankee Senor," and "My Own Pal."

First Vice President

L. Guy Wilky, chosen to fill the position of first vice president, has been identified prominently with the activities of the A. S. C. since its inception, having been a charter member of the Society. Wilky began his career as a cinematographer in the Lubin days, later joining American at Santa Barbara, after which he went with the late Thomas H. Ince at the old Inceville studios. During the latter connection, Wilky photo-



IRA H. MORGAN,
Third Vice-President.



CHARLES G. CLARKE,
Secretary.



GEO. SCHNEIDERMAN,
Treasurer.

graphed Bessie Barriscale for one year, Louise Glaum for one year, while he filled an equal period doing general productions under the Ince banner, most of which were with Enid Bennett. Wilky filmed J. Warren Kerrigan in two of that actor's outstanding successes of a decade ago—"The Turn of a Card" and "A Man's Man." Wilky subsequently connected with Famous Players-Lasky, for whom he photographed more than twenty-five William de Mille productions, in which the most notable of the Paramount stars were featured. These productions include "Midsummer Madness," "The Lost Romance," "What Every Woman Knows," "The Prince Chap," "Conrad in Quest of His Youth," "Clarence," "Grumpy," "The Bedroom Window," "The Fast Set," "Locked Doors," "Men and Women," "Lost—A Wife," "New Brooms" and "The Splendid Crime." During the year just closed, Wilky was third vice president of the A. S. C.

Good's Record

Frank B. Good, who will fill the office of second vice president, is likewise a veteran in the affairs of the A. S. C., as well as in the field of cinematography as a whole. Good has held various official posts with the Society, of which he has been a member since the year of its organization. Good was a cinematographer under the D. W. Griffith

reign at the old Fine Arts studios in Hollywood, and, since that pioneer date, has been an outstanding figure in the annals of motion photography. He is best known for his cinematography in Jackie Coogan productions, of which he has been chief cinematographer since Jackie leaped into international fame as a star in his own right. These Coogan productions number "A Boy of Flanders," "Little Robinson Crusoe," "The Rag Man" and "Old Clothes." During the interregnum between Coogan productions, Good has been freelancing, having photographed Frank Borzage's Fox production, "The Dixie Merchant" and other features.

Morgan with Davies

Ira H. Morgan, third vice president, is best known as chief cinematographer for Marion Davies, whom he is photographing at the present time at the Metro-Goldwyn-Mayer studios. Morgan has filmed Miss Davies in "Beauty's Worth," "Janice Meredith," "When Knighthood Was in Flower," "Lights of Old Broadway," "Beverly of Graustark" and other big productions.

Treasurer

George Schneiderman, who will preside over the exchequer of the A. S. C., has been a cinematographer with the William Fox studios since their beginning in the East. He has filmed innumerable Fox features, the out-

(Continued on Page 24)

Len H. Roos to Make Australian Features



A. S. C. Member Returns to
Antipodes on Pioneer Pro-
gram of Film Production



When Roos left Sydney last autumn, prominent people interested in the film industry presented him with an autographed kangaroo (kanga-roos) skin, with a boomerang mounted thereon. "Come back," they invited, and the boomerang symbolized the same—and now Roos is "coming back."



LEN H. ROOS, A. S. C.



Len H. Roos, A. S. C., has been in Los Angeles and Hollywood for several days conducting preparations for an extensive motion picture production program in Australia where he and Norman Dawn, director, will be the active heads of a producing organization which will make feature photoplays, designed both for the market in America and in the Antipodes.

Roos came to Hollywood by automobile from Denver where he has been chief cinematographer and director for the Alexander Film Corp. He will proceed from Los Angeles to Vancouver, whence he and his company will sail early in May on the R. M. S. "Aorangi" for Sydney.

Australian Support

Roos' forthcoming trip is the outgrowth of his extensive sojourn in Australia last year for Fox Varieties. He found an intense interest in potential film production on the other side of the equator with the result that

the production program, which he has just brought about, will be supported heavily by Australian capital.

To date, it is said that no Australian production has ever reached the American screen. The pictures which the Roos organization will make are planned to fill this void, with the subject matter being laid not only in Australia but in the South Seas generally.

The A. S. C. member will be chief cinematographer on the features. Dawn, who is well known as a director in Hollywood, will be the director. The matter of cast and stories will be decided on in Australia. It is quite likely that prominent American names may be numbered among the players.

Faxon Dean, A. S. C., is back in Hollywood after a desert location trip to execute panchromatic scenes for the Metro-Goldwyn-Mayer studios.

PROJECTION Conducted by Earl J. Denison

German Continuous Projector Reviewed

Report Given on Details of New Type of Foreign Projector; Practicability Considered

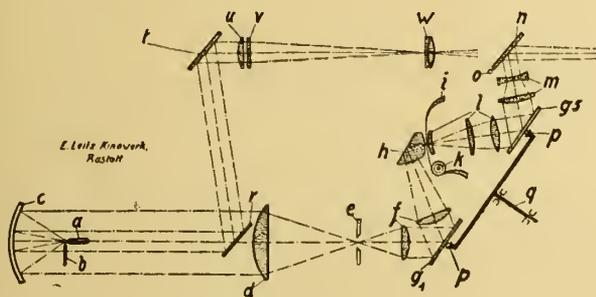


FIGURE 2

- a. Positive Carbon of the arc-lamp.
- b. Negative Carbon of the arc-lamp.
- c. Parabolic mirror.
- d. Condenser lens.
- f. Combined Lens-system to project the Front-window (the bundle of light-rays coming through it) on the film-path.
- g¹ Mirror-sector which swings in the point p, and whereby the bundle of light-rays coming from the front-window are made to wander corresponding to the movement of the film.
- g² Mirror-sector which swings in the point p, and whereby the movement of the film is compensated.
- h. Prism.
- i. Bent film.
- k. Sprocket-wheel (which controls the movement of the film).
- l. Projection-objective.
- m. Tele-objective to give the right enlargement of the original picture.
- n. Projection-mirror, which could be turned round for projection of dia-positives.

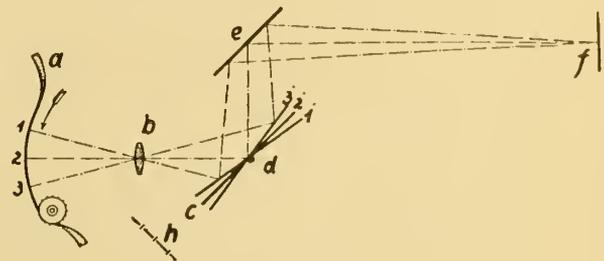


FIGURE 1

- a. Circular film-path with bas the middle-point.
- b. Objective to project the film on the projection screen.
- c. Reflecting mirror, turning round the Lavis d.
- e. Fixed projection-mirror.
- f. Projection screen.
- h. Axis, round which the 8 mirrors c move in the path of the light rays.

- o. Axis round which the Projection-mirror could be turned.
- p. Ball-bearings.
- q. Rotation axis round which the sector-mirrors perform a circular-motion.
- r. Folding-mirror folded out for lantern-slidē-projection.
- t. Reflecting mirror.
- u. Lens for concentrating the light rays on the lantern slide.
- v. Lantern-slide.
- w. Lantern projection lens.

Recently the writer had the pleasure of seeing a demonstration of the Mechau Continuous Projector which, described in this article, is manufactured in Germany.

While I do not think that his machine is adaptable for American use, in its present type of construction, I do think it signalizes wonderful possibilities, as there are a number of clever little devices incorporated in the projector. For instance, the fire shutter is operated by mercury, is absolutely positive in its action and is also extremely simple. The accompanying charts plainly show the action of the light rays through the projector and present an interesting study in optics.

Creation Reviewed

Therefore, I believe that the readers, from a mechanical and engineering viewpoint, would be interested in a review of the projector.

The fundamental idea of the "optical compensation arrangement" is illustrated in the accompanying charts and is described by the manufacturers as follows:

"If a frame happens to be in the position 1 and the mirror c in the position 1¹, its projection appears on the screen in the point f. If this frame now moves downward in the position 2, then its projection on the screen would have wandered from the original

(Continued on Page 18)

The EDITORS' LENS . . . focused by FOSTER GOSS

L a b o r a t o r y C o n s o l i d a t i o n

- ¶ The American industrial tendency toward consolidation is manifesting itself more than ever in the realm of motion pictures. The most notable example of the past couple years, so far as the lay mind is concerned, was the combination of the resources of Metro, Goldwyn and Mayer under one banner, behind which Loew's, Inc., is a guiding power.
- ¶ Recently, and more inconspicuously because the trade primarily was affected, the International Projector Corporation was brought into being, marshalling the assets of Power's, Simplex and Acme.
- ¶ Prior to the projector merger, an amalgamation, announced as involving more than \$6,000,000, welded together, in the laboratory field, under the name of Consolidated Film Industries, Inc., the destinies of the Craftsmen Film Laboratories, the Erboglyph company, Republic Laboratories and Commercial Traders Cinema Corporation in the East, and, in Hollywood, the Standard Film Laboratories.
- ¶ This formed a laboratory organization which was believed to be of maximum proportions. Surprising, then, was the news during the past month that Consolidated had acquired interests in their nearest competitors—the laboratories headed by Watterson R. Rothacker in Chicago and in Hollywood. There is the usual speculation current as to whether the trend toward combination is for the good or detriment of all concerned.

¶ Speaking editorially, MERRITT CRAWFORD, publisher of *Motion Pictures Today*, strikes the heart of the present frame of mind, as follows:

- "It is not in mere bigness, alone, however, nor in the possibility of superior efficiency in operation which such a merger of important printing and developing interests may have in competition with the smaller laboratory groups, that we see ultimate danger to the industry as a whole.
- "It is rather because of the fact that every producing or distributing company with but few exceptions, is inevitably (such is the curious system of financing in this business) not only in debt for film to the laboratory which manufactures its prints and holds its negatives, and beholden to it for credit at times, but is also largely dependent upon the laboratory for the large cash advances necessary to carry its production and distribution overhead.
- "Herein, as we see it, lies the real danger to the industry and it needs no great wisdom to foresee the possibilities for downright injury, burdensome dictation and preferential price-fixing which might result to the vast disadvantage of the majority, were a single laboratory group to become so powerful as to eliminate all genuine competition.
- "Right now, it seems to us, is the best time to consider this matter from all angles—six months from now it may be too late."

¶ Competition is necessary to stimulate trade, the orthodox political economists tell us. Consolidation cuts down overhead and eliminates duplication, their more modern brethren reply. There can be little doubt as to the economic desirability of a combination which tends toward the elimination of needless competitive waste and substitutes therefor, under legitimate regulation and honest control, enlarged facilities for research and general progress. We hope that the latter is what today's laboratory situation presages. Certainly there is no reason why the expanded efforts should not bring such usefulness to the industry as a whole. Meanwhile, let us also hope that what Mr. Crawford terms as "genuine competition" may not be stamped out.

Amateur Cinematography

¶ (Questions on amateur cinematography will be gladly answered in this department. Inquirers should sign all queries

with correct name and address. Only legitimate questions will be considered. None which

tend to jeopardize general motion picture production by divulging trade secrets will receive attention.)

Improvements on Cine-Kodak and Kodoscope

By Eastman Brings Out New
ThurLOW Weed Wrinkles on Amateur Cine-
BARNES matographic Paraphernalia

Recent announcement of latest improvements in new amateur motion picture equipment by the Eastman Kodak Company bids fair to do much toward bringing this growing, fascinating pastime of homemade and home-shown movies into universal use. Ever since the first Cine-Kodak and Kodoscope were announced in June, 1923, amateur cinematography has been growing by leaps and bounds. The New Eastman products just announced forecast a further popularization of amateur motion picture taking.

When the average beginner realizes that better pictures as a rule can be secured with an amateur motion picture camera than with a still camera, and that movies are made just as easily as snapshots, it will not be long before everyone will be anxious to be his own cinematographer and projectionist.

New Equipment

The new equipment now completes a well rounded out line of Eastman amateur movie outfits which will meet every requirement and every purse. These include the Cine-Kodak Model B with either an f. 6.5 or an f. 3.5 lens, a new projector, the Kodoscope, Model C, and the Model A Cine-Kodak with interchangeable lenses; the fast f. 1.9 and the f. 4.5 (3 1/8-inch) lens for telephoto effects.

To really appreciate these outfits, a brief description of each should be considered.

One of the simplest and most efficient amateur movie cameras is the Cine-Kodak B with an f. 6.5 lens, which the Eastman Company announced last fall.

Improvement

Realizing that this model would have a wider range of usefulness if the lens speed were increased, the company's experts decided to fit it with an f. 3.5 Kodak Anastigmat lens which is three and one-half times as fast as the f. 6.5 lens, although, of course, the original f. 6.5 equipment is still available. Thus ama-

teur cinematographers can now secure results with this f. 3.5 model under lighting conditions that heretofore would have precluded picture taking. The Model B with an f. 6.5 lens will be fitted with the new f. 3.5 lens for a reasonable consideration, the company retaining the former lens.

Sight Finder Added

Another improvement has been added to the Cine-Kodak B in the shape of a sight finder which is mounted on the top of the camera and enables the operator to see what is being photographed by holding the camera at eye level, a position well adapted for judiciously following moving objects—polo players, yacht races, etc. The camera can also be held at waist level and the regular finder used, just as in taking snapshots.

As with the f. 6.5 lens, the Cine-Kodak B with the f. 3.5 lens is of the fixed focus type. In size, weight and mechanical features, the model with either lens is exactly the same, the only difference between the two is in the matter of lens speed and the fact that on the f. 3.5 camera an ingenious device assures sharp close-ups with the larger diaphragm openings.

The f. 3.5 lens is permanently fixed in position and is properly in focus for all pictures that are eight feet or more away. For close-ups a mere turn of a milled head at the top of the camera swings an extra lens (portrait attachment) in front of the regular lens. Instantly the camera is then ready for making pictures from four to eight feet from the subject.

Danger Signal Feature

A clever danger signal cautions one against using the wrong lens for the desired view. As the portrait attachment swings into position a red screen is automatically thrown in front of the regular reflecting finder lens and a centering device assures that the attach-

(Continued on Page 16)

Amateur Camera Makes Intimate Shots Possible

Professional Cinematography Aided by Small Portable Outfits, Experience Shows

By
Charles G. Clarke
A. S. C.

Portability Lends Self to Close Range Shooting in Chases and the Like

BASICALLY a camera is an instrument that records photographically the scene that appears within a certain angle before it. The finished picture on the screen shows to each observer in the audience the view he would see if he were on the same spot occupied by the camera.

The greater part of our observing or "seeing" is done while the body is still, so the most of the scenes taken for a motion picture are made from a stationary and rigid tripod, when the scene should convey to the observer that, figuratively, he was not in motion while that scene was enacted.

Moving Shots

For those scenes made from the viewpoint of a person traveling, the cameras are mounted on traveling vehicles of different forms. The average professional motion picture camera weighs about 70 pounds, so extreme portability was impossible until the advent recently of the "Eymo" Camera and others of its type. Many startling effects may be obtained by placing the camera (therefore, the observer) on rapidly moving objects, or from unusual view-points, such as

from a pit under an onrush of stampeding cattle, etc. Heretofore the size and weight of the camera had limited the making of these effective shots.

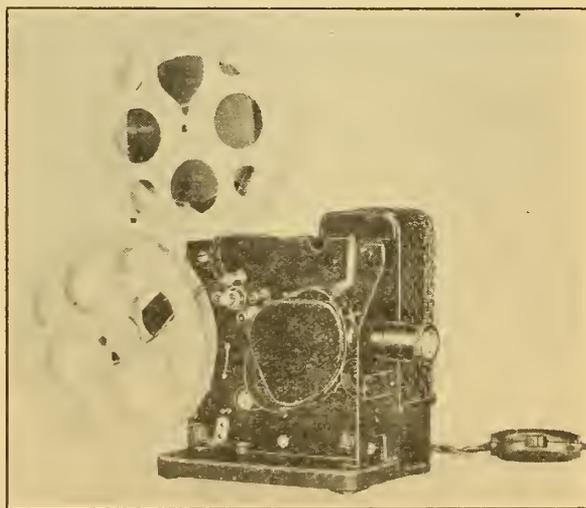
Horseback

In one of my recent pictures the action called for a gun fight between two persons while riding horses—one was riding away from the other, firing back at him the while. His eyes, while centered on the rider behind him, recorded the ground, brush, etc., rushing away from him, and also the up and down movements of the galloping horse. To show the audience the things that happened before the man's eyes, I rode a horse at a gallop while operating a portable camera centered on the rider behind who repeated his actions for me as he had done in the establishing shot.

(Continued on Page 19)



Illustrating latest model of the Eastman Cine-Kodak, Model B, with the new f. 3-5 lens which has been added to the equipment.

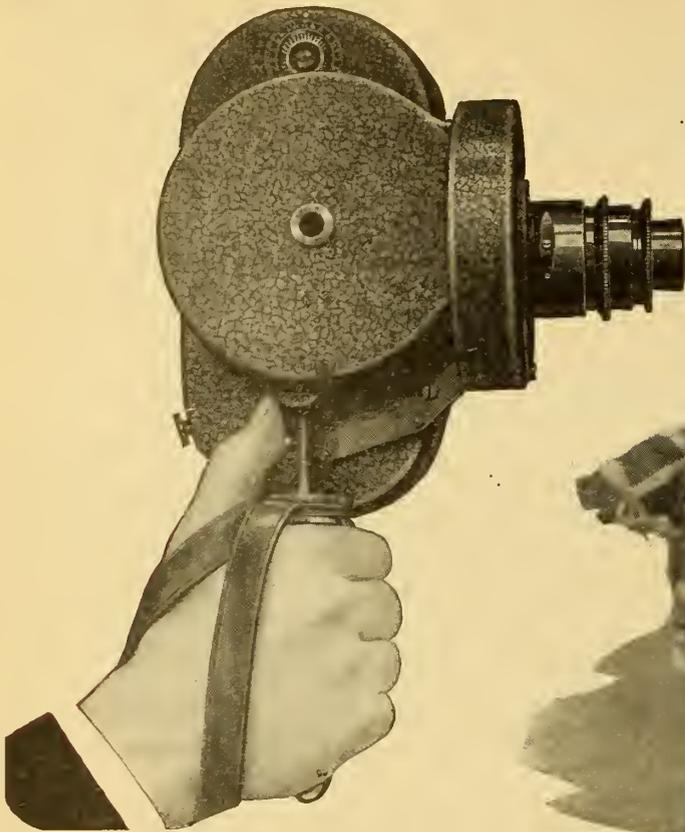


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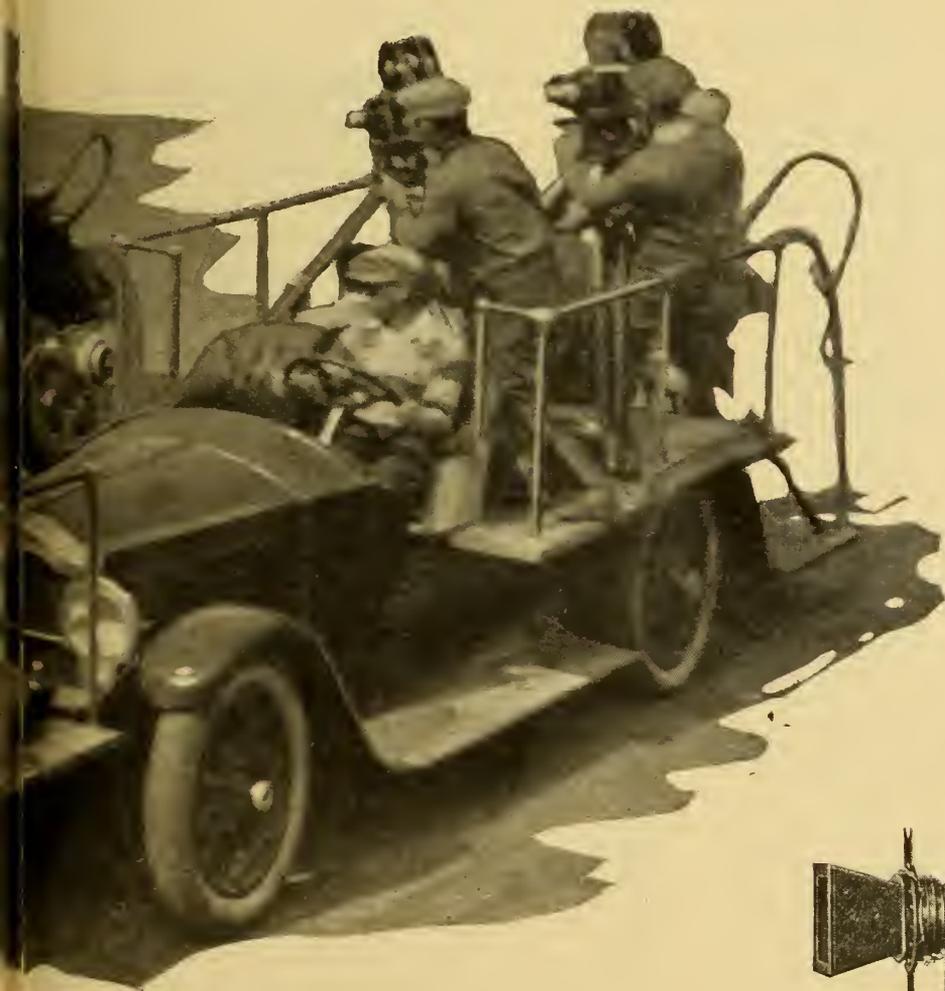
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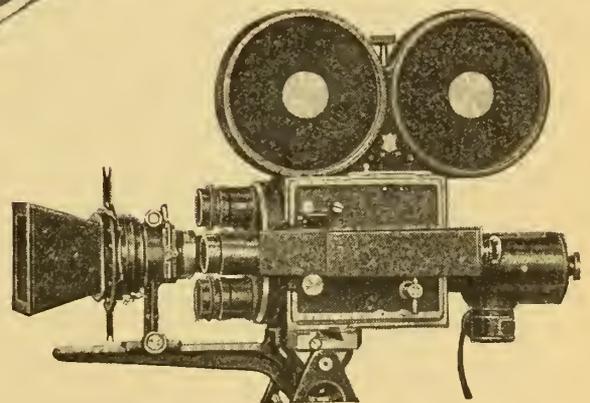
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Amateur Cinematography

(Continued from Page 10)

ment has been properly placed—just far enough, and not too far. Thus there is no chance for the operator to err, for by the color shown in the reflecting finder he knows exactly whether the lenses are hooked up for a general view (eight feet or beyond) or for a close-up.

With this f. 3.5 lens the Model B Cine-Kodak has a greater versatility. Average subjects and scenes can be secured on very dull, cloudy days and early morning or late afternoon presents no difficulty in obtaining satisfactory pictures.

One of the essential features of the Cine-Kodak B, aside from its remarkable ability to take pictures equal to those made by professional cameras, is its extreme ease of portability, a spring motor drive being used.

The camera is well balanced when held in the hand, weighs but five pounds when loaded and is no larger than a box of fifty cigars. It can be readily carried like any other Kodak and put into operation as quick as one can frame the shot and press the release.

Standard Speed

The simplicity of its operation is also noteworthy as it is as easy to manipulate as any Kodak. There is no way that anyone can tinker with the rate at which each frame or picture is exposed. This is set at the factory at sixteen frames a second, which amount of exposure has been established for many years as a standard which will sufficiently arrest motion and which when projected will depict normal action on the screen.

The maximum loading capacity of the Cine-Kodak B is 100 feet of safety 16 mm. film which will allow continued action for a little more than four minutes. The exposure lever can be locked in taking position so that the operator himself can be included in any scene, in which case, of course, the camera has to rest on some firm support.

How Motor Works

Back of the exposure lever is a winding crank. By turning this a few times the spring is tightened and ready for release, nor is there any danger of overwinding; the construction of the spring mechanism being such that this danger is eliminated. One winding will permit exposing about twenty feet of film. When the spring begins to run down there is no dan-



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ger of the motor coasting, or of the film running through the gate at other than constant speed. An ingenious device prevents this. When a scene in the making is completed, the release lever springs back into position, stopping the camera instantly, and the stop is always made with the shutter closed.

Footage Indicated

A footage indicator on the top of the Cine-Kodak tells how many feet of unexposed film are left in the camera. In front, near the recessed lens, is an exposure guide showing which stop to use under various light conditions.

Threading is a simple process as the pull-down claws in the gate automatically adjust themselves in the film perforations. A locking lever holds the film in place after it has been threaded through the curved gate. The spring mechanism will not function except when this lever is properly pushed in place. The curved gate is an interesting feature of this camera which holds the film securely and accurately in the focal plane and is constructed in such a manner as to eliminate the danger of film scratches.

Also studs in the door prevent closing the camera if the sprocket clamps have not been shut when loading.

New Kodascope

No movie equipment is complete without a projector, and the new motor driven Kodascope C is expected to be a great factor in popularizing home movies.

To Friends' Homes

This new Kodascope is a marvel for compactness, weighs a little more than nine pounds and is so simple to operate that practically nothing can get out of order. It is designed as companion equipment for the Cine-Kodak B. When the projector is idle, the reel arms can be folded and the removable lens barrel placed on a clip on the base, making the carrying dimensions only 8x5½x7 inches. This ease of portability makes it a simple matter for the outfit to be taken to the home of friends for a real home movie evening.

This convenient size is further enhanced by a carrying case, durably built of metal and covered with imitation leather.

Adjustable Focus

The projector can be operated on any electric light socket and once threaded needs no

attention until the picture is through. The machine will take 400 feet of Cine-Kodak Film, which will run for about sixteen minutes. The focus is adjusted by turning the lens in its socket.

Reflected Light

One of the features of the projector and a means whereby compactness has been secured is that the light used for projection is reflected. The lamp house is on the side of the machine and not in the rear, as is usually the rule in all projectors. The light first goes through a revolving shutter and is then thrown on a mirror where it is reflected at a right angle to pass through the film. Whenever "still" pictures are desired a convenient lever disengages the motor belt from the mechanism, thereby automatically releasing a safety shutter or perforated disk in front of the light rays to protect the motionless film.

Mazda Bulb

The 100 watt electric bulb supplied with Kodascope C is also a new departure in Mazda design. It is so manufactured that the filaments are always correctly aligned in respect to the optical axis of the projector. In non-technical language this simply means that when a new bulb is placed in the lamp socket no complicated or bothering filament aligning of focal adjustments need be made.

Threading is easy in every sense. The Model C requires only one sprocket nor does the operator need to engage the film in the pull-down claws. The film is held in the gate by spring tension so that the teeth of the pull-down mechanism automatically enter the perforations. "Framing" (lowering or raising the picture area to fit the gate aperture for correct screen alignment) is controlled by a lever.

Pictures with the projector will fill a 30x40 inch screen at a distance of eighteen feet, a projection which is well suited to the average home. Like the new Cine-Kodak B it is made for the many to enjoy home movies.

Kodascope Library

This enjoyment is not limited to the personal homemade movies. From Kodascope Libraries, Inc., which now has branches in the principal cities of the country professional photoplays can be obtained; likewise travalogues, comedies, dramas, educational pictures or animated cartoons, and many of the well-known screen stars can offer entertain-

(Continued on Page 20)

PROJECTION

(Continued from Page 7)

point f . In the event that during the time that the film has moved from point 1 to 2, the mirror c maintains its former position 1^1 . If the mirror, however, turns and takes up the new position 2, then the projection on the screen also remains stationary in the point f and the film movement is thus optically compensated. The same is true, if the frame and the mirror take up the respective positions 3 and 3^1 . At this moment at the point f appears the following picture whose movement will be compensated in the very same way. For this purpose the mirror c has another rotatory motion round the axis h , besides the above mentioned swinging motion and leaves the bundle of light rays behind as soon as it has come in the position of 3^1 . A second mirror follows it and takes the position 1^1 , which was originally occupied by the first mirror and goes the same way, that is first occupying the position 1^1 like its predecessor and ending in position 3^1 . Hereby is the movement of the second frame compensated. This goes on till 8 sector mirrors have made a full circular motion round the axis h . A suitable wheel-work between the axis h and the film sprocket wheel k (see Fig. 2) works in such a way that a complete correspondence exists between the movement of the film and the compensating arrangement.

"Because the mirrors follow each other without any gap, it happens that with every change of picture, for a time, parts of two sector mirrors, are at the same time in the bundle of light rays. The one mirror is compensating the movement of one frame whereas the second mirror has already begun the compensation of the following frame and so it happens that with every transition of a picture on the projection screen, the projection of two frames which follow each other occurs at the same time. The process goes forward in such a manner that during every change of picture the mirror which is leaving the field gets less and less light and the mirror which is just entering the field gets more and more light so that the illumination of both the pictures which cover each other on the screen is continuously changing. Their total illumination however remains the same. One projected picture is thus replaced by the next following without the dark interval and the change of pictures corre-

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sponds perfectly to the process as it takes place in the human eye or as it could be sometimes observed in a slower manner during the change of scenes (visions of dreams) in many films.

"In order that the gain of light which occurs by the absence of the shutter in this new projector is not lost again, it is necessary that the bundle of light rays should also move along with the film. A strongly lighted and rectangular front window (see Fig. 2) throws its concentrated light-rays on each film picture by a system of lenses and the bundle of rays in front of the film is led over the same sector-mirrors which bring about the optical compensation on the side of the film. These mirrors which catch the bundle of rays and reflect them on the film perform a swinging motion and thereby enable the lighted picture of the front-window on the film to move forward along with each single film picture. Each sector mirror disappears on the lower side and makes its appearance again on the other side."

It will be noted that no shutter is used on the projector, this, of course, being a radical departure from established procedure. It is stated that the principal parts of the instrument are interchangeable, and are, in addition, enclosed. The interior mechanism is lubricated by a central lubrication method.

Amateur Camera Makes Intimate Shots Possible

(Continued from page 11)

This is only one of the unusual viewpoints that these new cameras make possible because of their portability.

As another example, suppose the action called for a scene of a parachute jump from an aeroplane. The audience could be given the thrill, and could feel the sensation of whizzing objects that passed as the jump was being made if the jumper operated one of these automatic, portable cameras.

Let the mind ramble for a moment and one will visualize scores of uses for a camera of this type.

Just as the gyroscopic panoramic and tilting tripod head, of which the Akeley was first to be extensively used has become so widely used that nowadays scenarios specify "Akeley shot," I believe that the broader field of novel shots that the small, portable, automatic camera opens up will cause a marked influence in the technique of production in the future.

"The best" doesn't always mean a change!

ONE reason why the silent drama has forged ahead by leaps and bounds has been its hammer-and-tongs insistence on "the best." Mediocre and almost-as-good are taboo.

Often this has meant constant change. But not always! In the important question of lighting, "the Coops" have long been *the* light to use—old timers and newcomers alike all know.

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ETC.



ETC.

(Continued from Page 17)

ment before one's fireside. To meet this new demand the company has planned still further extensions in this service. Already there are more than four hundred subjects from which library subscribers may choose.

Specialized Usage

As complete as this movie equipment is for amateur use, there are still those who will not be entirely satisfied. These will want special lenses for a more specialized type of cinematography.

Thus the serious worker, the advanced amateur, the surgeon, the scientist, the naturalist and others will appreciate Cine-Kodak A with the f. 1.9 lens equipment, and the interchangeable long focus f. 4.5 (3 $\frac{1}{8}$ inch) lens for telephoto effects. This f. 1.9 lens is three times as fast as the f.3.5 lens with which this model was originally equipped, so that the Cine-Kodak A can now be pressed into service a lot of times and in a number of places where ordinarily pictures cannot be secured. With a subject close to a good window and bright light outside, it will even make interiors. With this faster lens the cranking can also be speeded up so that interesting slow motion pictures can be made even when the light is poor.

For Surgeons

Many surgeons and obstetricians are expected to desire this equipment for securing records of operations for teaching purposes in hospitals.

Another innovation for the advance amateur cinematographer is a separate lens for telephoto effects for the Cine-Kodak A, which is interchangeable with the f. 1.9 lens. The f. 1.9 lens can be removed and in its place can be substituted the 78 mm. (3 $\frac{1}{8}$ inch) f. 4.5 lens with which the image is three times as large as the image made with the regular lens. It is designed to secure a good sized image of subjects a considerable distance away, as, for instance, football players and baseball players from the side-lines, wild animal pictures, or in fact anything that cannot be approached for images of satisfying size.

By developing this new equipment the Eastman Kodak Company has shown great progress in furthering this fascinating pastime in the past year. Just as an army of amateur photographers arose more than three decades ago after the "Kodak" was developed, the legions of home movie enthusiasts have already begun to form.

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Carbons, and Other

Article by A. S. C. Member
Appears in April "American"

Again proving his proficiency as a writer as well as a cinematographer, Herford Tynes Cowling, A. S. C., steps forth in the April number of *The American Magazine* as the author of "Bringing the Ends of the Earth to Your Movie House."

The article presents interesting points in Cowling's experiences as a cinematographer in all parts of the globe, and is liberally illustrated with rare "stills" taken by the A. S. C. member himself under the wildest and most primitive conditions.

Cowling's career as a big-league writer includes a number of similar articles, one having appeared just recently in the *Asia* magazine. He returned last month from India where he filmed the coronation of Sir Hari Singh, having made the trip from Bombay to New York in the record time of 19 days. A "flash" carries the information that he made 20,000 feet of the coronation.

Carl Zeiss, Inc., Succeeds
Harold M. Bennett in New York

The photographic establishment of Harold M. Bennett was transferred on April 1st to Carl Zeiss, Inc., which assumes all the assets and liabilities of the Bennett organization.

The same staff will be kept at the headquarters as heretofore maintained by Bennett at 153 West 23rd Street, New York City. Under the new name, the policy of the firm will be continued as previously, there being no change contemplated particularly insofar as the dealer customers are concerned.

Carl Zeiss, Inc., will be the sole distributing agents in the United States for Carl Zeiss, Jena; Ica A. G., Dresden; R. Winkel, G. m. b. H., Goettingen, and Georg Wolf, G. m. b. H., Berlin.

Sol Polito, A. S. C., is cinematographer on "Senor Dare-Devil," which Al Rogell is directing. Polito has the same staff he has had on several recent Chas. R. Rogers productions, viz., Wm. A. Sickner as second, and Elwood Bridell as assistant and "still" photographer. "Senor Dare-Devil" stars Ken Maynard with Dorothy Devore and a feature cast, and is for First National release.

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Frank B. Good, A. S. C., Films
Special Film on Mexican Soil

Frank B. Good, A. S. C., has returned to Hollywood from Mexico and Lower California, where he photographed a special film which was given a place in the governmental archives of Abelardo L. Rodriguez, governor of Baja, California. Good worked in conjunction with Col. Alexandro Pelligren, personal aide to Gov. Rodriguez, and with M. H. Newman of Hollywood.

By special permission from the government, Good filmed the governor's magnificent summer palace as well as the schools, hospitals, and the hardware and fishing industries in various Mexican towns, including Tijuana, Mexicali and Ensenada. The A. S. C. member covered the entire assignment without the aid of artificial lights and obtained excellent results which he attributes in no small degree to the Du Pont-Pathe super-speed stock which he reports he used exclusively.

MacLean Joins Sennett
As Chief Cinematographer

Kenneth G. MacLean, A. S. C., has been appointed chief cinematographer at the Mack Sennett studios where he held a similar position a decade ago. MacLean's new position will call for not only cinematographic work, but will entail directorial activity in the matter of chase scenes and the like.

Since his original connection with Sennett, MacLean has been recognized as a specialist on cinematographic matters, having performed such duties on "The Sea Beast," "Ben Hur" and on "The Thief of Bagdad," on which he worked in co-operation with Arthur Edeson and Philip H. Whitman, both A. S. C. members.

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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3	3/4x1	3	75	43.00	47.00

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1	3/4x1	2	50	\$22.00	\$26.00
2	1 1/4x1 1/4	3	75	30.00	34.00

ILEX PARAGON ANASTIGMAT F:4.5

CAT. NO.	Covers at Full Aperture	EQUIV. FOCUS		Price in Barrel	Price in Focusing Mt.
		In.	MM.		
1	3/4x1	1 1/4	32	\$23.50	\$26.00

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Rochester, New York

(Continued from Page 6)

standing of which recently was "The Iron Horse." Among the Fox productions which Schneiderman has photographed lately are "The Roughneck," "Kentucky Pride," "Thank You," "The Golden Strain" and "The Johnstown Flood."

Secretary

Charles G. Clarke, the secretary, is chief cinematographer for George Melford, with whom he has photographed "Salomy Jane," "The Light that Failed," "Flaming Barriers," "A Dawn of Tomorrow," "Tiger Love," "The Top of the World," "Friendly Enemies," "Without Mercy," "Simon the Jester," "Rocking Moon" and "Whispering Smith."

Retiring Officers

With the exception of Clark and Wilky, the list of the retiring A. S. C. officers, who served during the closing year, numbers Homer A. Scott, president; Victor Milner, first vice president; Bert Glennon, treasurer, and John W. Boyle, secretary.

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and

American Cinematographer

may be had on a special one year's clubbing subscription at a very substantial saving. Separately, the two publications cost a total of \$4.50 per year. By virtue of the clubbing offer, both may be had for \$3.40.

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A.S.C. Member Dedicates New Office Building

Park J. Ries, A. S. C., and Brothers Open Photographic Headquarters in Hollywood

By Joe Blair

Formal Opening of Establishment Made Civic Event. Many Celebrities Participate.



View of New Ries Building, Erected by Park J. Ries and Brothers

One of the most brilliant openings Hollywood has witnessed recently took place Saturday evening, May 1, when Park J. Ries, A. S. C. member, opened the massive doors of the Ries building to the public for the first time.

Herbert Rawlinson, popular film star, officiated as the master of ceremonies and his pleasant personality and presentations won the admiration of the huge crowd which attended the affair.

Among the film stars introduced were: Priscilla Dean, Alice Calhoun, Natalie Kingston, Duane Thompson, Hallam Cooley, Ynez Seabury, Helen Lynch, June Marlowe, Etta Lee, Hazel Keener, Gloria Grey, Ena Gregory and many others.

Several impromptu acts of vaudeville artists, singers and dancers entertained the guests throughout the evening. Music by a well-known group of studio musicians furnished excellent renditions for those who

cared to dance following the completion of the program.

Harry Lucenay, owner of Pal, the wonder dog, gave an impromptu show which would have been a headliner on any Orpheum stage.

Merchants and businessmen of the neighborhood decorated the unoccupied rooms of the building in merchandise displays. Among the firms represented were Be Hannessy Art Studio, Arthur G. Loye Shoe Store, Hollywood Cap and Hat Company, Silver's Style Shop, William Stromberg Jewelry Store, Marsh Music Company and Brodsky's Fur Shop.

The Ries Building, located at Western and Virginia avenues, was built by Ries Brothers, Park J., Paul and Ray Ries, three cinematographers. Four years ago, each of these boys were employed in the various studios. May 1, 1922, exactly four years ago, they all resigned their positions to establish

(Continued on Page 25)



~
Park J. Ries,
A. S. C.
Member
Who
Opened
New
Office
Building
in
Hollywood.
~

Advertising Power

AMERICAN CINEMATOGRAPHER,
1219-22 GUARANTY BLDG.,
HOLLYWOOD, CALIF.

Gentlemen:

The enclosed draft for \$3.00 will renew my subscription to the *American Cinematographer* for another year, starting with the May issue.

Will you kindly forward the enclosed letter to the Chester Bennett Laboratories?

In closing, permit me to say that I enjoy the *American Cinematographer* very much, and have benefitted myself greatly through the advertising department, having ordered goods from several of your advertisers. The reading matter is unusually good.

Thanking you for past favors, I am,
Yours truly,

(Signed) M. B. FAIDLEY.

327 Butts Bldg.,
Wichita, Kansas.

(Continued from Page 24)

Portraiture Department to Be Started by Ries Brothers

The photographic activities of Ries Brothers will be augmented with the installation of a portrait studio in the new Ries Building, which was formally dedicated in Hollywood on the night of May 1st.

Special lighting apparatus has already been installed for the portrait work. In addition, the studio has been especially designed for adaptibility for daylight illumination.

Stills

As hertefore, Ries Brothers will continue production and commercial still work, for which they have outfitted a complete and modern still laboratory.

Rentals

They will also carry on with the rental of motion picture and still cameras, they having been pioneers in the rental business.

High-Speed Work

High-speed cinematographic work will be a part of their program, as has been the case in the past. Two Bell and Howell high speed outfits are a part of their equipment.

themselves in business and the thousands that stopped by to congratulate them Saturday night were only a small portion of the friends of the industry who have watched their progress and wish them well.

A very brilliant electrical display was furnished by Otto K. Olesen, well-known Hollywood illuminating expert. Mr. Olesen was on the job every minute and his men always had the lights in the right spot for the cinematographers "shooting" news reel film.

AMERICAN CINEMATOGRAPHER,
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RELEASES

March 22, 1926, to April 16, 1926

TITLE	PHOTOGRAPHED BY
Monte Carlo	William Daniels
The New Klondike	Alvin Wyckoff
Chip of the Flying U	Harry Neuman
The Seventh Bandit	Sol Polito, member A. S. C.
Yellow Fingers	Ernest Palmer, member A. S. C.
The Barrier	Ira Morgan, member A. S. C.
Desert Gold	C. Edgar Schoenbaum
The Dancer of Paris	Ernest Haller, member A. S. C.
Pleasures of the Rich	Not credited
The Lady from Hell	Not credited
The Escape	Jack Young
The New Champion	George Meehan, member A. S. C.
For Heaven's Sake	Walter Lundin, member A. S. C.
Kiki	Oliver Marsh
The Flaming Frontier	Virgil Miller
Sandy	R. J. Bergquist
Bride of the Storm	Nicholas Musuraca, member A. S. C.
The Crown of Lies	Bert Glennon, member A. S. C.
The Nut-Cracker	Jack Mackenzie
Red Dice	Lucien Andriot
Secret Orders	Roy Klaffki
Wild Oats Lane	David Kesson and Donald Keyes
The Other Woman's Story	Gilbert Warrenton, member A. S. C. , and Allen Siegler
Brooding Eyes	Not credited
The Wilderness Woman	Ernest Haller, member A. S. C.
The Night Cry	E. B. DuPar, member A. S. C.
Siberia	Glen MacWilliams, member A. S. C.
The Devil's Circus	Ben Reynolds
The Earth Woman	Milton Moore
That's My Baby	Jack MacKenzie
The Prince of Pilsen	James C. Van Trees, member A. S. C.
The Blind Goddess	Alfred Gilks, members A. S. C.

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 Benoit, Georges—with Metropolitan Productions, Metropolitan Studios.
 Boyle, John W.—with First National Productions, United Studios.
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 Dubray, Joseph A.—
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 Fildew, Wm.—
 Fischbeck, Harry A.—with D. W. Griffith, Famous Players Lasky, New York City.
 Fisher, Ross G.—with Fred Thomson, F. B. O. Studios.
 Freid, Abe—with Fox Studio.
 Gaudio, Gaetano—with Metro-Goldwyn-Mayer Studios.
 Glikk, Alfred—with Famous Players-Lasky.
 Glennon, Bert—with Famous Players-Lasky.
 Good, Frank B.—
 Gray, King D.—
 Griffin, Walter L.—with David Hartford Productions.
 Guissart, Rene—Paris, France.
 Haller, Ernest—with Robert Kane Prods., New York City.
 Helmerl, Alois G.—
 Jackman, Floyd—Fred W. Jackman Prods.
 Jackman, Fred W.—directing Fred W. Jackman Prods.
 Jennings, J. D.—with Metropolitan Studios.
 Koenekamp, Hans F.—with Larry Semon.
 Kull, Edward—with Universal.
 Kurrie, Robert—with Edwin Carewe, United Studios.
 Landers, Sam—
 Lockwood, J. R.—
 Lundin, Walter—with Harold Lloyd Productions, Metropolitan Studios.
 Lyons, Reginald—with Buck Jones, Fox Studio.
 Marshall, Wm.—with Famous Players-Lasky.
 McCoid, T. D.—with First National, United studios.
 McGill, Barney—with Fox Studios.
 MacLean, Kenneth G.—with Warner Bros.
 MacWilliams, Glen—with Fox Studio.
 Meehan, George—with Columbia Pictures.
 Milner, Victor—with Famous Players-Lasky.
 Morgan, Ira H.—with Marion Davies, Cosmopolitan, Metro-Goldwyn-Mayer Studios.
 Musuraca, Nicholas—with Warner Brothers.
 Norton, Stephen S.—F. B. O. Studios.
 Palmer, Ernest S.—with Fox Studio.
 Perry, Harry—with Famous Players-Lasky.
 Perry, Paul P.—with Universal.
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 Roos, Len H.—with Alexander Film Co., Englewood, Denver, Colo.
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 Short, Don—
 Smith, Steve, Jr.—
 Steene, E. Burton—
 Stumar, Charles—with Universal, New York City.
 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 First National, New York City.
 Van Trees, James C.—with First National Productions, United Studios.
 Warrenton, Gilbert—with Universal.
 Wenstrom, Harold—with Corinne Griffith Productions.
 Whitman, Philip H.—with Mack Sennett Studios, Scenario Dept.
 Wilky, L. Guy—
 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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American Cinematographer

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This Month



**A Mid-Year Cinematographic
Review—By Daniel B. Clark, A. S. C.**

**Trick Photography Methods
Summarized — By Carl Gregory**

**Effect of Desensitizers in Devel-
opment — By M. L. Dundon and
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American Cinematographer

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A. S. C. ROSTER	

An educational and instructive publication, espousing progress and art in motion picture photography.

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Amateur Cinematography

"Amateur" Camera is Carried to North Pole

¶ *Byrd and Amundsen Expeditions Take Bell and Howell Product over Pole; Motion Picture Records Made with Instrument.*

Another triumph for the "amateur" model of motion picture camera was scored when the "Eyemo" was carried to and over the North Pole by the expeditions headed respectively by Lt. Commander Richard Byrd and by Raold Amundsen on the dirigible, "Norge."

Historical

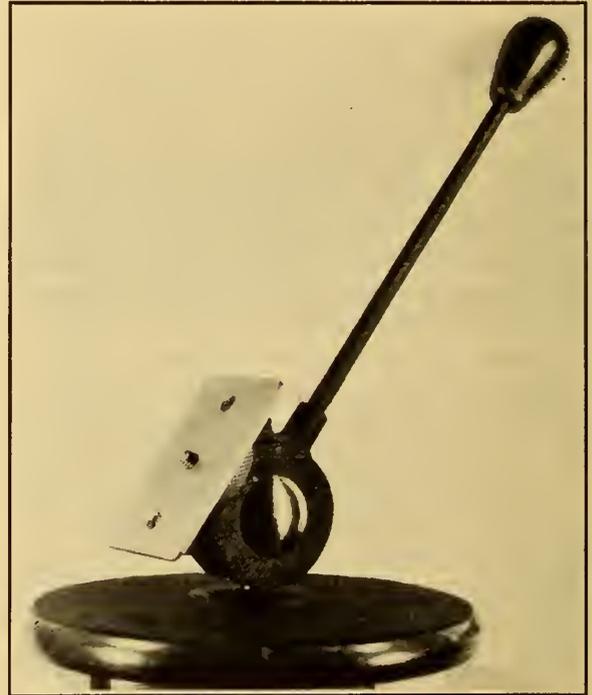
Newspapers throughout the country carried dispatches of motion pictures being taken of the North Pole on the occasion of the second time it was ever visited by a human being. The event is regarded as one of the most historical in the annals of the manufacture of motion picture equipment.

Similarly, the filming of the eruption of the Mauna Loa was done through the medium of the "Eyemo" which, it is stated, rendered possible International Newsreel's "scoop" on this happening.

Expeditions

The "Eyemo" type of camera has been widely adopted for use in various expeditions, including the Third Asiatic Expedition, the Bering Sea Expedition, the Speejax Expedition, the Smithsonian-Chrysler Expedition to Africa, the Wilkins North

New Tripod Head



Tripod Head for Small Camera

¶ *Fred Hoefner, of Hollywood, Perfects and Markets Device Especially Adapted to Amateur Motion Picture and Still Cameras; Larger Model for Professional Cameras to Be Forthcoming.*

A new tripod head, adapted for the use of small amateur motion picture and still cameras, is announced in Hollywood by Fred Hoefner, precision mechanic, who is manufacturing the product under the patents of William Maulsby Thomas.

Wide Range

Hoefner's creation is called the "True-ball Tripod Pole Expedition; and the African and Mongolian Expedition of the American Museum of Natural History.

Head." It is rotated on a true ball, and after being set up level can be tilted in a 90 degree arc and can be rotated 360 degrees.

The device allows the camera to follow any object, at the same time remaining level.

Larger Model

It is said that this small model is to be supplemented by a larger one for professional size motion picture cameras. The professional model will have an independent tilt and pan.

Cinematographer as Economy Unit in Production

Responsible Camera Artist
Saves Salary *in Course of*
One Picture



Great Economies Effected
through Progress and Ef-
iciency of Camera Calling

(The following interview with Daniel B. Clark, president of the American Society of Cinematographers, was written by the editor of this publication for the studio section of the EXHIBITORS HERALD:)

The cinematographer is in a keystone post in the matter of effecting economy in cost of motion picture production, according to Daniel B. Clark, president of the American Society of Cinematographers.

Saves Salary

"The cinematographer," Clark states, "ordinarily saves his salary many times during the course of the average production. This may appear to be a novel assertion; nevertheless, it is true.

Great Economy

"In the matter of illumination alone, careful regulation by him as to how much light is used on each set, thereby employing only the light actually needed and avoiding over-illumination, is a means of saving hundreds of dollars on a feature production.

Promptitude

"The company," Clark continued, "rarely has to wait for the cinematographer to be

ready to shoot. He is 'set up,' with all his lights arranged in proper positions, and waiting for the call, 'Camera,' when the director and the company are ready for action. If it were otherwise, it would mean, especially on sets with a great many extra people, the piling up of heavy overhead, due to the loss of time—for, need it be said that nothing can be done until the camera is ready to photograph? The cinematographer's alacrity in such matters is the result of the maximum efficiency to which he has reduced his work. Certainly a complete mastery of his subject is required for him, in the hurry and bustle of the set, to give commands as to where this light or that light is to be placed, all of which must be done in a few moment's time. What would have been the case if, in the beginning of the business, the procedure would have been established that a couple of hours or more would have been necessary for experimenting with and checking each array of lights, to determine its correctness?

Production Cost Cut

"And so it is in the run of cinematographic improvements generally. The cine-

matographer has been quick to bring about or encourage such improvements, so that little corners, however imperceptible, are continually being cut in production costs. A faster or a more adaptable lens is immediately adopted, a new effect in miniature is worked out and so on—and hundreds of dollars and, in some instances, even thousands of dollars are saved for the producer. Thus, the expertness of the cinematographer brought the glass shot from the realm of probability to the plane of fact—and what producer doesn't realize the savings effected by this form of economy.

"These," the A. S. C. president concluded, "are but a few of the innumerable cases of cinematographic economies. Some rarely if ever come to executive attention, while others, because of their magnitude, command respect—as, for instance, the case in which one member of the A. S. C., is saving, it is reported, his company the sum of \$40,000 by having eliminated, in a big production now being made, the necessity of countless night shots—and previously it had been thought that the nights of photographing were an indispensable evil in the making of this particular picture."

Effect of Desensitizers in Development

Part Two of Investigations
on Photographic Develop-
ers Is Released

By **M. L. Dundon**
and **J. I. Crabtree**
Of the *Eastman Research*
Laboratory.

Paper Was Read at Spring
Meeting of Society of Mo-
tion Picture Engineers

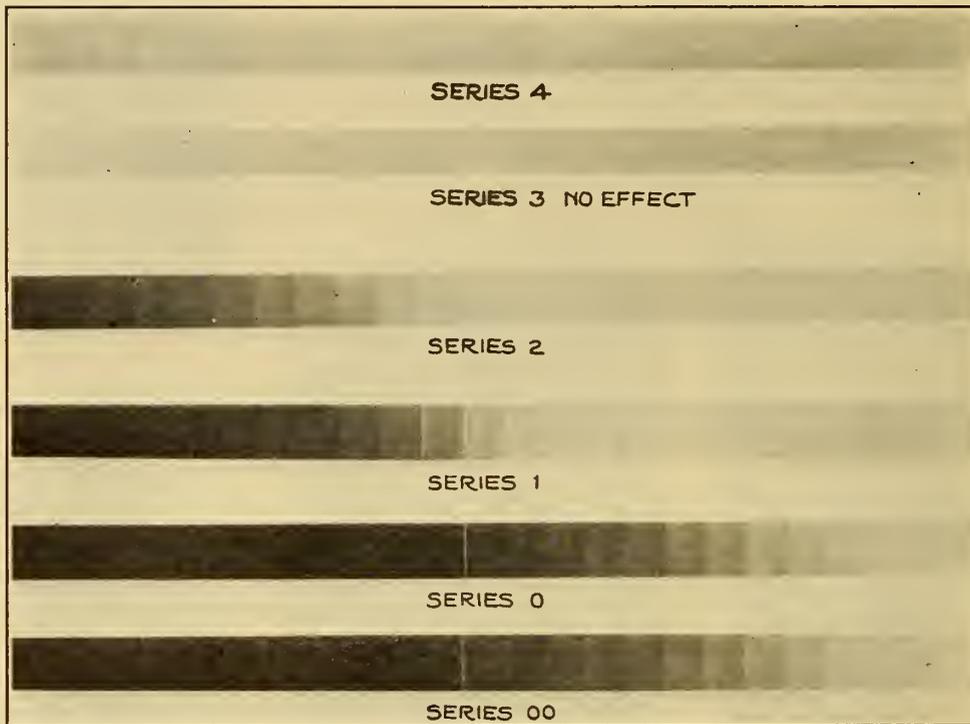


Figure Two—Relative photographic effect of Wratten safelights on Panchromatic film.

I. INTRODUCTION.

The inspection of film during development is often desirable even though the time and temperature method can be used to produce negatives of a definite development contrast or gamma. Especially in the case of motion picture film, where only one positive material is used for printing all scenes, the production of negatives of fixed density contrast is desirable. In order to obtain this result the time of development must be varied according to the contrast of the original subject. Also, in ordinary photography, freedom of inspection during development may be of great assistance in obtaining the particular results desired.

II. METHODS OF SECURING VISIBILITY DURING DEVELOPMENT.

The greatest possible visibility during development may be obtained by using an efficient safelight and by desensitizing the film.

1. Suitable Choice of Safelight.

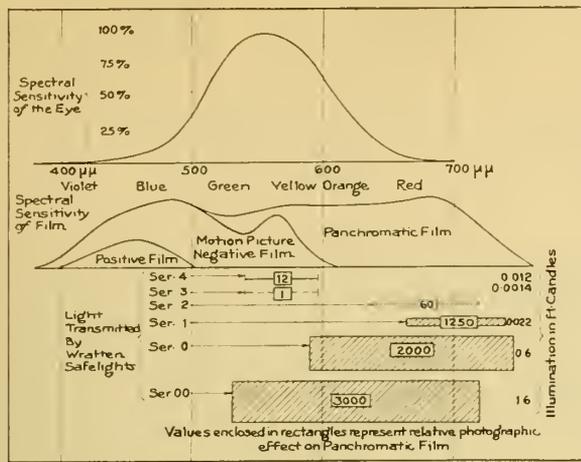
In selecting an efficient safelight there are two factors to consider, (a) the sensitivity of the eye to light of different colors and wavelength, and (b) the color sensi-

tiveness of the emulsion used. Mees and Baker¹ have explained this matter clearly and defined safelight efficiency as the product of the visual intensity of the light transmitted multiplied by its safety for a given emulsion. The relation of these factors is represented graphically in Fig. 1 where curves showing the special sensitivity of the eye and the special sensitivity of typical photographic emulsions are plotted on the same scale of wavelengths as the transmission of the Wratten safelights. From the upper curve² showing the spectral sensitivity of the eye it is evident that of a given intensity of radiation, the human eye is much more sensitive to green or yellow than to red or blue light. In fact the average point of maximum visibility for a large number of observers was at 560 mμ.

Ordinary photographic emulsions, on the other hand, are sensitive only to the blue and violet, but when made orthochromatic they are sensitive also to green, and when panchromatic the sensitivity includes the red and is ex-

1. C. E. K. Mees and J. K. Baker, "A Measurement of the Efficiency of Dark Room Filters," *Phot. Jour.* **47**, 267, (1907).

2. K. S. Gibson and E. P. T. Tyndall, "Visibility of Radiant Energy," *Sci. Paper, Bur. Standards*, No. 475.



Above: Figure One. Curves showing relation between visual and photographic intensity of light transmitted by Wratten safelights.

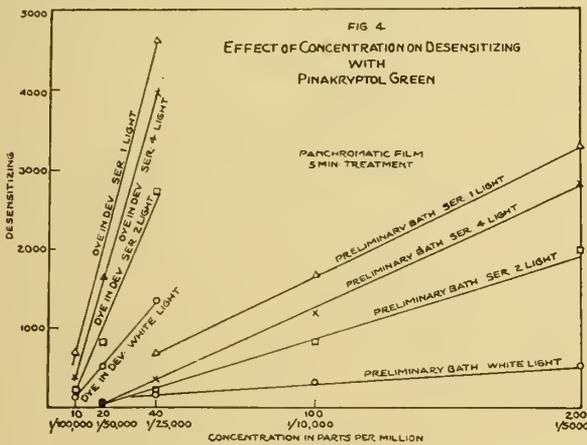


Figure Four

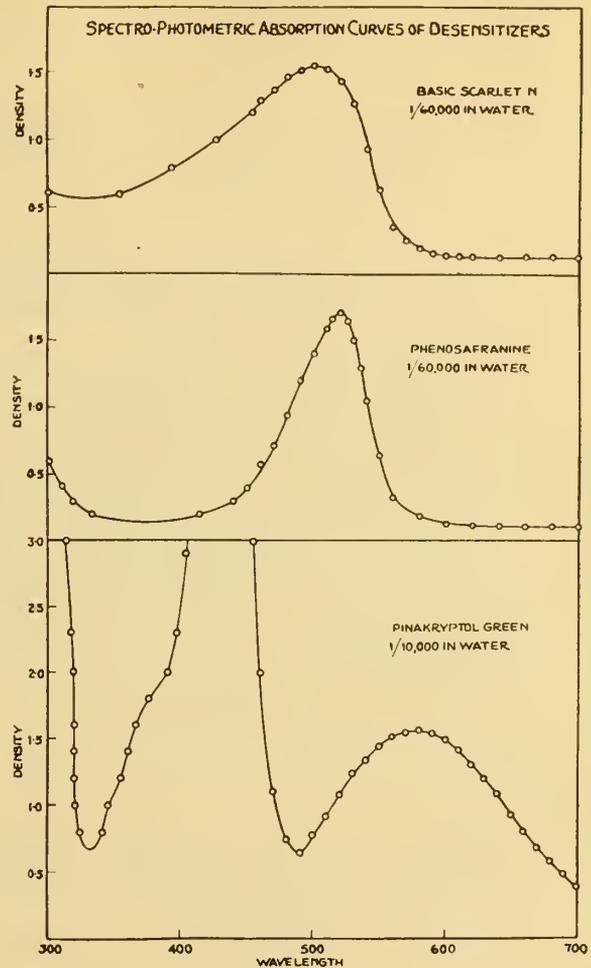


Figure Three

tended throughout the visible spectrum. The light transmitted by the Wratten Safelight Filters is represented in this diagram by blocks of which the extent of the base line corresponds to the wavelengths transmitted. The area, and the accompanying number, represent the relative photographic effectiveness of the light. This was measured by the effect produced on a panchromatic film when exposed to the different safelights for the same time through a step tablet (See Fig. 2). On the right are given the values in foot candles for the illumination given by the safelights and measured at a distance of 1 foot (30 cm.) when used in a Wratten safelight lamp containing a 25 W. bulb. The measurements were made with a Macbeth illuminometer. From this diagram it is evident that the yellowish green safelight, Series 3, is the most efficient for panchromatic materials, while for emulsions which are not red sensitive the red safelights Series 1 or 2 are better because of the relative insensitivity of the film to the light which they transmit. The extent to which these relations are modified by the use of desensitizers in development will be indicated later.

In Fig. 2 is shown the method by which the relative photographic effect of the light transmitted by the different safelights was measured. A step tablet having a density range of 3.4 was placed over a sheet of Commercial Panchromatic Film. Narrow strips were then exposed to each of the different safelights for the same time and in the same manner, and the whole sheet developed.

From the densities of the step tablet corresponding in each case to the first visible image, the relative exposures were calculated.

The limits of safety in exposing Eastman Motion Picture Negative and Commercial Panchromatic Film to the various safelights is shown in Table I. The fog density produced with normal development by a ten seconds exposure to the safelight at a distance of one foot is given except where no effect was obtained in this time. In such cases the time required to produce a visible fog is recorded.

TABLE I
COMPARATIVE SAFETY OF UNTREATED FILM TO WRATTEN SAFELIGHTS

Exposure at 30 cm. (1 ft.) from 8" x 10" Wratten Safelight Lamp Containing 25 W. Bulb.
Relative Fog Density Produced by 10 seconds Exposure.

Safelight.	Film.	Panchromatic Film.	Motion Picture Negative Film.
Series 00	2.2		1.9
" 0	2.0		1.2
" 1	1.5		Fog in 1 minute
" 2	1.5		Fog in 2 minutes
" 3	0.2		Fog in 15 seconds
" 4	1.0		0.8

From Table I it is evident that sufficient light cannot be used with panchromatic film without desensitizing
(Continued on Page 18)

A Mid-Year Cinematographic Review

President of A. S. C. Writes
on Important Advances Dur-
ing Last Twelve Months

By
Daniel B. Clarke
A. S. C.

Takes Stock of Progressive
Steps since Last 'Directors'
Number' of Film Daily

(The following story was written by Daniel B. Clark, president of the American Society of Cinematographers, for the "Directors' Number" of the Film Daily.)

It is an unusual twelvemonth indeed that does not bring about an abundant measure of progress in the world of cinematography. Such progress is stimulated not only by the interest of the cinematographer himself in his work, but is substantially brought about by the wishes and demands of the director who is an exponent of things progressive in the field of motion photography.

Director's Encouragement

A director may want a new bit of treatment, either for a novel result or for the same result produced in a different fashion, and it remains for the cinematographer to fill the order. Thus have many improvements been introduced in cinematography.

The year that has passed since the appearance of the last "Directors' Number" of the Film Daily has contributed its share toward the general photographic advancement of the industry, records of the American Society of Cinematographers show.

Small Cameras

Unusual activity has been manifested in the matter of small motion picture cameras of the "amateur" variety. While these instruments have been designed primarily for the wide usage of the novice, they have found their way to the professional motion picture studios. Naturally, the small cameras which do not use the standard size of film are not so adaptable for professional use where the standard negative is imperative. But a portable camera such as the "Eyemo," which is a development of the Bell and Howell company, has been widely adopted for use among recognized cinematographers. Where heretofore, on some precipitous location or in exceedingly close quarters, the director had to forego his desire for an intimate shot of the action because of the size of the regular professional camera, the cinematographer now utilizes his small portable camera with results that are the joy of all concerned.

A. S. C. Member's Invention

Another development which is meeting with marked interest among cinematographers is the invention of John W. Boyle, a member of the American Society of Cinematographers. Mr. Boyle has created an adapter whereby a regular standard camera head may be mounted, in a vertical tandem position, atop a camera of the Akeley type, the two being operated at the same time. The arrangement makes possible a "close-up" and "long-shot" of the same subject of action—a matter which has intrigued the film production imagination for some time.

"Talking" Films

Since the Edison days in motion pictures, "talking" films have commanded perennial attention. Aside from the continuation of experiments on the already acknowledged species of cinema in this line, the Triergon method was announced during the past year in this country, preceded, according to the statistics which were cited, by more or less exhaustive trial exhibitions in Germany. The most recent contribution to this subject is the activity of Warner Brothers. E. B. Du Par, a member of the A. S. C. and a cinematographer on the staff of the Warner studios, is at present in the East working on the latter invention.

The matter of embodying speed into the negative through fast lenses and film has met with steady advancement during the past year. Panchromatic film is more popular than ever, and an "infra-red" stock, treated by Technicolor, has been used for special purposes. The actual taking speed of motion pictures, however, remains at a basis of sixty feet per minute, as re-affirmed by the American Society of Cinematographers and the Society of Motion Picture Engineers.

Color

In the color division of cinematography, Technicolor remains in the van. "The Black Pirate" is generally heralded as the best that has been done by this method. There seems to be little question in Hollywood that a new vista was opened in this work by virtue of the lighting and other methods employed by Henry Sharp, who was chief cinematographer on the Douglas Fairbanks production.

Blue, red, yellow, green

In photographing brilliant costumes, colorful sets, vivid landscapes Eastman Panchromatic Negative enables you to keep *all* colors—blue, red, yellow, green—in their correct relationship in black and white tones.

For photographing such subjects Eastman Panchromatic Negative is essential; for everyday use in the studio and on location it is invaluable.

Write for the booklet "Eastman Panchromatic Negative Film for Motion Pictures". Properties, uses, handling, development of the film are described.

Motion Picture Film Department

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EYEMO "SCOOPS" NORTH

Airship and Dirigible Both Equipped



*EYEMO Camera carried by Ltd.
Commander Byrd on
Polar Trip.*

Another "Scoop" for EYEMO

Hawaiian Volcanic Disaster Filmed

All the world has read of the outbreak on April 10 of the Volcanic Eruption on the top of Mauna Loa in South Koa, and of the havoc it caused in the village of Hoopuloa which was completely destroyed by the molten lava flow.

Following the eruption word was received that the entire disaster had been "shot" with two EYEMO Standard Automatic Cameras—the only motion pictures taken—and that the films were being shown by the International Newsreel Company on the public screens of the world.

The filming of the Volcanic disaster was a tremendous scoop for the International Newsreel Company—one of the biggest in the history of their business. EYEMO made this scoop possible.

Still another "beat" for EYEMO was the filming of the ill fated "Antinoe" which was shot from the deck of the rescue ship President Roosevelt by an EYEMO Cinematographer.

Many Famous Expeditions Equipped with EYEMO

Below are some of the many famous expeditions now using the EYEMO Standard Automatic Camera:

- The Third Asiatic Expedition
- Byrd Polar Expedition
- Amundsen-Ellsworth North Pole Expedition
- Smithsonian-Chrysler Expedition to Africa
- Wilkins North Pole Expedition—with Mr. Rossman
- United States Dept. of Interior, Geological Survey (Alaskan)
- African and Mongolian Expedition of the American Museum of Natural History
- Speejax Expedition
- Bering Sea Expedition

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STANDARD

Automatic
STANDARD

Cinematograph

Designed for

Write for

A descriptive folder
the EYEMO Stan
detail will be mailed
folder, address



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THE NORTH POLE EXPEDITIONS

with B & H Standard Automatic Camera



Byrd



Ellsworth



Dirigible Norge Equipped with Two EYEMO Cameras.



Amundsen

EYEMO Visits the Pole with Byrd and Amundsen

When Lt. Com. Byrd, who guided the now famous airplane "Josephine Ford," left on his trip to circle the North Pole, he carried with him an EYEMO Standard Automatic Motion Picture Camera. He appreciated that a *motion picture* record was necessary to make the trip complete.

And now comes the word that Amundsen of the Amundsen and Ellsworth Polar Expedition, who closely followed Byrd, took along *two* of these standard automatic cameras. Tremendous scoops for EYEMO!

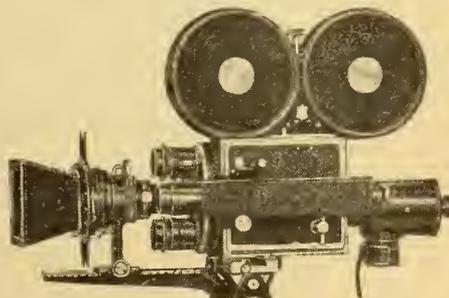
Chosen Because of Its Compactness

Both of these famous expeditions knew the advantages of compactness in a motion picture camera for the trip. So they chose EYEMO—the light weight, quick and ready standard film camera designed particularly for field and stunt use. Flexibility was another requirement. With EYEMO they had the photographic flexibility of a professional Bell & Howell Studio Model. And the camera had to be *dependable* for such an important trip. EYEMO'S dependability, they considered, was established by the 19-year reputation for quality of the company building and backing it.

As with Bell & Howell Professional Cameras, which are used almost exclusively by the foremost producers of the world, when there is an important picture to be taken, EYEMO Standard Automatic Camera is selected—indisputable proof of its superiority!

The Pioneer, and The Standard by which all others are compared.

Bell & Howell Professional Cameras and equipment are used almost exclusively by the foremost motion picture producers of the world.



AS THE EYE SEES
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REGISTERED

Automatic
PROFESSIONAL
Camera
and Stunt Use

temperature
ating and describing
Automatic Camera in
request. Ask for this

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Established 1907

"Trick" Photography Methods Summarized

(Continued from Page 9)

spot light photographed through a copper wire screen to give the shimmering rays which are shown in the conventional paintings representing this sacred history. The massive walls of Fort Schuyler furnished the walls of the City of Jerusalem and the Wise Men followed the Star on the backs of camels in the Bronx Zoo. Photographs of the pyramids were double exposed above a location on a sandy beach for the sojourn in Egypt and the pillared portico of a rich patent medicine manufacturers' home served as the architecture of the Roman Court.

Great Demand

Nearly seven hundred prints from the original and two dupe negatives which had to be made to supply the demand were sold and some of the prints are still listed by educational exchanges. Orders were still coming in when the negatives were destroyed in a disastrous studio fire.

What Comedies Brought

Since the days of these crude pictures trick photography has waned and then waxed strong again. For a long time it was the step child of the legitimate producers. The comedy producers, however, have always regarded it as one of their strongest allies. It is, in fact, mainly due to the patient research of serious workers on the slap-stick lots that the credit for the present perfection of trick effects is largely due.

Experts

Far sighted producers have awakened to the money savings that may be affected by the use of trick photography and now all the larger companies retain the services of high salaried experts who are specialists in the business of artistic photographic trickery.

Stringent Requirements

Trick photography is a trick profession. It requires the arts of a trained magician with the added requirement that the spectator shall not even suspect that he is being deluded. Magicians must be familiar with psychology, with intricate mechanics, with higher mathematics, with physics, with art, with myriads of complicated details that must be made to dovetail to the fraction of a second. The craft of the trick cinematographer is just as exacting and calls for an even wider application of special and practical knowledge.

It is not my intention to give in this paper any detailed explanation of trick photography. The subject is far too broad to be covered, even in a large volume. Every piece of trick photography is a separate problem and, just as the combinations of the alphabet are practically infinite, so are the various combinations that may be arranged in doing work of this character.

Trick photography in cinematography is an analysis of motion in two or more directions. Simple cine analysis of motion is the series of frames or pictures the successive units of which represent phases of action at intervals of one sixteenth of a second. Most cine tricks require that two or more of these analyses be synchronized on one film and at the same time matched or blended with one another so that the line of demarcation between the two or more combinations be imperceptible to the eye even after the image is enlarged several thousand times on the theater screen.

In cases where the recording or taking interval of



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the combined components is the customary sixteen per second in each case, then the combination is not such a complicated problem as the written explanation makes it appear to be. It is very intricate, however, when the component members of the combination have to be taken at different rates of speed. In "The Lost World" there were many scenes where the taking of the action of the prehistoric monsters required weeks and months of exposures made at comparatively long and irregular intervals. These stop motion exposures had to be synchronized and combined with the action of human characters whose movements, photographed at regular speed, occurred in a few seconds so that the composite result appeared to be simultaneous action. Not only was it necessary to synchronize the action but it was also necessary to reverse the apparent size of the objects so that the monsters, which were in reality miniature figures, seemed to be gigantic in comparison to the human actors.

Results

Trick photography thus does two tremendously important things for the industry; it renders possible the use of scenes and effects hitherto impossible of presentation and reduces enormously the cost of building elaborate sets. It also seems safe to prophesy that in the near future it will also eliminate the necessity for many exterior locations; particularly those to distant points where time and transportation are a large factor in production expense.

Let me outline roughly into a sort of general classification the various methods by which the trick photographer builds up his effects:

Basis

First, we have the basic standard of straight cinematography which consists of a series of frames or pictures taken at the approximate speed of sixteen exposures per second.

High Speed, Slow Motion

Second, high speed or slow motion photography in which the taking rate is considerably increased. For the laws governing the taking of miniatures by high speed photography to stimulate action in the tempo of natural sized objects I refer you to the very excellent paper by J. A. Ball, entitled "Theory of Mechanical Miniatures in Cinematography," presented before the Society of Motion Picture Engineers at Roscoe, New York, May, 1924, and published in the Transactions of the Society.

Varied Taking Speeds

Third, time condensation or decreasing the taking speed to such an extent that movements which take place slowly and over so long a period of time as to be imperceptible to the human eye are made to appear to occur in a few seconds. This method is commonly used for showing the growth of plants, the germination of seeds, the erection or demolition of structures, etc. Slow cranking at slightly diminished speed is used to increase the speed of actors movements for comedy effects and to speed up action in fights, races, and dramatic climaxes.

Animated

Fourth, trick crank or one picture turn. This is closely related to time condensation. The trick crank shaft is the one usually used for making time condensation exposures. The name "trick crank" comes down from the early days of cinematography because the single exposure shaft was often employed in making many of

(Continued on Page 20)

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DESENSITIZERS

(Continued from Page 11)

to inspect it satisfactorily during development, even though the sensitivity may be slightly decreased when wet with developer. Motion picture negative film, on the other hand can be inspected quite freely with a red light such as is given by the Series 1 safelight.

2. Desensitizing.

A. Purpose of a Desensitizer.

A photographic desensitizer is a substance which has the property of greatly diminishing the sensitivity of a photographic emulsion toward light action. To be of practical use in development it must not affect a latent image already present nor interfere with its subsequent development.

The most important reasons for using a desensitizer are: (a) to permit the inspection of panchromatic film during development, (b) to give much greater freedom in the use of safelights during the development of ordinary film, and (c) to prevent serial or oxidation fog.

In a previous communication³ it has been shown that the presence of a desensitizer in a concentration of 1-500,000 or even 1-1,000,000 in a developer which has a tendency to produce aerial fog, is sufficient to prevent such fogging action. This is of considerable value in the machine development of motion picture film, and for such use it has been found possible, by adding one part in a hundred thousand of phenosafranine, to use a dilute elon-hydroquinone developer with much less sulphite than would otherwise be necessary.

It has been stated in the literature⁴ that in some cases a desensitizer also diminishes ordinary development or tank fog. This effect may be a decreased oxidation fog within the developer, but with certain developers tank fog is apparently diminished. This is discussed more fully in another section.

In the present paper it is proposed to show the extent to which the use of a typical desensitizer will permit greater safelight illumination during development.

B. Methods of Use.

Desensitizing dyes are used either as a preliminary bath or in the developer itself. As a preliminary bath a concentration of 1-5000 or 1-10,000 is commonly used, and the film is dipped in the desensitizing solution for one or two minutes just previous to development. This operation must, of course, be carried out with proper safelights or in the dark.

When used in the developer the concentration usually recommended is 1-25,000 or less and the film is left in the developer for one or two minutes before exposing it to a safelight stronger than usual. In most cases the same concentration of dye desensitizes much more powerfully in the developer than in a separate water solution.⁵

C. Considerations in Selecting a Desensitizer.

Many dyes and other substances are known which greatly reduce the sensitivity of emulsions. However, in finding a substance suitable for practical use there are many factors involved, the most important of which will be considered briefly.

1. Desensitizing Power.

Desensitizing power is, of course, the first consideration. With desensitizers now known the speed of an ordinary fast emulsion to white light can be reduced several hundred times, while the decrease in sensitivity of panchromatic emulsions to certain safelights may reach several thousand times. Different desensitizers vary considerably in their ability to decrease the relative color sensitivity of panchromatic materials, and this variation also depends on the particular dyes used to give color sensitivity to the emulsion.

2. Effect on the Latent Image.

To be of practical use a desensitizer must not remove to any extent a latent image already present on a film within a reasonable length of time. Most desensitizing dyes will destroy a latent image if the desensitized film is exposed to strong red light, and Carroll⁶ has reported that pinakryptol green will destroy a latent light image even in the dark if allowed to stand several hours before development. This fact has been confirmed in this investigation.

3. Effect on Development.

Desensitizing dyes generally decrease the induction period of certain developing agents such as hydroquinone and pyro and so may change the Watkins factor of a developer. Some desensitizers retard development. It is, of course, desirable that the addition of a desensitizer shall not affect the time of development nor change the shape of the characteristic curve of the developed image.

4. Fogging Action.

Some of the most powerful desensitizing substances known, such as methylene blue, have an independent fogging action which entirely prevents their use for this purpose. No appreciable fogging action can be tolerated, although certain commercial desensitizers have a slight tendency in this direction.

5. Staining Action.

Some of the desensitizers in use stain not only the gelatin of the film and the trays in a very disagreeable manner, but also the fingers of the person who uses them. The stain is most persistent in the hardened gelatin on the back of a non-curling film. A desensitizer which does not stain gelatin or which washes out very easily is desirable.

The color or absorption region of the stain produced is also of importance because if it does not transmit blue light the printing time of a stained negative may be affected.

6. Color in Relation to Safelight.

If desensitized films are to be inspected by transmitted light during development the color of the desensitizer with which a film is stained must be such that it does not absorb the light transmitted by the safelight. Otherwise the whole film will appear fogged or too dense to examine satisfactorily. For instance, phenosafranine appears black in a green light and colorless in a red light.

7. Solubility in a Developer.

The concentration in which desensitizers can be added to a developer is often limited by the fact that they form an insoluble precipitate with certain developing agents, especially hydroquinone. In extreme cases a precipitate may form in an emulsion when it is put into a developer after a preliminary desensitizing bath.

3. Merle L. Dundon and J. I. Crabtree, "Investigations on Photographic Developers. II, The Fogging Properties of Developers," *Amer. Phot.* **18**, 742, (1924), *Rev. Franc. Phot.* **5**, 320, (1924), *Sci. Ind. Phot.* **5**, 1, (1925), *B. J. Phot.* **71**, 701, 719, (1924).

4. A. E. Amor, "The Prevention of Tank Fog," *B. J. Phot.* **72**, 183, (1925).

5. A. Huble, "Contributions to Development in Bright Light," *Phot. Rund.* **62**, 114, (1925).

6. B. H. Carroll, "Solarization and Photographic Reversal by Desensitizers," *J. Phys. Chem.* **29**, 693, (1925).

8. *Stability.*

Some desensitizers which are very effective as a preliminary bath are destroyed immediately by the sulphite, if added to a developer. The stability in a developer and the keeping property of the water solution when exposed to light and air are important factors.

9. *Speed of Action.*

Especially when a desensitizer is used in a developer the speed of the desensitization is important. Luppocramer⁷ has pointed out that while Rhoduline Red G is as strong a desensitizer as phenosafranine it takes twice as long to produce the same effect. This is probably due to a slower rate of diffusion through the gelatine.

10. *Availability and Cost.*

For general use it is obvious that a substance must be available at a reasonable price.

III. COMPARATIVE PROPERTIES OF DIFFERENT COMMERCIAL DESENSITIZERS

1. *Phenosafranine.*

The first important member of this series is phenosafranine of which the desensitizing action was discovered by Luppocramer and is described fully in his book on the Safranine Process.⁸

Many of the safranine dyes have a similar desensitizing action, but considering all its properties Luppocramer considered phenosafranine to be the most generally useful of those which he examined. Phenosafranine has a strong desensitizing action, does not give trouble from fog, and is a well known and easily obtainable substance. It is perfectly transparent in a bright red light but has a dark appearance in a green light. It is less effective in desensitizing panchromatic materials such as Eastman Commercial Panchromatic Film than is pinakryptol green. When used with an ordinary plate such as Eastman 40 it extends the spectral sensitivity through the green giving a maximum at 580 mm. Phenosafranine forms a precipitate in developers containing hydroquinone to about the same extent as does pinakryptol green but if added with care can be used in most elon-hydroquinone developers. In pyro developers it is distinctly less soluble than is pinakryptol green.

The most serious objection to the use of phenosafranine is the intense stain which it imparts to the film, trays, and hands. When a film is thoroughly fixed in an acid fixing bath most of the dye washes out quite readily. However, any residual stain left in a negative has no effect on its printing time as phenosafranine transmits the violet light to which positive emulsions are most sensitive. When used in small concentrations to prevent aerial fog its staining action is not appreciable.

In Fig. 3 is shown the absorption spectrum of phenosafranine, in relation to that of pinakryptol green and basic scarlet N.

2. *Pinasafrol.*

Pinasafrol is stated by Wall⁹ to be safranine J IV or tetra methyl safranine. It is said to be a slightly stronger desensitizer^{8, 10, 11} than phenosafranine but was stated by Luppocramer to be less desirable for prac-

(Continued on Page 23)

7. Luppocramer, "Protective Dyes in Desensitizing," Phot. Ind. p. 187, 1925.

8. Luppocramer, "Negative Development by Bright Light, The Safranine Process" 2nd Edition, Leipzig, 1922.

9. E. J. Wall, "History of Three Color Photography," Boston, 1925, p. 300. This book also contains a very complete bibliography on desensitizing.

10. Luppocramer, "The Best Desensitizer," Phot. Ind., 1925, p. 1356.

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(Continued from Page 17)

the trick effects mentioned in the first paragraphs of this paper.

Animated cartoons and diagrams are made by means of the trick crank and are, of course, trick photography. Nevertheless, in cine nomenclature animated diagrams and cartoons are a classification separate from that of trick photography and, while most of the devices used by the animated cartoonist are also used in trick photography, the subject is too large to be treated in this paper. To those interested in the subject I refer them to the very able volume by E. G. Lutz, entitled "Animated Cartoons," published by Scribners.

The difference in time condensation and trick crank work is in the interval of the timing. In time condensation the interval is predetermined by the length of time in which it is expedient to show the resulting film. In trick crank work the successive phases of movement are artificially produced between exposure intervals so that inanimate objects may appear to be endowed with automatic powers. The time of exposure interval is therefore dependent on the time necessary to arrange the subjects into the successive phases of the simulated action.

Every move of every joint and limb of the prehistoric animals in "The Lost World" had to be thought out beforehand and a calculation of the amount of movement which would occur in each succeeding phase of one sixteenth of a second if the model were an actual animal with the bulk of several elephants.

Reverse Order

Fifth, reverse camera, or the showing of the series pictures of a motion analysis in reverse order. The effects produced by this method are too well known to describe them.

Mattes

Sixth, simple devices or attachments used mainly to alter the size and shape of the screen opening. These consist of masks or mattes of opaque or translucent material which either vignette the edges of the picture or produce silhouetted openings to enhance the illusion of scenes which are supposed to be observed through an archway, a keyhole, a telescope, binoculars or other familiar orifice. Previous papers presented before the Society describe these devices in detail.

Stop Motion

Seventh, stop camera and substitute which is one of the oldest and most familiar of trick devices. It was and is used mainly for magic appearances and disappearances. It consists in stopping the action and camera simultaneously and placing or removing the objects which are to appear or disappear.

Eighth, the fade and dissolve. This is similar to stop camera but is a gradual instead of an abrupt change. It is produced by diminishing the exposure to zero and then running the film back to the commencement of the reduced exposure and fading in or increasing the second exposure at the rate as the previous one was reduced, thus giving full exposure to objects which remained in the scene during the fade in and out, but gradually introducing or extinguishing the image undergoing the magical change.

Multiple Exposure

Ninth, double or multiple exposure. By this device dual roles can be played by a single actor. It consists of masking off a portion of the picture frame and making one exposure, then winding the film back to the beginning

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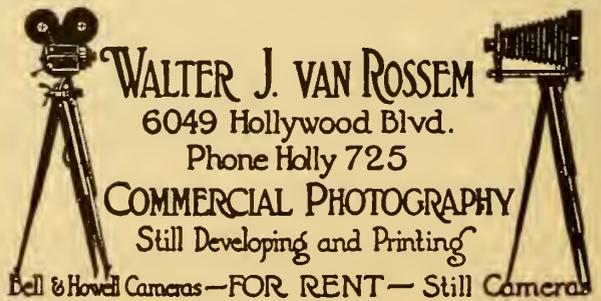
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and masking the first exposure while the second one is made on the remaining unexposed portion of the frame. The frame may be divided in this manner as many times as is necessary to produce the effects desired. I have made multiple exposures where the film was run through the camera twenty-six times. Dual roles, visions and ghostly apparitions are produced by this method. Masks are not usually used for ghost effects. The first exposure without the ghost is made in the normal manner and the ghost, dressed in light colored clothing, is exposed over the first record by posing the ghost actor against a black drop or shadow box. The details of the first exposure register through the shadows of the ghost outline and give it the shadowy or spiritual quality which ghosts are supposed to possess. The chief difficulties in double exposure work are in the synchronization of action and the matching or blending of the edges of the masked sections so that the line of demarcation is indistinguishable.

Glass

Tenth, glass work, which is a variety of simultaneous double exposure. The term "glass work" originated because the first examples of this work were accomplished by painting portions of scenes on large sheets of plate glass. A piece of plate glass a little larger than the field of view of the lens at 10 or 12 feet from the camera is placed in a rigid frame parallel to the front of the camera. The field of action as viewed by the camera lens is left clear and no pointing is done on this portion of the glass. Any section of the remaining portion of the picture composition, however, can be masked out and replaced by a painting, in accordance with the laws of perspective, of any kind of background or foreground that the production may require. With the use of this device it is necessary to build only such portions of a set as is required to form a background for the action while the remaining portion is supplied by the painting on the glass.

The ordinary two-inch cine objective lens at distances beyond ten feet is almost universal in focus; this brings the entire picture in focus and does not blur the painting even though it is close to the lens and the set it far away.

By use of miniature models built to scale almost any number of different setups may be made, but extreme care must be used in lining up the model with the actual set which it completes. In the "Hunchback of Notre Dame" the picture shows a full size reproduction of the Cathedral of Notre Dame in Paris and yet the actual construction of the set was only to the top of the entrance doors, the upper portion being supplied with glass work and miniature models.

Mirrors and Prisms

Eleventh, simultaneous double exposure by means of mirrors and prisms. This is a reversal of the means by which two identical images are made with one lens in the color cameras. By this reversal two images may be superimposed and photographed on the same frame simultaneously and as the two images may be independently focused much smaller models and paintings may be utilized than in the glass work process. It is even possible to use a motion picture, previously taken, for the background of the new composite, so that actors in the studio may be shown amid the waving palms of a background photographed in the Sahara desert. This method has lately been heralded as a wonderful German invention under the name of the Schuefftan process but is antedated by

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several American users, among whom are David Horsely, J. Searle Dawley and myself.

Double Printing

Twelfth, double printing, which consists of making a composite negative by duping from two or more specially prepared positives and masking devices, or in making a special positive from two or more negatives and then duping the result. This corresponds in principle to multiple exposure in the camera. It is usually used to superimpose dark images on high lighted areas, a thing which is difficult to do in the camera.

Traveling Matte

Thirteenth, the traveling matte. By this process figures in action may be superimposed against any background without being necessary to build any sets at all. It requires very accurate mechanism to work it and is patented. It is sometimes called the Williams process from the name of the patentee, Frank Williams. It consists in photographing the action against a white background. By over exposure and intensification a silhouette of the action forms a mask or traveling matte which is interposed between the printing light and the background negative while a print is made from it. This positive film is then run through the printing machine a second time in register with the action negative, thus printing in the details of the acting figures. From this double print a dupe negative is made for further printing. The silhouette print masks the places occupied by the action figures and the original action negative has a dense black ground which masks the background negative image when making the master positive.

Projection Printing

Fourteenth. Projection printing with separate positive and negative control. In this process the printing is not done by contact as in the ordinary printing machine but by projecting the image from the negative onto the positive. The movement of the negative and positive films is controlled by separate mechanisms so that by manipulation of the controls any combination of the negative action series can be recorded in consecutive order on the positive film. The action on the original negative can thus be stopped, accelerated, retarded or reversed on the positive and by multiple masking and printing several successive phases of action of the same moving figure may be shown on the screen simultaneously. Max Fleischer and Alvin Knechtal are exponents of this process.

Other Method

Fifteenth. Mechanical devices operated independently and not connected mechanically with the operation of photography or printing have not been considered as coming within the province of this paper. They are too numerous to even attempt their listing. It should be said in this connection, however, that the trick photographer leaves no stone unturned in seeking to produce the desired effect and any device which lends itself to his use is considered his legitimate ally.

PROJECTION

(Continued from Page 5)

mechanical aptitude, a high degree of technical knowledge and a certain inherent talent for projection, itself. A projectionist may have a high degree of mechanical skill, he may be an expert electrician, he may have the basic knowledge of physics necessary for the intelligent solution of his many current and recurrent technical problems, he may be furnished with the best projection equipment that money can purchase, the conditions under which he is working may be perfect for expert screen results and, yet, unless he possesses a peculiar and intangible aptitude for the art of projection, itself, his results on the screen may be colorless and commonplace despite their theoretical perfection.

Personality in Projection

I have often challenged the statement that the personality of the projectionist cannot be built into his projection. It absolutely can be, providing he possesses the ability to do it. I do not mean to say that we can go into a theatre employing two shifts of projectionists and determine by casual observation of the screen which projectionist is on duty at the time. What I do mean is that if a projectionist of ability and skill and with a natural aptitude for the art is in charge of, or has supervision over, the projection room and is endowed with the faculty for developing the latent talent in his subordinates, then he can just as definitely build his personality into the picture as the musical director can build his into the orchestra.

Intelligence Necessary

This illustrates the importance of the personal equation in the projection room, the value of which has seemingly been generally underestimated by all except the most astute managers. Expert projectionists and supervisors of projection can not be turned out by any rule of thumb, laboratory, class room nor yet alone by practical experience in the field, itself. Of course, the basis of the qualifications for the expert projectionist is intelligence, and it is a sad commentary on things in general and projection in particular that conditions have been permitted to exist which have tended to greatly discourage the really intelligent man from entering this craft as a means of livelihood. Projection, in a short

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time, is most certainly going to require \$10,000 a year men, and where are we going to get them?

Manufacturers Aid

Projector and lens manufacturers are now in a position to supply the projectionist with equipment which will enable him to get the utmost out of the present two-dimension picture. More important, still, the exhibitor is beginning to realize the necessity for expensive projection equipment and high grade lenses and is willing to buy them. A great step forward has been made by several exchanges in their method of checking the condition of their film, thus assuring that prints delivered to the projectionist are in proper condition for projection. The work of the Paramount exchanges along these lines has been especially notable and deserves the hearty appreciation of the industry as a whole. The effects of this work will be far reaching.

The Future

These, and many other things, are indications of the change that is taking place in the standard of projection as practiced in this country. The possibilities in this field are

now attracting the favorable attention of the college trained man, and unless the average projectionist now employed in this work lays out for himself, and adheres to, an immediate and intensive course of study and application along technical lines, he will awake some day to discover that the whole structure of the craft has changed over night and that he is still living in the yesterday.

(Continued from Page 19)

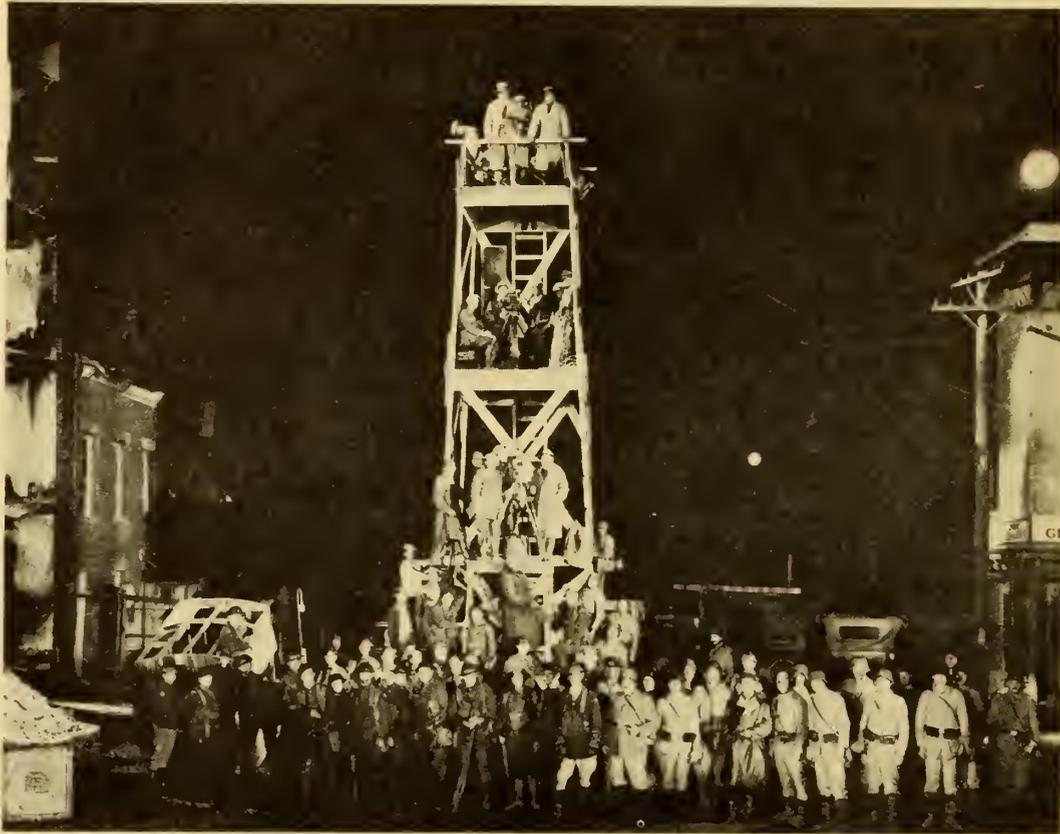
tical use because it is not transparent in a red safelight. It has not been tested in this laboratory.

3. *Pinakryptol Green.*

Pinakryptol green has about the same general desensitizing power as phenosafranine but is more effective with panchromatic emulsions. It has no effect on the latent image when used immediately before, or during development, and does not affect the keeping properties of a developer.

It has a slight but distinct fogging action, however, and if used for too long a time or in too high a concentration as a preliminary bath undesirable fog may be produced. As ordinarily used this is not serious. The chief advantage of pinakryptol green is the fact that it does not tend to stain gelatin and so washes out of the emulsions very easily. It is colorless in a yellowish green light and so can be used very advantageously to develop panchromatic films with the Series 4 Wratten Safelight. The

Cameras Go Over the Top



Three cameras in tandem, so to speak, were used by E. B. Du Par, A. S. C., during the filming of the night battle scenes showing a section of the German and English front line trenches for the Warner Bros. production of "The Better 'Ole," starring Syd Chaplin and directed by Charles "Chuck" Reisner, on the Vitagraph lot in Hollywood.

These cameras were mounted at intervals of about ten feet on the three stories of a forty foot parallel. Director Charles "Chuck" Reisner was on the top level equipped with a telephone connected with a Western

Electric Public Address System of a dozen units scattered at strategic points over the five acres of trenches, barbed wire, and mud.

Thirty sun-arcs, forty side arcs, and ten rotary spots furnished the illumination. These were grouped around the field, four of the most powerful being placed on fifty and seventy-five foot parallels on either side of the camera. This equipment was powered by four gas and one power generator. Four wind machines kept the field reasonably free of smoke from the explosions.

tendency to form a precipitate with hydroquinone in alkaline solutions limits the concentration that can be added to a strong hydroquinone developer, but with ordinary elon-hydroquinone or pyro developers it can be used satisfactorily.

Pinakryptol green is much more expensive than phenosafranine at the present time. Its composition has not been published although the general structure of the class of dyes to which it probably belongs was recently described by Homolka.¹²

4. Pinakryptol Yellow.

Pinakryptol yellow desensitizes more powerfully than pinakryptol green in the same concentration, and can be used much stronger because of its colorless, non-staining solution. Also it is much more active in destroying the color sensitivity of a panchromatic emulsion. When tested with Eastman Commercial panchromatic film and an elon-hydroquinone tank developer it was found to have no effect on the latent image or its subsequent development. It cannot be added to a developer, however, as it is destroyed by sulphite, and some other desensitizer must be used in the developer to prevent the film from regaining its sensitivity during development. A solution of pinakryptol yellow is also said to be slowly decomposed by exposure to light.¹³ It differs from other common desensitizers in that it greatly retards the direct photochemical

blackening of an emulsion such as developing paper. As a preliminary bath for desensitizing panchromatic film, it is the most effective of all the desensitizers considered in this investigation.

5. Pinakryptol.

Pinakryptol which was on the market before pinakryptol green, consists, according to Luppo-Cramer,¹⁴ of a mixture of pinakryptol yellow and pinakryptol green.

6. Basic Scarlet N.

Basic scarlet N was proposed as an effective desensitizer by the Laboratory of Pathe Cinema.¹⁵ It is apparently a mixture of safranine and auramine.¹⁶ Hubl¹⁷ states that it is less effective in desensitizing panchromatic emulsions than pinakryptol green and that its desensitizing power in a developer is no greater than in water solution. Tests in this laboratory have shown that it offers no advantage over phenosafranine in desensitizing

11. Stämmreich and Thuring. Zeit. Wiss. Phot. 23, 363. (1925).

12. B. Homolka, "New Desensitizing Dyes." Phot. Ind., 1925, p. 347.

13. A. Hubl, "Contribution to the Knowledge of Desensitizers." Phot. Rund. 62, 71, (1925).

14. Luppo-Cramer, "The Origin of Pinakryptol Green and Other Dyes." Phot. Ind. 1924, p. 1194.

15. Research Laboratory of Pathe Cinema, "New Desensitizers." Le Phot. 11, 296, 1924.

16. Lumiere and Seyewetz, "Constitution of Desensitizing Azine Dyes." B. J. Phot. 72, 446, (1925).

17. A. Hubl, "Basic Scarlet N as a Desensitizer." Phot. Ind., 1925, p. 432.

power, that it is no more soluble in hydroquinone or pyro developers, and that the persistency of the stain is about the same. As is indicated by its absorption spectra, Fig. 3, its stain has a greater tendency to retard printing than phenosafranine stain, but in the amount present in an ordinary fixed and washed negative such an effect is inappreciable.

7. *Aurantia.*

Aurantia has been recommended by Lumiere and Seyewetz¹⁸ especially for use with Autochrome plates. Its desensitizing power is far less than that of phenosafranine, it stains badly, and washes out slowly. Unlike most other desensitizers it can be added to a concentration as much as 1-500 without precipitating and for this reason may have some use in special cases.

8. *Miscellaneous Dyes.*

A large number of dyes are known^{18, 19, 20} which desensitize photographic emulsions but which are not practically useful because they produce some undesirable effect such as fog, stain, destruction of the latent image, or retardation of development. Notable among such substances is methylene blue which is a more powerful desensitizer than pinakryptol green, but which fogs²¹ very badly. It has been stated¹⁵ that methylene blue can be used in connection with another dye such as acridine yellow which retards the fogging action and still permits desensitizing. Other combinations suggested are rholuline blue or rholuline violet with acridine yellow. The methylene blue-acridine yellow mixture was tested and found to desensitize well without serious fog when carefully used. However, it has no advantage over other common desensitizers, as Lупpo-Cramer⁷ has also shown, and a mixture is certainly less desirable than a homogeneous substance.

Pinakryptol green was selected for studying the limits of safety in the use of a typical desensitizer because it appeared to be the most satisfactory in all respects of any desensitizer available at the time of this investigation.

IV. METHODS USED FOR TESTING DESENSITIZING ACTION

1. *Tablet Exposures.*

A step tablet was prepared which had 25 steps covering a density range from 0.14 to 3.40. Over this were placed narrow strips of the dyed gelatin filters corresponding to the Wratten safelights Series 00, 0, 1, 2, and 3. The strip on which white light measurements were made was covered with a neutral density of 2.30 in order to bring the exposure within the same range as those through the safelight filters.

Tests were made by soaking a strip of film in the solution to be tested, removing excess liquid by drawing it quickly across a piece of chamois stretched over a bottle, and exposing while wet through the tablet. Exposures were made in a cabinet lined with black cloth 50 cm. from a 200 W. tungsten lamp which had a candle power of 176 as used. Exposures for desensitized film were 5 minutes and for untreated film 10 seconds. The strips were developed for 10 minutes in an elon-hydroquinone tank developer²² (NQ-80 tank), fixed, and washed.

From the last visible step on each strip relative exposure values necessary to produce a visible density were calculated. Comparison with the value for untreated film showed the relative sensitiveness for each treatment. With one exposure through the tablet, values could be obtained for white light and for each of the safelights mentioned

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above. By this method the measurements were made on an intensity scale instead of a time scale. The values obtained were subject to an error at least equal to the difference in exposure represented by one step on the tablet, which would be about 50%. Considering the enormous range in sensitivity covered, a difference of 100% would not be serious, however, as this would only mean that a film might have, for example, either 0.1% or 0.2% of its original speed. For practical use a margin of safety much greater than this should be allowed.

2. *Direct Exposure to Safelights.*

In order to relate the results of the tablet exposure to practical darkroom conditions, the time required to fog desensitized film when exposed directly to the safelights was determined. Strips of film 10 cm. x 25 cm. (4"x10") were dipped by stages into a desensitizing bath so that the different areas were in the solution 5, 3, 2, 1, and 1/2 minutes with an untreated portion left on the end. The strip was then wiped with a chamois, placed under the safelight to be tested, and an opaque slide moved across it in such a way that each of the above areas were exposed

18. A. and L. Lumiere and A. Seyewetz, "Experiments on Desensitizers," *B. J. Phot.* **68**, 351 and 370, (1921).

19. E. Stenger and Hans Stammreich, "Contribution to the Knowledge of Desensitizing Silver Bromide-Gelatin Emulsion," *Zeit. wiss. Phot.* **23**, 11, (1924).

20. J. G. F. Druce, "Notes on the Action of Desensitizers in Photographic Development," *Science News*, Nov. 1924, p. 2.

21. J. Eggert and J. Reitsotter, "The Photographic Effect of Methylene Blue as an Adsorption Effect," *Kolloid Zeit.* **36**, 298, (1925).

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8, 4, 2, 1, and 1/2 minutes. The exposure was made at a distance of 30 cm. (1 ft.) from a Wratten Safelight lamp fitted with a 25 W. bulb. The values for the illumination in foot candles afforded by the different safelights under these conditions are given in Fig. 1. From these strips after development, the longest time of exposure which did not cause visible fog for each time of bathing could be determined.

3. Exhaustion Tests.

For the keeping and exhaustion tests solutions were kept in 2 liter glass battery jars which were deep and narrow and simulated the conditions in a large tank.

V. THE USE OF PINAKRYPTOL GREEN AS A PRELIMINARY BATH FOR DESENSITIZING MOTION PICTURE NEGATIVE AND PANCHROMATIC FILM

1. Effect of Concentration and Time of Bathing on Desensitizing.

Various authors¹⁹ have considered the relation between concentration and desensitizing. As Hubl^{13, 23} has suggested, it appears that the amount of desensitizing substance which enters the film layer is the determining factor. Desensitizing is very nearly proportional to the concentration of the desensitizing solution, it increases with rise of temperature, and is diminished by anything which retards swelling such as previously hardening with alum. The temperature coefficient of desensitizing varies with the particular dye used.

The desensitizing action of pinakryptol green was measured by the tablet method described above, for various concentrations and times of bathing. The results for panchromatic film are given in Fig. 4 in which desensitizing is plotted against concentration of the dye. Desensitizing is stated numerically as the ratio of the original to the final speed. For these tests the time of the preliminary bath was 5 minutes. The results show that within the range studied desensitizing is directly proportional to the concentration. The curves for the different safelights have no relation to each other in the sense of absolute safety, but each represents the increased safety due to desensitizing for that particular light.

(Continued Next Month)

Eastman Kodak Stores Open Los Angeles Kodak Building

The Eastman Kodak Stores, Inc., have removed to the new Kodak Building, at 643 South Hill Street, Los Angeles.

The new building is a Class-A structure, with 30,000 feet of floor space devoted to the photographic supply business. The retail salesroom and the professional sales department are located on the ground floor. The second floor is devoted to display rooms for professional photographic apparatus, special stock rooms, projecting room and the general offices. The third floor contains a finishing plant, a repair department, steel die embossing department and a display room for used apparatus. The basement contains stock rooms, storage vaults, and the packing and shipping department.

International Makes Gain on Earnings During 1925

Earning for 1925 of the industries acquired by the International Projector Corp. were \$756,666, against \$605,519 in 1924, an increase of 25 per cent. The ratio of current assets to current liabilities exceeded six to one, net current assets on Dec. 31, 1925, being \$1,299,578. The International Projector Corp. was formed last year to acquire the entire business and assets of Nicholas Power Company, Inc., the Precision Machine Co., Inc., both of New York, and the Acme M. P. Company, of Chicago.

Special Representative Joins American Cinematographer Staff

C. K. Phillips, well known in the motion picture trade paper advertising field in Hollywood, has joined the staff of the American Cinematographer as special representative.

Before joining the staff of this publication, Mr. Phillips worked as advertising representative on the Year Book, the Laemmle number and other special editions of the Film Daily, of which Harvey Gausman is west coast manager.

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 Clarke, Chas. G.—with "Red" Grange, Sam Wood directing, F. B. O. Studios.
 Cowling, Herford T.—29 So. La Salle St., Chicago, Ill.
 Cotner, Frank M.—
 Crockett, Ernest—
 Cronjager, Henry—with Famous Players-Lasky, New York City.
 Dean, Faxon M.—
 Doran, Robert V.—
 Dored, John—Riga, Latvia.
 DuPont, Max B.—
 Dul'ar, E. B.—with Warner Bros., New York City.
 Dubray, Joseph A.—
 Edeson, Arthur—with First National, New York City.
 Evans, Perry—
 Fildew, Wm.—
 Fischbeck, Harry A.—with D. W. Griffith, Famous Players Lasky, New York City.
 Fisher, Ross G.—with Fred Thomson, F. B. O. Studios.
 Fried, Abe—with Fox Studio.
 Gaudio, Gaetano—with Metro-Goldwyn-Mayer Studios.
 Gilks, Alfred—with Famous Players-Lasky.
 Glennon, Bert—with Famous Players-Lasky.
 Good, Frank B.—with Jackie Coogan Prod., Metro-Goldwyn-Mayer Studios.
 Gray, King D.—
 Griffin, Walter L.—with David Hartford Productions.
 Guissart, Rene—Paris, France.
 Haller, Ernest—with Robert Kane Prods., New York City.
 Helmer, Alois G.—
 Jackman, Floyd—Fred W. Jackman Prods.
 Jackman, Fred W.—directing Fred W. Jackman Prods.
 Jennings, J. D.—with Buster Keaton.
 Koenekamp, Hans F.—with Colleen Moore, First National Productions.
 Kull, Edward—with Universal.
 Kurrle, Robert—with Edwin Carewe, United Studios.
 Landers, Sam—
 Lockwood, J. R.—
 Lundin, Walter—with Harold Lloyd Productions, Metropolitan Studios.
 Lyons, Reginald—
 Marshall, Wm.—with Famous Players-Lasky.
 McCord, T. D.—
 McGill, Barney—with Fox Studios.
 MacLean, Kenneth G.—with Mack Sennett Studios.
 MacWilliams, Glen—with Fox Studio.
 Meehan, George—with Columbia Pictures.
 Milner, Victor—with Famous Players-Lasky.
 Morgan, Ira H.—with Marion Davies, Cosmopolitan, Metro-Goldwyn-Mayer Studios.
 Musuraca, Nicholas—with Warner Brothers.
 Norton, Stephen S.—F. B. O. Studios.
 Palmer, Ernest S.—with Fox Studio.
 Perry, Harry—with Famous Players-Lasky
 Perry, Paul P.—with Universal.
 Polito, Sol—with Chas. R. Rogers, First National.
 Ries, Park J.—
 Roos, Len H.—Sydney, Australia.
 Rose, Jackson J.—with Universal.
 Rosher, Charles—with "Ufa," Berlin.
 Schneiderman, George—with Fox Studio.
 Scott, Homer A.—
 Seitz, John F.—with Rex Ingram, Europe.
 Sharp, Henry—with Metro-Goldwyn-Mayer Studios
 Short, Don—
 Smith, Steve, Jr.—
 Steene, E. Burton—
 Stumar, Charles—with Universal, New York City.
 Stumar, John—with Universal.
 Tohurst, Louis H.—producing microscopic pictures, for Pathe.
 Totheroh, Rollie H.—with Charlie Chaplin, Chaplin Studio.
 Turner, J. Robert—with Fox Studios.
 Van Buren, Ned—
 Van Enger, Charles—with First National, New York City.
 Van Trees, James C.—with First National Productions, United Studios.
 Warrenton, Gilbert—with Universal.
 Wenstrom, Harold—with Corinne Griffith Productions.
 Whitman, Philip H.—with Mack Sennett Studios, Scenario Dept.
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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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Goldwyn Producing Corporation
Goldwyn Pictures
Studio
Culver City California

July 28
1924

Mr. H.P. Bolger, President,
Mitchell Camera Company,
6019 Santa Monica Boulevard,
Los Angeles, Calif.

My dear Sir:-

I consider the quality of photography as vital to the making of a good motion picture as the story, the star or the director.

I have just finished directing "The Prairie Wife" for Metro-Goldwyn-Mayer release. James Diamond, my cameraman, photographed every scene with a Mitchell camera, and obtained a very high quality of photography.

Please accept my congratulations of your product, and on the part it played in making "The Prairie Wife".

Sincerely,

Hugo Bulkin

NO AGREEMENT OR ORDER WILL BE BINDING ON THIS CORPORATION UNLESS IN WRITING AND SIGNED BY AN OFFICER

American Cinematographer

Published by the American Society of Cinematographers, Inc.



In This Issue:



**A.S.C. Establishes Experimental
Library**

Projection — Conducted by
EARL J. DENISON

**Amateur Cinematography
Seen as World Peace Agent**

**De Vry Places New Small
Camera on Market**

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American Cinematographer

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THE DEVRY CORPORATION, 1111-A Center Street, Chicago

The EDITOR'S LENS . . . focused by FOSTER GOSS

Important Plans

OFFICERS of the American Society of Cinematographers predict that their coming fiscal year will be the most successful in the history of the Society.

• Daniel B. Clark, president of the A. S. C. for 1926-27, has outlined a program that stands out as the most ambitious to be undertaken since the cinematographers' society was organized.

• One of the major features in Clark's program, that of the A. S. C. standard cinematographic experimental library, is actively under way, with tests on numerous subjects already having been reduced to positive film. Other parts in the A. S. C. activities for 1926-27 are being perfected at the present time, and will be formally announced shortly.

• As has been previously commented on, the idea of the standard cinematographic experimental library presents the possibility of saving producers thousands of dollars, by eliminating needless economic waste and by bringing all standard practices in the field of motion photography to the plane of certainty.

• Results of the various experiments by the A. S. C. members are exhibited at the open meetings of the Society where all members may digest the details of the finished film. Such exhibitions invariably bring forth an exchange of ideas among the members that is conducive to accentuating the possibilities of further cinematographic investigations.

• Prints which record the experiments are kept in the newly installed library at the headquarters of the American Society of Cinematographers in the Guaranty Building, Hollywood, where the organization owns its own offices and assembly rooms which contain complete facilities for projection and pre-viewing.

Editors and Exhibitors

EXHIBITORS and executives who attended the theatre owners convention in Los Angeles in June carried away with them, in the aggregate, a better idea of the magnitude of the strictly cinematographic phases in the art of making moving pictures.

• They had, in their visits to the various studios, the opportunity to view the cinematographer in his rightful role as a real artist, and, practically, the hub about which all "shooting" revolves.

• This month there come to Southern California the representatives of the national editorial association. May the visiting editors likewise acquire a better understanding of the calling that is the cinematographer's. Being men of perception and penetration, the scribes will soon judge for themselves the relative values in film production, and store such information for further use.

• The exhibitor and the editor, especially in small towns and rural communities, usually find much that is common in interest; and with both better acquainted with cinematography and cinematographers, the art of motion photography may well be entering a new era that will date from these two conventions held in the summer of 1926.

Matters of Geography

WHAT'S all these references, in the trade papers, to Eli Whitney Collins, newly elected president of the exhibitors, as a "man from the Middle West" or as a "Westerner"?

• We had the idea that Collins hailed from Arkansas. As much as "Eli Whitney" relates to cotton; as much as cotton suggests the south, that's how much we suspect that a man from Arkansas, if he must be classified sectionally, is a Southerner.

• We wonder what they would say about it down in Arkansas?

Pictorial Gems of Scenes in the West

The three accompanying reproductions present superb examples of "still" photography. Each of the scenes is laid in the West.

Above: This photograph shows a bit of background at Jackson Hole, Wyoming, where George Schneiderman, A. S. C., photographed location scenes for "Three Bad Men," a John Ford production for Fox. Behind the cameras flows the Snake River. Schneiderman is on the right. With him are Joseph Valentine (left) second cinematographer; and (center) a native chieftain who participated in the Ford production.

Center: Shows a scene in the desert country tapped by Palm Springs, California.

Below: Painted Canyon, 38 miles east of Palm Springs, California. The center and the lower scenes were photographed by Daniel B. Clark, president of the American Society of Cinematographers.



Amateur Cinematography

Amateur Cinematography as World Peace Agent

De Vry Places New Small Camera on the Market

Relations *between* Amateurs
Seen as Being Conducive to
International Good Will.



Chicago Firm Develops Stan-
dard Camera *with* 100-Foot
Rolls. Uses Spring Motor.

Hiram Maxim, famous inventor, sees in amateur cinematographic outfits an agency for world peace. His views in this direction were expressed in an interview which, written by Kathleen Halladay, appeared recently in the Boston Post.

Mr. Maxim's interview is, in part, as follows:

"It seems to me that an organization of amateur cinematographers," began Mr. Maxim, "combined in close association with the present organization of amateur radio operators (and by amateur radio operators I do not mean people who listen in on the broadcasting of jazz music and after-dinner speeches, but those of us who relay communications to each other by dots and dashes from one end of the world to the other)—this combination, I think, is a remarkably practical influence to promote international friendship.

Connecticut and Timbuctu

"When people have visual knowledge of conditions in other countries, there is bound to come sympathy and understanding. The mass of the people will not get this knowledge from reading, they certainly will not get it from lectures; there are too many other things to read and hear.

"But somehow I know that if I could send my home-made film, called 'Winter in Connecticut,' to some other amateur in Timbuctu or Nikolajewskoje or Caraguatatuba and get back one showing conditions in those places, the two of us would not only be closer together, but we would both understand and appreciate the problems and advantages of our respective countries better than we could in any other way; we wouldn't be in such a hurry to cut each other to pieces in the name of Mars. . .

"Of course," he added, "I suppose I've got a lot of fool notions—when I had the idea

Announcement, long anticipated, is made this month that the De Vry organization of Chicago is ready to market immediately the De Vry automatic, portable motion picture camera which has been in the process of development for more than a year.

100-Foot Lengths

The De Vry camera will take 100-foot lengths of standard film in a single loading. Motive power is provided by a multiple, high tension spring, set into motion by "pressing the button." There is a uniform release of 55 feet per winding.

Three View Finders

The camera comes equipped with standard F 3.5 anastigmatic lens, and any other standard professional lenses may be installed. The instrument carries three view finders.

Tripods Optional

Tripods may be used for telephoto pictures and the like; however, the tripod is not required on other shots unless desired.

The new camera is designed as a companion instrument to the De Vry standard projector which has been in wide usage for many years.

of an international association of amateur radio operators, folks said: 'He's just a poor darn fool who wants to send telegrams for nothing.'

New Force For Peace

"When the Englishman, the Frenchman, the Belgian, the Italian and the German broke bread with each other in a common interest and ideal, it broke down a great barrier. It established friendly intercourse that was equal

(Continued on Page 18)



Frank Cotner, A. S. C., is chief cinematographer on a series of westerns starring Al Hoxie under the direction of Paul Hurst for Bud Barsky productions. Cotner's company is on location at Sequoia National Park. It is expected that they will be there and in the vicinity of Three Rivers for about eight weeks.

* * * *

Glen MacWilliams, A. S. C., is filming Fox' "The Return of Peter Grimm." Victor Schertzinger is directing.

* * * *

Barney McGill, A. S. C., is photographing the Fox production of "What Price Glory" which R. A. Walsh is directing. Among those who are appearing before McGill's camera are Victor MacLaglen as Captain Flagg, Edmund Lowe as Sergeant Quirt, Dolores del Rio as Charmaine, as well as Leslie Fenton and Ted McNamara.

* * * *

John Arnold, A. S. C., is shooting Metro-Goldwyn-Mayer's special, "The Fire Brigade." Will Nigh is directing.

* * * *

John W. Boyle, A. S. C., is filming "The Masked Woman," a First National production directed by Balboni and starring Anna Q. Nilsson. The cast includes Holbrook Blinn and Charles Murray.

* * * *

Abe Fried, A. S. C., is in charge of photography on "The Country Beyond," a Fox production which Irving Cummings is directing. Olive Borden is featured.

* * * *

Harry Perry, A. S. C., is slated to photograph "Wings," Paramount's epic of the air that is to be directed by William Wellman.

* * * *

Walter Lundin, A. S. C., is photographing "The Mountain Lad," Harold Lloyd's latest production, which is being directed by Lewis Milestone,

Al Gilks, A. S. C., has been busy with maritime scenes off Catalina Island, California, for James Cruze's production of "Old Ironsides" for Paramount. The scenes are of such magnitude that Bert Glennon and Harry Perry, both A. S. C. members and stars on the Lasky camera staff, were called in to capture important action from different angles.

* * * *

Gilbert Warrenton, A. S. C., has completed the filming of "Butterflies in the Rain," a Universal production directed by Edward Sloman.

* * * *

Reginald Lyons, A. S. C., is filming the current productions of the Richard Harding Davis-Van Bibber series at the Fox studios.

* * * *

J. D. Jennings, A. S. C., is photographing "The General," the latest Buster Keaton feature.

* * * *

Georges Benoit, A. S. C., is being praised for his cinematography in "The Speeding Venus" and "West of Broadway," Metropolitan productions starring Priscilla Dean.

* * * *

Floyd Jackman, A. S. C., is filming Jimmy Finlayson comedies at the Hal Roach studios. Stan Laurel is directing.

* * * *

Victor Milner, A. S. C., will film "Kid Boots," which, taken from the Broadway success, will have a cast headed by Eddie Cantor, the original star. Frank Tuttle will direct. The cast will also include Billie Dove, Clara Bow and Larry Gray.

* * * *

Sol Polito, A. S. C., is shooting Ken Maynard in the western feature, "Ride Him Cowboy."

* * * *

Ernest Palmer, A. S. C., is photographing the Fox production, "The Pelican," which is being directed by Frank Borzage.

PROJECTION • Conducted by Earl J. Denison

Cause, Effect in Cleaning Motion Picture Film

Ways in which Film Accumulates Oil, Dust and the like Are Enumerated.

By
Trevor Faulkner
(From Transactions,
Society of Motion
Picture Engineers)

Many Experiments to Find Machinery Adapted to Proper and Thorough Cleaning.

The "Cause and Effect of Cleaning Motion Picture Film" has been chosen as the subject for an article that I have been asked to prepare and place before you, and in so doing, I am talking to you on a subject that has occupied my thoughts and efforts since becoming identified with the motion picture industry, which dates back many years, when you consider the few that motion pictures, as an industry, have known.

In the beginning, as an "operator," then as an exhibitor, later as an exchange man, and now as head of a department that has as one of its chief functions the cleaning and renovating of used positive film, I have experimented, striven, and constantly had the vision of ultimately developing, or at least helping to develop, a satisfactory plant for cleaning film, and now feel that this has, to a large degree, been accomplished, for we have evolved a department that is satisfactorily cleaning and revitalizing used positive film.

Projectionist's Compartment

To begin, let us first consider the showcase that is used to display our stock, "motion picture film,"—the projection room.

In practically all cases this room is in the highest and most distant point in the entire theatre, and is seldom under the care of a janitor or porter, and in too large a percentage of cases, is hardly ever seen by the manager. Again, on account of the compartment being at the highest point of a theatre, and usually with an exhaust fan in it, a large percentage of the dust that arises from the constant stir of patronage is drawn into the booth, and necessarily through the port holes in front of the projection machines. This all shows us that we are displaying wares under conditions that, after a few such showings, offer a big handicap.

Care in Handling

Now let us consider our stock of ware and its handling. When positive film is first re-

leased and placed in the hands of the projectionist for exhibition, it is more sensitive to damage than when older, and consequently more care must be used in its handling. Regardless of any prior waxing the film may have had to prevent this probable damage, the projectionist often applies oil to the film. Then there are many cases where the film is often run through a continuous bath of lubricating oil, for in one make of projector, when the projector is tilted to fit the angle at which the light rays must be thrown to reach the screen, there is a receptacle created at the base of the mechanism that is capable of receiving and holding a sufficient amount of oil that is drained from the mechanism to give a long lower loop for this steady bath of oil. Another make of projector, the model of a year or two back, gave the film a constant spray or sprinkle of oil through a worm intermittent bearing. It is also a usual thing for the projectionist to have a pan placed on the floor under the projector to catch the oil drip from the mechanism, and often this pan, with more or less oil in it, will also catch the ends of the film as the projectionist is either threading up the machine or is taking the film out of the lower magazine. You can rightfully place all of the blame for all oil on film to one or all of these conditions, for in no other way does film ever come in contact with oil.

Dust and Lint

Motion picture film, when moving rapidly and subjected to any friction, will generate a sufficient amount of static electrical current to attract any dust or lint that it comes in contact with, and will so pick up dust and lint, very much as a magnet will pick up small particles of metal. Consequently when the doors of an enclosed projector are opened, or when film is "spilled" on the floor, the film attracts and collects a large amount of the dust and lint that is around. The oil that is already

(Continued on Page 16)

A. S. C. Establishes Experiment Library



The following story was written by the editor of this publication for the studio section of the EXHIBITORS HERALD. In it Daniel B. Clark, president of the American Society of Cinematographers, explains one of the major features in the policy of the A. S. C. for the coming year:

Photographic departments recently instituted by the American Society of Cinematographers will result in saving producers thousands of dollars in production experimental costs, according to a statement of Daniel B. Clark, president of the cinematographers' organization.

The A. S. C., under the direction of Clark, is establishing an experimental library on standard cinematographic subjects, including lenses, various types of illumination, filters, gauze, glass shots, diffusers and the like.

The object of the library is to reduce, to a definite and standard basis, the workings of all the major elements that are brought into play in the art of cinematography. Clark and his fellow members of the A. S. C. state that such a procedure sponsored as it by the society will be the means of eliminating duplication at the various studios in photographic experiments that parallel each other.

Aim to Cut Waste

"We aim," Clark declares, "to cut down this economic waste of one cinematographer's going out and necessarily spending a lot of time and company money in ascertaining photographic results, when, a couple of weeks later, a fellow cinematographer finds that it is his duty to cover practically the same ground.

"What we are doing is to provide, at the A. S. C. headquarters, a permanent record of cinematographic experiments on standard subjects. If a certain cinematographer wants to know how a given lens works out, it will be needless for his production company to go through the expenditure of conducting a second experiment when the subject has been already covered in the library by a fellow A. S. C. member.

Subjects Photographed by Experts

"The subjects in this library will be photographed by the A. S. C. members who are

President of Society Explains Important Undertaking by Cinematographers

masters in their individual lines so that the film will represent the best results that could be attained any place in the world.

"What I have just mentioned," Clark continued, "is but one of the many ways in which the American Society of Cinematographers is working to cut down the cost of production. Our plans for the fiscal year just started are the most comprehensive in the history of the A. S. C., as will be evident as the year progresses."

Cooper Hewitt to Put Up New Six-Story Building in Hoboken

Plans have been announced for the erection of a new building to house the expanded activities of the Cooper Hewitt Electric Company in Hoboken, New Jersey.

Work on the new structure will begin at once.

Fourteen years ago, when the Cooper Hewitt Electric Co. moved to Hoboken from New York City, a large plant was built specially for it. This anticipated growth of the business for many years to come. Since then additional buildings have been acquired, but all are now insufficient for the increasing production.

Continued Growth

After the General Electric Co. acquired the stock of the company some years ago, it became evident that greatly enlarged manufacturing facilities would be needed. Accordingly an entire city block was acquired. This adjoins the original plant on the north. Plans are being made now, not only for present requirements, but also for future developments. These call for a new building at the northeast corner of Adams and Eighth Streets, Hoboken. This is to be 100 ft. front by 430 ft. deep and six stories high.

First Section

The first part of it to be built will be 100 ft. by 200 ft. and will be started at once. It will contain the glassware manufacturing and laboratories of the company to be brought

(Continued on Page 24)

Effect of Desensitizers in Development

Continued from Last Month.
Additional Tables and Charts
Used in Investigation Given.

By M. L. Dundon
and J. I. Crabtree
Of the Eastman Research
Laboratory.

Full Details as Announced
in Transactions of Society of
Motion Picture Engineers.

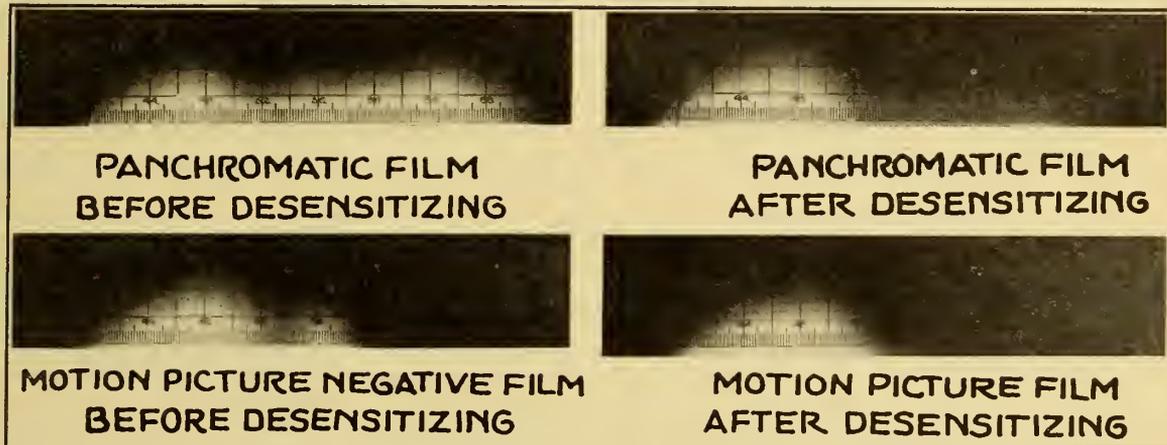


Figure Six: Effect of Pinakryptol green on color sensitivity of Panchromatic and motion picture negative film. Desensitized films were given 200 times as much exposure as the untreated films.

(Continued from last month)

In Fig. 5 are shown similar results for motion picture negative film with 2 minutes bathing.

The effect of pinakryptol green on the relative color sensitivity of panchromatic film is shown by Fig. 6. Pieces of panchromatic and motion picture negative film were bathed for 2 minutes in pinakryptol green 1-10,000 dried and exposed in a spectrograph. The desensitized samples were given about 200 times as much exposure as the untreated film. It is evident that desensitizing with pinakryptol green reduces color sensitivity much more than it does the original blue sensitivity of the emulsion. The effect of different dyes in this respect varies greatly. Pinakryptol yellow is more effective and phenosafranine less effective in reducing color sensitivity than pinakryptol green. In fact phenosafranine is actually a color sensitizer to a slight degree and confers a definite color sensitivity on ordinary plates with a maximum effect at 580 mm. in the green-yellow region. Basic scarlet N also extends slightly the sensitivity in the green.

The effect of time of bathing on sensitivity may be seen from typical curves of Fig. 7 in which sensitivity of panchromatic film is plotted against time of bathing. It is evident that sensitivity falls off very rapidly for the first minute or two but diminishes very slowly after 5 minutes.

2. Limits of Safety in Exposing Desensitized Film to Different Safelights.

In Table I the comparative safety of untreated film to safelight exposure was indicated. In Table II are given similar data for film desensitized for 2 minutes and

5 minutes with various concentrations of pinakryptol green. The numbers represent time in minutes for which exposures were made without producing visible fog. Tests were only extended to 8 minutes, as it was considered that this was sufficient time of exposure to cover any practical need, although in many cases the time of safety was much longer.

F. indicates fog in less than $\frac{1}{2}$ minute, and the numbers show the time in minutes for which the film could be exposed without visible fog, after a treatment corresponding to the time and concentration given at the top of the column.

From these figures it is seen by bathing panchromatic film in a 1-10,000 solution of pinakryptol green, or after the film has been in the developer containing 1 part in 25,000 of the desensitizer, inspection of the film may be conducted with safety with a Series 4 Wratten safelight containing a 25 W. bulb at a distance of 12 inches.

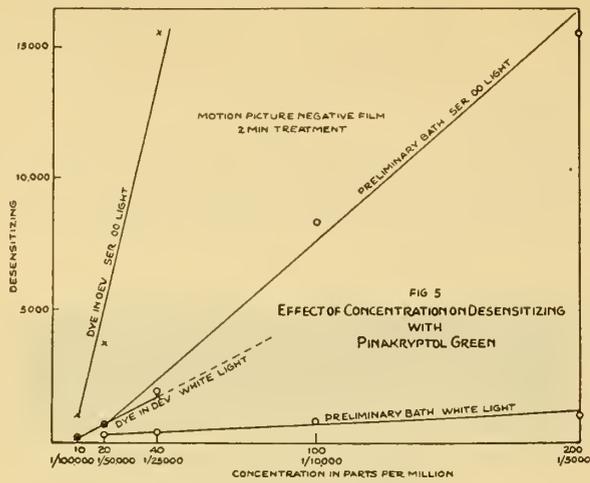
Under the same conditions motion picture negative film may be safely examined with a Series 0 safelight.

3. Bleaching of the Latent Image on Desensitized Film by Red Light.

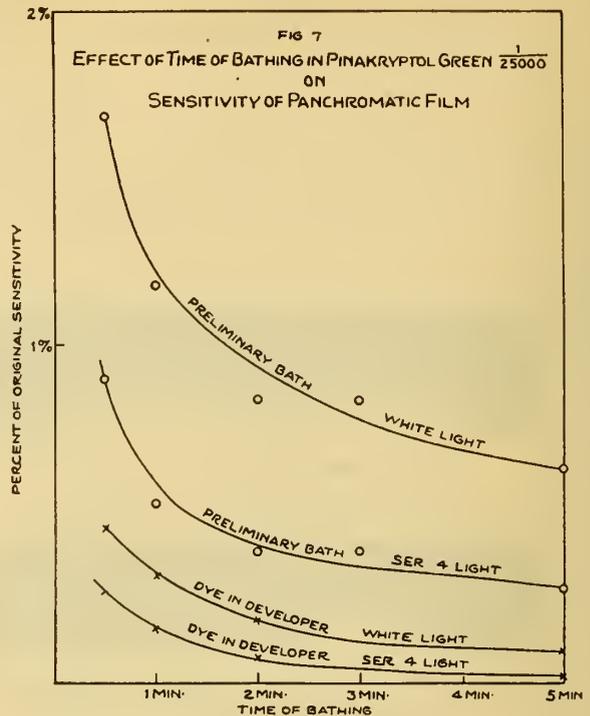
It is a well known fact that when an exposed plate is treated with certain dyes and then exposed to red light the latent image of the first exposure is destroyed. Ordinary desensitizing dyes promote this action very strongly. In fact, as Luppó-Cramer²⁴ has shown, if a plate is given

23. A. Hubl, "A Contribution to the Knowledge of Development in Bright Light," *Phot. Rund.* 62, 235, (1925).

24. Luppó-Cramer, "Desensitizing and Duplicate Negatives," *B. J. Phot.* 69, 765, (1922) (*Abs.*) *Phot. Rund.* 59, 269, (1922).



Above: Figure five.
Right: Figure seven.



a uniform exposure, bathed in phenosafranine, exposed through a negative to red light and then developed, the preliminary exposure is removed in such a way that a duplicate of the negative is produced. In the case of an iodized plate when treated with certain dyes bleaching may take place even in blue light.²⁵

In the ordinary practice of developing a desensitized film in bright red light this bleaching action may be quite serious. With a non-color sensitive film after a preliminary desensitizing bath but before development, the safe time of exposure to a red safelight is not measured by the

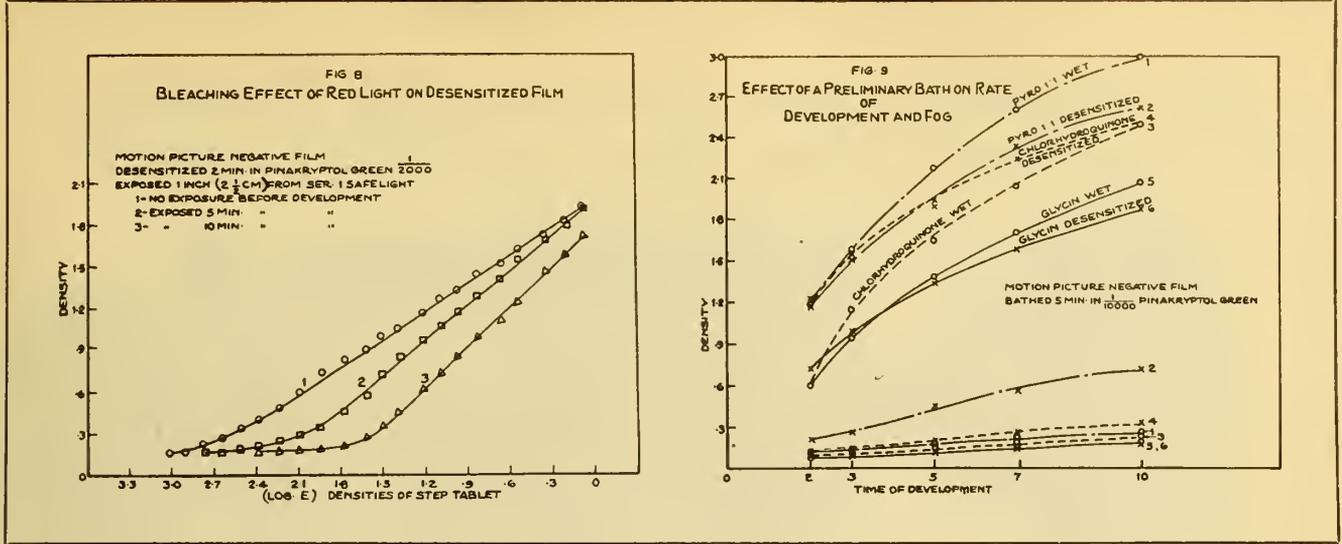
time required to produce fog, but by the time required to destroy the latent image. With panchromatic film the red sensitivity is not destroyed sufficiently for bleaching to become serious. Also after development has once started no appreciable bleaching occurs. With motion picture negative film bleaching has been found to take place with Wratten safelights Ser. 0, 1, and 2, and with positive film even Series 00 was effective. No bleaching has been detected with the green safelight, Ser. 4.

In Fig. 8 is shown the bleaching effect of red light on a latent image with motion picture negative film. A step tablet exposure was made, the film bathed in pinakryptol green 1-2000 for 2 minutes, parts of the sheet

25. Luppó-Cramer, "Bleached Out Pictures in Silver Iodide," Phot. Ind. 1925, p. 650.

TABLE II
Safe Time of Exposure of Desensitized Film to Wratten Safelights. Exposures at 30 cm. (1 ft.) from 8" x 10" Wratten Safelight Lamp containing 25 W. Bulb. Panchromatic Film

Wratten Safelight Series	Concentration of Preliminary Bath.				Concentration of Dye in MQ Tank Developer.							
	1-5000		1-10000		1-25000		1-50000		1-25000		1-100000	
	2	5	2	5	2	5	2	5	2	5	2	5
	min	min	min	min	min	min	min	min	min	min	min	min
1	F	F							F		F	F
2	1	2										
3	8	8	8	8	8	8	1	8	8	8		
4	8	8	8	8	1	8		1	8	8	F	1
Motion Picture Negative Film.												
00	1	8	F	1/2	F	F	F	F	8	8	F	F
0	8	8	8	8	8	8	1	8	8	8	1	8
4	8	8	8	8	8	8	4	8	8	8	8	8



exposed to a Series 1 safelight at 1 inch for 5 and 10 minutes and the several parts of the sheet developed together. The progressive destruction of the lower densities and resulting increase in contrast are evident. Of course these conditions are much more severe than would occur in practice.

In Table III the results of another interesting experiment are tabulated. A sheet of motion picture negative film was given a flash exposure sufficient to develop to a density of about 0.90. It was then cut into strips which were desensitized for 5 minutes in solutions of pinakryptol green of the various concentrations given. Parts of the wet strips were then exposed one inch (2.5 cm.) from a Ser. 1 safelight for 2, 5, and 10 minutes and all developed. The resulting densities show that when the treatment was sufficient to prevent fog, bleaching occurred. Under these conditions with a concentration of 1-1,000,000 the film increased in density, while with 1-100,000 the latent image was bleached. When a Series 0 safelight was used the change took place between 1-100,000 and 1-50,000.

TABLE III

Effect of Red Light on the Density of Pre-exposed Film. Desensitized for 5 minutes with Different Concentrations of Pinakryptol Green

No.	Concentration of Pinakryptol Green.	Time of Exposure to Red Light.			
		None.	2 min.	5 min.	10 min.
1	None	0.92	0.99	1.19	1.55
2	1-10,000,000	0.91	0.98	1.15	1.40
3	1-1,000,000	0.89	0.98	1.12	1.26
4	1-100,000	0.88	0.76	0.47	0.24
5	1-50,000	0.89	0.82	0.45	0.19

In the case of a developing paper which showed bad abrasion it may be of interest to note that when bathed in pinakryptol green and exposed to red light a latent light image was destroyed without affecting the abrasion.

Carroll⁶ found that pinakryptol green destroyed a latent image on process plates in the dark in a few hours. A test on motion picture negative film showed that after a week the latent image of a step tablet exposure was appreciably diminished. After three months it was again tested and found to have nearly the same threshold exposure but the contrast was much less. With fine grained emulsions the bleaching would no doubt take place much more rapidly. We may conclude, therefore, that it would not be safe to desensitize exposed

negatives and then keep them for any considerable length of time before development.

4. Fog Produced by Pinakryptol Green in a Preliminary Bath.

Many dyes which have a strong desensitizing action are such bad fogging agents that they cannot be used for this purpose. Pinakryptol green has some fogging action and this fact must be considered when using it. The intensity of fog produced as well as the effect on the speed of development varies greatly with different developers.

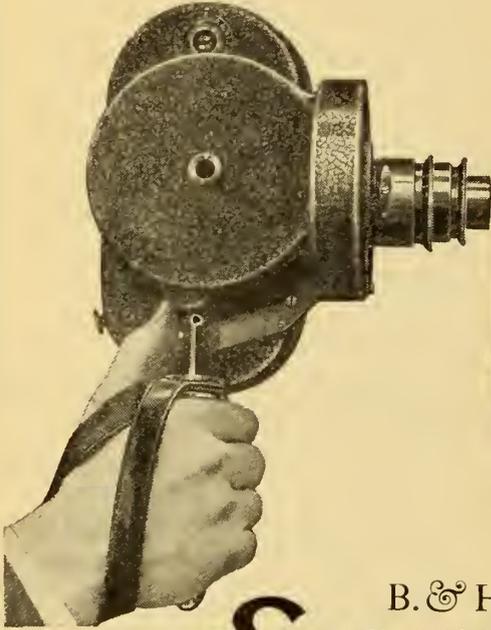
In order to find something of the extent of such variations, strips of motion picture negative film exposed uniformly along one edge were dipped into a solution of pinakryptol green 1-10,000 for 5 minutes, wiped with a chamois, and lowered into a tube of developer at regular intervals so that a range of development times was obtained on the same strip. Comparison strips were made by soaking in water instead of desensitizing. The densities of the image and fog were then plotted against time of development. Typical curves for three different developers are shown in Fig. 9.

With pyro 1:1 (B. J. formula) the fog on the desensitized strip was enormously increased, and although the first appearance of the image was accelerated its later development was greatly retarded. Dilution of the pyro 1:1:2 did not change appreciably the retarding or fogging action for a given degree of development. With chlorhydroquinone the fog was somewhat increased for a given time, but the initial accelerating action on development was so great that it extended throughout any ordinary development time. With glycin no fogging action occurred, the image appeared sooner on the desensitized strip but the growth of density on prolonged development was retarded. From these curves it is evident that pinakryptol green in a preliminary bath affects fog and rate of development very differently with different developers, and whether it retards or accelerates development depends on the particular point at which a comparison is made. These facts show why conflicting statements on this subject might easily occur in the literature.

It should also be mentioned that a desensitizing bath which has been standing for some time in a tank may accumulate a scum on the surface which must be removed before using or it will stick to the surface of a film causing a bad smeary fog.

(Continued on Page 20)

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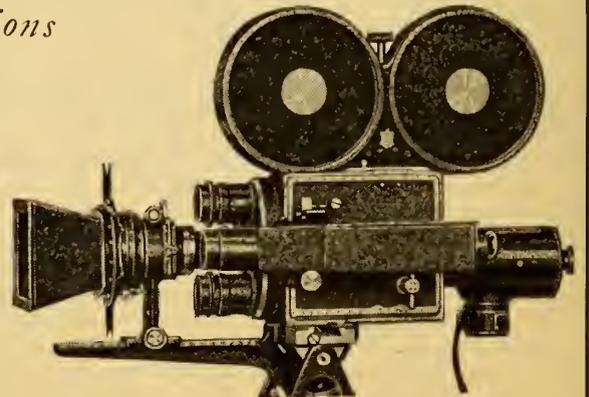
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"I have used your wonderful little EYEMO Camera a number of times during the filming of my latest production, "The Passionate Quest," for Warner Brothers, and succeeded in getting some unique and unusual shots with it. The EYEMO is now my constant companion and I consider it a great advance in the mechanics of motion picture photography. I congratulate you on its creation."

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Glen MacWilliams Chosen for A.S.C.



Glen MacWilliams, well-known cinematographer, has been chosen for membership in the American Society of Cinematographers, according to announcement from the A. S. C. Board of Governors.

Began as Actor

MacWilliams entered the motion picture industry as an actor in 1913. His acting career included office boy and similar roles with the old Majestic - Reliance company. Suddenly MacWilliams made the discovery that he had outgrown "short-pants" parts, and naturally his ambitions turned to fuller fields in appearing before the camera. He was unable, however, to convince D. W. Griffith that he has a potential Walthall. When it appeared imminent that he would be obliged to leave the industry that had so intrigued his youthful imagination, MacWilliams encountered the opportunity to become an assistant cinematographer. Needless to say, that, when he was convinced that he no longer would be able to appear before the camera, he pounced on the chance to perform behind the magic instrument.

With Fox

MacWilliams at present is one of the star cinematogra-



Glen MacWilliams, A. S. C.

phers at the Fox studio in Hollywood, having just finished photographing "The Lily" for that organization. Recent productions which the new A. S. C. member has filmed at Fox include "Siberia," "Lazybones," "Thunder Mountain," and "The Wheel."

Other features on which MacWilliams has been chief cinematographer during the past several years embrace "Captain January," "The Mine with the Iron Door," "The Recreation of Brian Kent" and "Helen's Babies" for Principal Pictures; "Enemies of Children," "The Dangerous Maid," for Joseph M. Schenck; "Quicksands," for Hawks-Morosco; "The Spider and the Rose," for

Membership Bestowed on
Cinematographer with Envi-
able Record of Successes

Bennie Zeidman; "Rupert of Hentzau," for Selznick; "Deserted at the Altar," for Phil Goldstone; "The Lamp Lighter," "Wing Toy," "Partners of Fate," "The Mother Heart," "Ever Since Eve," and "Love Time," all for Fox; "The Poor Simp," for Selznick; and "My Boy," "Trouble" and "Oliver Twist," all starring Jackie Coogan.

High Regard

Commenting, in the eleventh anniversary number of the Exhibitors Herald, on the production program of his organization for the coming year, William Sistrom, general manager of the Cecil B. De Mille and the Metropolitan studios, emphasized the importance of the cinematographer in the scheme of motion picture making. Sistrom stated, in part, as follows:

"The most marvelous acting and the cleverest stories can easily be ruined by poor photography and here we also need stars of the photographic profession. My experience in this business leads me to a statement of absolute fact that for Producers Distributing Corporation we have the most adept group of cameramen the business can offer."

Among the A. S. C. members who have filmed recent Metropolitan productions, the photography of which was praised by Sistrom, are Charles G. Clarke, J. D. Jennings, Georges Benoit, and James C. Van Trees.

PROJECTION

(Continued from Page 9)

on the film holds this dirt and more or less dissolves it. As the film is run through one projector after another, it picks up more dirt and receives more oil until it reaches a point of saturation, resulting in this foreign substance forming a cataract on both the emulsion and celluloid sides of the film.

There are none of you but that realize the importance of a reception of lights and shadows on the screen, unmarred by a soiled or dusty screen, dirty or sooty condenser lens, oil or dirt spots on the projection lens, or a hazy reflector in the lamp house. All these are under the control of the projectionist and can be totally eliminated through his efforts, but he is not equipped to remove dirt and oil from the film. As a result the screen presentation is marred in practically all instances where the film used has had five or six prior bookings.

Handicap

You can visualize some beautiful scene as viewed through a window, or through eye glasses which are covered with a film of oil and dirt. Magnify that condition by the ratio of the motion picture frame to the screen. The apparent results present the handicap that the projectionist attempts to overcome through higher lamp amperage, etc.

In the foregoing, I have tried briefly here to outline the cause and effect of dirt and oil on film. Going back to the beginning of my experiments in film cleaning, I will say that I've learned from them that the chemical or wash solution used is of vastly more importance than its application.

Requirements

In helping to build a proper wash solution, we found first that we wanted one that would remove all oil and dirt fast enough to suit the demands of any vehicle of sufficient capacity. Next, a non-inflammable fluid was necessary, and no inflammable or explosive gasses could be present. It had to be free from all salts and alkalis that would have attacked the silver salts in any way. There could be nothing in it that would attack the emulsion in any manner. It could not give off any gas that would impair the health of the cleaning operator and its cost had to be within a reasonable figure, and above all of these things, it had to *revitalize*

the celluloid stock instead of devitalizing it. We have been able to secure such a solution and are using it today in our department, with satisfactory results in all of these features.

After our problems were solved in securing a satisfactory wash solution, we then had its application to consider and were fortunate in getting the manufacturer of the most acceptable machine then on the market, to agree to go through a period of trials and experiments with us. He agreed to any changes in his machine that he and we found would make it more adaptable. As a result of these experiments, we have a machine that does the work satisfactorily, quickly and inexpensively. This cleaning unit consists of one double cleaning machine, described later, and one film splicing machine, and an inspector's work table.

Capacity Per Hour

The cleaning operator can easily clean twelve to fifteen reels an hour on this double machine. As they come off the cleaning machine, they are handed to the inspector for inspection, the reels bands are placed on the reels and the work is then completed and ready to be placed in the vaults. Thus approximately one hundred reels are cleaned a day with the one machine.

How Operated

To describe the operation of the machine used, the film is passed first through a bath of the wash solution, about eight inches being submerged at a time. There are felt brushes submerged in the liquid that brush both sides of the film. The film then travels up through the rubber wipers, suspended on a spring at the same angle—very much in the same manner as a window cleaner uses his "squeegee" in drying the water from a freshly washed window pane. The film then passes through or between flannel strips, slowly driven in an opposite direction to that which the film is traveling. The points of contact with these strips are arranged at offsetting points so that the tension of the film is sufficient to thoroughly polish it on both sides. It then passes through two rubber rollers, wringer-like, which is the only driving power or draught the film has in the entire operation and the film is then wound on a reel by an automatic take-up of the same principle as the take-up on the lower magazine of a projector. The entire operation requires about four and one half minutes to the thousand foot reel of film. (Continued on Page 18)

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Motion Picture Film Department

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Filtered

The solution tank holds approximately one quart of the cleaning fluid and is drained off into a filter after every seventh or eighth reel has been cleaned. After the fluid passes through the filter, it can be used as often as it is thoroughly filtered and freed from the oil and dirt that it carries after it has cleaned the seven or eight reels. By actual measurements this filter, from a day's work of one hundred reels of film, has caught fourteen cubic inches of dirt and oil.

During these years of research, there have been many machines considered and tested, many wash solutions analyzed, and every system, with which we came in contact, was investigated. Many of them have merit, and almost all of them offer, in some manner, a remedy for dirty film. In most instances, the plants that were investigated were operated by their owners as cleaning plants and their business was altogether confined to cleaning film and not to selling equipment for film cleaning. In such cases it meant the loss of time to transport film to their plant. This research work included a very careful study of various types of machines which were on the market and recommended for exchange use, but which we found, after a very careful analysis, did not accomplish the result we desired.

Requirements

In analyzing a machine, it is necessary to take into consideration the following pertinent factors:

First, the capacity of the machine. In developing capacity, you must constantly bear in mind that the greater speed of the operation, the greater are the possibilities of your damaging the film. We have overcome this by using large aluminum rollers with wide flanges to guide the film. The film is pulled through the machine by two wide rubber rollers, arranged similar to a wringer. A gravity switch controls the motor so that should the film break, the entire plant is stopped immediately. There are no buffs or fast rotating polishers to heat the film, should it become stationary, and there are no sprocket teeth to injure it, or idler rollers to crease or mark it.

I have given you here an outline of the operation of our cleaning plant and must apologize for using our own operation as a concrete example, but feel that you would prefer to hear a report on the actual operation of

a working plant, rather than having me present theoretical or hypothetical cases.

What Is Done

These results can be summed up as follows: We are now cleaning films, regardless of the amount of oil and dirt that there is on it, at the rate of one 1000-foot reel in practically five minutes. Every inch of the one thousand foot reel is entirely free from all oil and dirt; there has been no strain on the perforations in any manner; both sides of the film is polished; the silver salts in the emulsion have not been attacked in any manner; the tinting of either the film stock or of the emulsion is totally unaffected and is as safe against future attacks from the acids in the different lubricants the operators use, as it was before cleaning; the film stock is not shrunk or warped in any manner, and above all, every inch of that one thousand foot reel has had a bath in a chemical that will soften it and restore its elasticity.

Film that has had this treatment is so entirely free from anything offering any foreign resistance to its smooth passage through a projector, and is so entirely and thoroughly polished and lubricated in every corner and on all the surface of every perforation, that even though the corners of them may be weakened, the film is much less liable to damage than it was before its treatment.

Amateur Cinematography

(Continued from page 7)

to years of political and diplomatic discussion and suggestion. And now, to send films to each other for projections in our homes only costs the postage fee—and the good it can do can't be calculated in millions.

"We've had meetings here in Hartford to consider our own home movie organization here in this locality (including Springfield, New Haven, etc.) and the possibilities of extending it over the world. At these meetings, experts from two of the leading camera manufacturers have come on here to advise us. We have already learned a lot of lessons in our experience with radio. We have learned that such an organization must be absolutely altruistic. There can be no executive offices, no professional interference; an amateur or-

ganization of home movie photographers must be kept 100 per cent for amateurs.

A New Sport For the Rich

"Just now, amateur movies are providing a big thrill for the wealthy, who have heretofore had private showings of professional films. Close-ups of the family playing golf or sitting on the beach, projected on the small screen in their own drawing rooms, provided a new sport, a new pastime.

"But not only the people in the Social Register are using home movie machines. We hear about only people like the Duke of York, the Hornblowers, the Schwabs, Colonel E. H. R. Green, the Vanderbilts and Galli-Curci making their own movies, but these are only a fraction of the ten thousand 'fans' today.

"Doctors use a small-size movie camera to record major operations, and use the films in instruction courses; architects 'shoot' the progress of skyscrapers; explorers use a small camera where a professional standard-size machine would mean leaving behind ammunition and food.

"Radio, like amateur cinematography, was first the fad of society—and society tired of it and went to something else. Amateurs have brought about great improvements in air communication because they worked from a whole-hearted love of its development. I feel sure that in cinematography, too, the influence of the amateur will be felt in a technical way as well as in the development of this international friendship—which I hope isn't an impractical vision of mine.

"Already chemists have perfected a non-inflammable film which will not explode and which can be used without danger, and engineers have adapted projectors that are fool-proof. Four hundred feet of this small 16-millimeter film is equal to a thousand feet of the professional or 35-millimeter film, which brings the cost within the reach of everybody."

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DESENSITIZERS

(Continued from Page 13)

The data in Table IV were obtained from curves similar to those in Fig. 9. These values merely indicate the variation in the effect on rate of development and fog with several developers.

TABLE IV

Effect of a Preliminary Bath in Pinakryptol Green on Fog and Time of Development with Various Developers.

Developer.	Time in minutes required to reach the same image density.		Fog for same image density.	
	Soaked in water.	Desensitized.	Soaked in water.	Desensitized.
Pyro	3½	4	0.15	0.33
MQ-100* (Elon)..	4¾	6¼	0.18	0.19
MQ-80 (Elon 80%, Hydroquinone 20%)	3½	4¾	0.16	0.21
MQ-25 (Elon 25%, Hydroquinone 75%)	2½	3¾	0.14	0.24
MQ-O (Hydroquinone)	10¾	10½	0.33	0.38
Chlorhydroquinone (MQ Formula)..	5¼	3¾	0.14	0.16
Caustic Glycin.....	7¼	8½	0.13	0.14
Rodinal	5½	7¼	0.20	0.12

*MQ formula is: developing agent 5 grams, sodium sulphite 75 grams, sodium carbonate 25 grams, and potassium bromide 1.5 grams per liter.

Among these developers only rodinal showed a distinct decrease in fog on the desensitized film, while with glycin and elon there was no appreciable change. It should perhaps be emphasized that 5 minutes treatment in a 1-10,000 solution is a longer time than is required in most cases for satisfactory desensitizing, but a shorter treatment would only diminish these effects and not eliminate them. Phenosafranin, which is generally stated to give no fog, was tested in the same way as the pinakryptol green with similar results. With pyro it gave bad fog, with MQ-100 no additional fog was produced, and in both cases development was retarded. It appears from the data obtained in these tests that the fog produced in a developer after desensitizing is closely related to the tendency of that developer to precipitate the dye. Possibly the precipitate formed in the emulsion has some sort of nucleating effect and so promotes the growth of fog.

5. Useful Life of a Desensitizing Bath.

The instructions furnished with pinakryptol green state that the solution should be kept in the dark, so it is probably light sensitive. However, solutions have been kept for several weeks in an ordinary dark room in which a skylight was frequently open without noticeable decrease in strength.

The solutions of concentration 1-5000, 1-10,000, 1-25,000 and 1-50,000 used in tests previously described were also tested for exhaustion. Over a period of 10

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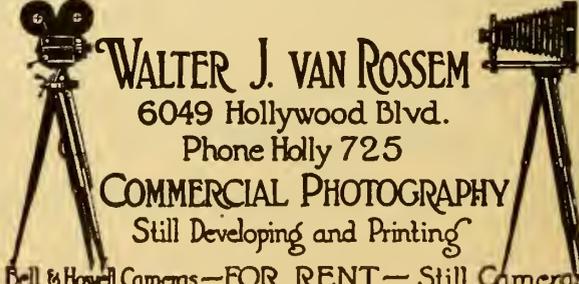
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days a total of one hundred 8" x 10" sheets of panchromatic film per gallon (equivalent to about 500 feet of motion picture film) were desensitized and at the end of that period a test showed an average difference of about one step on the tablet used for these tests. Inasmuch as two steps on the tablet doubled the exposure and desensitizing is proportional to concentration, this indicated a loss of about 25% in the active concentration of the bath. More stock solution could be added to keep up the strength for further use, but a difference of that magnitude should be well within the limits of safety allowed. A tank of desensitizing bath could therefore be used at least as long as a tank developer, and by occasional strengthening its life could be extended very greatly. We have no indication that the fogging action or retarding effect on development is greater in old solutions than in fresh ones of equal desensitizing power.

Wooden racks become stained when used repeatedly in a desensitizing solution, and so a test was made to see if the dye were absorbed by dried cypress wood sufficiently to interfere with the activity of the bath. The effect, if any, was found to be inappreciable.

Small amounts of hypo up to 0.1% were added to a pinakryptol green solution and even after considerable use there was no indication that the hypo interfered in any way with the desensitizing action of the dye.

VI. THE USE OF PINAKRYPTOL GREEN IN THE DEVELOPER

1. Solubility in Developers.

The most serious difficulty in using desensitizers in the developer is their tendency to form a precipitate with certain developing agents. The insoluble substance formed is apparently a combination of the dye and developing agent which forms in alkaline solutions. If the developer is oxidized the reaction reverses and the dye reappears in the solution. The formation of the precipitate is greatly retarded by the presence of quinone or oxidation products of the developer. For example, if a developer is partially oxidized by standing exposed to air or if 5% to 10% of exhausted developer is added to the fresh solution much less trouble from precipitation occurs.

Hydroquinone gives the most difficulty in this respect of any developer tried in this laboratory. It can be used in elon-hydroquinone developers in which the concentration of hydroquinone is not too high. For example, in the elon-hydroquinone tank developer (MQ-80 tank) it can be added to a concentration of 1-25,000, in regular MQ-80 only about half that amount will remain in a fresh developer, while with No. 16 motion picture developer less than 1-100,000 is soluble. With pyro-soda 1:1 (B. J. formula) 1-25,000 precipitates if the solution is protected from the air, but in a tray oxidation takes place so rapidly that the precipitate may not form. When diluted 1:1:2 as usually recommended, the precipitation takes place in the same way if the developer is kept from oxidizing.

Chlorhydroquinone (adurol) gives only slightly less trouble than hydroquinone. Para aminophenol with carbonate or with caustic alkali in the form of rodinal, glycin, and elon, either do not give a precipitate, or if one forms in a concentrated stock solution it readily redissolves on dilution of the developer for use. These facts are discussed fully by Luppó-Cramer⁸ (Bright Light Development, p. 52).

When precipitation in a developer is likely to occur it is very important to add the desensitizer very slowly

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with constant agitation and to use as dilute a stock solution as is convenient. When a precipitate once forms because of a high local concentration it dissolves very slowly, if at all.

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2. *Effect of Concentration and Time of Bathing on Desensitizing.*

With pinakryptol green and most other desensitizers the effectiveness is greatly increased by the presence of the developer and therefore the concentration of dye required is much less than when used in a water solution. In Figs. 4 and 5 curves are given which show the comparative desensitizing action of pinakryptol green in different concentrations when used in the developer and in a preliminary bath. From these curves it is evident that a concentration of 1-25,000 in an elon-hydroquinone developer produces more desensitizing in a given time than a 1-5000 solution in water. In view of this fact Hubl⁵ has suggested that development be started with an old developer containing desensitizer and completed in a fresh developer without desensitizer. He also states that after a preliminary bath the desensitizing is increased when the film is put into the developer rather than the dye being washed out. This, of course, does not apply to desensitizers which are made inactive by sulphite.

3. *Limits of Safety in Exposing Desensitized Film to Different Safelights.*

In Table II data are also given which show the safe time of exposure to different safelights after desensitizing with different concentrations of pinakryptol green in the developer. It can be seen that panchromatic film can easily be made safe for the bright green light Series 4, but not for bright red lights. Motion picture negative film, on the other hand, can easily be made safe for the Series 0 or even Series 00 safelight.

4. *Fogging Action of Pinakryptol Green when used in the Developer.*

It is stated by the manufacturers of pinakryptol green that it diminishes development fog, and a similar effect was found by Amor⁴ for several desensitizers. The effect of pinakryptol green added to the developer in concentrations between 1-25,000 and 1-100,000 was studied for several different developers, including glycin, rodinal, elon, elon-hydroquinone and pyro. Motion picture negative film was used. In most cases it was found that both the development of the image and the growth of fog were retarded. The effect of shortening the induction period is the same as when used as a preliminary bath. However, for the same image density in most cases the fog was slightly less when desensitizer was present. The decrease in fog density varied from 0 to 0.04 with different developers for normal development, and was not therefore of sufficient magnitude to be of very great practical importance. In no case was any serious fogging action detected when the dye was used in the developer.

5. *Comparative Desensitizing Action During Exhaustion of Developer.*

In order to find whether the desensitizer in a developer was effective throughout the life of the developer, solutions containing 1-25,000, 1-50,000, and 1-100,000 of pinakryptol green in MQ- Tank developer were exhausted. Over a period of 10 days one

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hundred 8" x 10" sheets of panchromatic film per gallon were developed (equivalent to 5000 feet of motion picture film). At the end of this time film desensitized in the solutions showed an average difference of three steps on the tablet exposures from the values obtained when fresh. This means that in these tests the effective concentration of the dye had decreased to less than one-half of its original value. In another set of similar solutions exhausted to half that extent no decrease in desensitizing action could be detected. It is probable that the margin of safety would be sufficient to cover any loss of desensitizing power during the life of the developer. In case of doubt more dye may be added occasionally.

There was no indication in these or other tests that the dye affects the life of the developer.

6. *Composition of the Developer.*

In this investigation only the elon-hydroquinone tank developer (MQ-80 Tank) was used for exact studies of the behavior of the desensitizing dye in the developer. This is a typical dilute elon-hydroquinone developer and is widely used for motion picture work. On account of the large amount of labor involved the investigation was not extended to developers of different composition. Information in the literature, and our general experience do not indicate any marked difference in desensitizing with any developer in which the dye is sufficiently soluble to be used satisfactorily. However, desensitizers affect the speed of development to an extent which varies both with the developer and with the particular dye used. In practice, therefore, when using a desensitizer the proper development time must be found for each individual combination.

SUMMARY

1. A desensitizer is used primarily to secure greater visibility during development although it also prevents aerial oxidation fog. Greater visibility may also be obtained by so choosing a safelight that the visual intensity of the light which it transmits is a maximum and its photographic intensity in relation to the emulsion used is a minimum.

2. A practical desensitizer in addition to having a satisfactory desensitizing action must not affect the latent image or the shape of the characteristic curve of the developed image. It must also not give fog or stain and should be soluble and stable in a developer. No desensitizer is known which is stable in a developer rich in hydroquinone.

3. The properties of the following commercial desensitizers have been studied in the light of the above requirements: phenosafranine, pinakryptol green, pinakryptol yellow, basic scarlet N, and aurantia.

4. The limits of safety in the use of pinakryptol green with motion picture negative and panchromatic emulsions have been determined. This desensitizer was chosen because it appeared to be the most satisfactory of the known desensitizers at the time of this investigation.

5. The comparative safety of untreated film and film desensitized for varying times with varying concentrations of pinakryptol green to different safelights has been studied. By bathing panchromatic film in a 1-10,000 solution of pinakryptol green, or after it has been

in a developer containing 1-25,000 of this desensitizer for 2 or 3 minutes, inspection of the film may be conducted with safety with a Series 4 Wratten safelight containing a 25 W. bulb at a distance of 1 foot (30 cm.). Under the same conditions motion picture negative film may be safely examined with a Series O safelight.

7. A latent image on a desensitized emulsion tends to bleach out when exposed to red light. This bleaching action is greatest with non-color sensitive emulsions. With panchromatic emulsions the effect is not serious and after development has commenced no appreciable bleaching occurs. With desensitized non-color sensitive emulsions the same time of exposure to a red safelight is determined by the time required to destroy the latent image and not by the time required to produce fog.

8. Data have been obtained on the fogging action of various desensitizers with developers.

9. An exhaustive study has also been made on the effect of pinakryptol green when used in the developer instead of as a preliminary bath.

Practical Importance of Desensitizers

With superspeed motion picture negative film it is possible to satisfactorily inspect the image with safety during development without the use of a desensitizer. With an 8 x 10 Wratten Series 2 safelight containing a 25 W. bulb, the emulsion can be given an exposure of 2 minutes at a distance of 1 ft. (30 cm.) before a visible fog is produced, which time is far in excess of the time necessary for satisfactory inspection of the film. With this film therefore the use of desensitizers is unnecessary.

With panchromatic motion picture negative film, under the above conditions an objectionable fog is produced in 10 seconds. Inspection of this film during development is therefore dangerous and unless a desensitizer is used development should always be carried out in the dark for a predetermined time at a given temperature as determined by the preliminary development of test strips.

The use of pinakryptol green either as a preliminary bath or when added to the developer will permit of the safe inspection of panchromatic film with a Wratten Series 4 safelight containing a 25 W. bulb at a distance of 1 foot (30 cm.). The film should not be exposed to this light until the film has been immersed in the desensitizing solution for at least 3 minutes.

For use dissolve 2-3 ounce of pinakryptol green in 50 gallons of water (20 grams per 200 liters) as a preliminary bath. When used in the developer dissolve 120 grains per 50 gallons (8 grams per 200 liters). It is usually impossible to add the desensitizer to a developer rich in hydroquinone because the desensitizer is precipitated. The dye should first be dissolved in as small a quantity of hot water as possible and then diluted with cold water or added to the developer.

Desensitizers are valuable insofar as they permit of greater visibility during development and prevent aerial oxidation fog. They are not indispensable, however, and there is always a danger of accidentally fogging an emulsion in the bright light before the desensitizing solution has had sufficient time to act. With panchromatic emulsions their use permits of inspection of the image during development which is otherwise not possible.

(Continued from Page 10)

together in one place. Also it will contain the general offices of the company and of the sales department.

Different Lines

Construction of this important building is in line with the success of the company in the fields of its activity. These are industrial illumination, photographic and motion picture lighting; also in the various applications of quartz apparatus as a source of ultra-violet light. An added field is the manufacture of mercury switches.

The plan for development is evidence of the confidence of the board of directors in the future of the company under the administration of W. A. D. Evans, who has been president since its affiliation with the General Electric Co.

Lockwood Greene & Co. of New York are the engineers on the new job. The contracts for building have not as yet been awarded.

Cohen Celebrates Eleventh Anniversary With Pathe News

Emanuel Cohen, editor of Pathe News, sailed for Europe last month via the S. S. Majestic, bound for England, France, Germany and other European countries, where he will confer with his camera staff and expand his facilities abroad along certain lines. He recently celebrated his 11th anniversary as editor of Pathe News.

E. Burton Steene, A. S. C., has returned to Hollywood from Oakland, Calif., where he filmed Akeley camera shots for Paramount's "The Campus Flirt."

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E. B. Hatrick, vice-president and general manager of International Newsreel, is in Los Angeles, where he will remain a month.

M. D. Clofine, editor of International Newsreel, who has been on the Coast for some time in connection with International Newsreel's pictures of Amundsen's arrival at Teller, Alaska, returned to New York late last week.

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This shot shows pioneer American news cinematographers in Galveston, Texas, in April, 1914, during the trouble with Mexico revolving about Huerta's refusal to salute the American flag. On the extreme right is E. Burton Steene and second from the right is Victor Milner, both of whom were covering events for Pathe Weekly. The gentleman in the center with the Stetson and with his hand to his chin is none other than Romaine Fielding, a foremost director. The rotund lad behind Fielding is one "Kewpie" Morgan, a "discovery" of the director in Galveston. Missing from the picture is L. Guy Wilky, who was cinematographer for Fielding. Milner, Wilky and Steene are now studio cinematographers located in Holly-

wood and all are members of the American Society of Cinematographers. At the time the photograph was taken, American patriotism was at its highest point since the Spanish-American war; and celebrities of the newspaper and literary work, including Richard Harding Davis and Jack London, were in the adventurous atmosphere at Galveston for the departure of Gen. Fred Funston's five transports for Vera Cruz.

Steene's headquarters for Pathe were in Houston, and he worked the cramped territory that extended from Florida on the East to El Paso on the West. Milner was down from Denver, the headquarters from which he covered a country that stretched as far west as Salt Lake City.

Cinematographer Films Many Sets on Griffith's Latest

Harry Fischbeck, A. S. C., is being called on for a variety of lightings and general cinematographic effects, by virtue of the many sets in D. W. Griffith's "Sorrows of Satan," on which the A. S. C. member is chief cinematographer.

Twenty-two sets have been used in D. W. Griffith's "The Sorrows of Satan," nearing completion at the Paramount Long Island studio. The sets range from palatial hotel dining-room to squalid boarding house. Two thousand extras have been used. All exterior as well as interior scenes were shot from sets. Charles M. Kirk designed them for Forrest

Halsey's screen arrangement of the Marie Corelli novel.

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In five days the fronts of 30 buildings were put up and painted and plastered and a street paved, when an exterior set from the back lot was removed to finish a street scene. In four days a garden 220x120 feet was constructed. As fast as one part of this set was finished another part was being torn down after the shooting had been done and a Georgina hall went up. When the park sequence was complete the interior of the mansion was ready.

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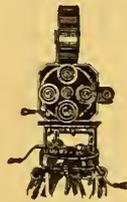
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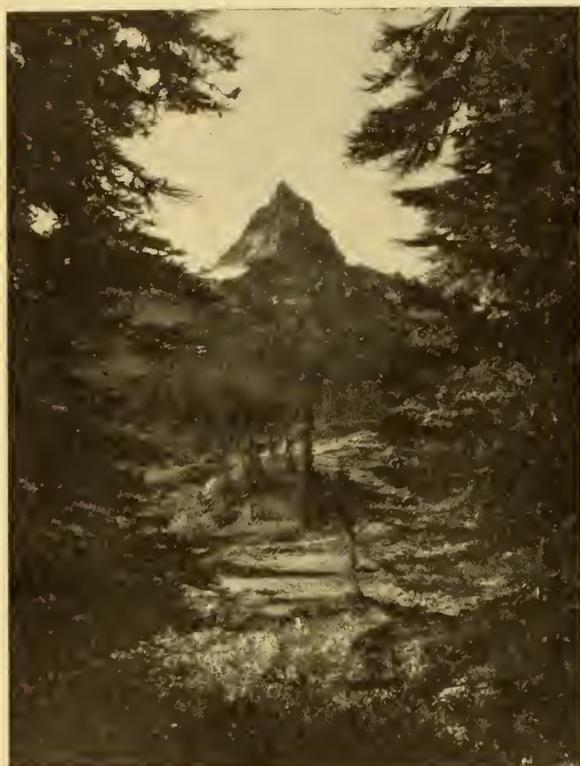
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Scenes from A. S. C. Location Library



Views from A. S. C. Collec-
tion Reproduced. Many Beau-
tiful Vistas Photographed



Above, left: Pinnacle Peak, one of the spectacular crags in the Tatoosh Range. Above, right: Washington Cascades, a series of primeval waterfalls in the Paradise River above Narada Falls. Below: Looking across Silver Forest to snow-capped mountains beyond.

All three stills were taken in Rainier National Park, and are part of A. S. C. location library.



The EDITOR'S LENS • • focused by FOSTER GOSS

New or Old?

¶ Memories that are convenient serve their masters well; but, in this day of periodic praise for foreign pictures, there are still those who remember the reception accorded several years ago the showing of the German film, "The Cabinet of Dr. Caligari," at the old Miller's theatre, Los Angeles. How different are the current encomiums from the hissing, hooting and egg-throwing that attended poor old Dr. Caligari's artistic entrance to the fair city of the angels!

¶ Verily, the pendulum doth swing from extreme to extreme. The antagonistic hysteria—for which the war could certainly not have been held entirely responsible—happily has passed until now we stand at the opposite end of the cycle. Behold, then, the extravagant plaudits which are heaped on those foreign-made pictures which are commercially predestined to be hailed as American triumphs. If the condemnation of five years ago was undeserved, then much of the contemporary eulogizing lacks timing.

¶ Which brings us to an article that appeared some time ago in the *Film Daily* lauding camera "angles" as practiced in certain enumerated instances in German pictures. While no body of men is more pleased than the American Society of Cinematographers to recognize advancement, whether made in Europe or America, in the field of motion photography, it might be well for some writers to more carefully appraise the antiquated methods that they are prone to dress up in the clothes of novelty.

¶ Many of the angles mentioned in the article in question, according to Gilbert Warrenton, A. S. C., would appear palpably crude if they were incorporated in American productions, for the simple reason that they were discarded as obsolete in the Middle Ages of cinematography. Critical appraisals which tend to popularize methods, which definitely have proved out-of-date, bring about retrogression

rather than progress in cinematography—and the motion picture industry, whether in this country or abroad, needs all the progress that can be given it.

¶ Cinematography can use criticism, but it must come from an even-keel. Warped perspectives are not any more to be desired than the projection of a picture that is out of focus. Give European as well as American cinematography fair and just appraisal, and that which comes from beyond the waters will continue to go forward steadily as it has in the past couple of years.

¶ After all, cinematography is a universal language, and achievements in its field one place are achievements the world over.

Knights of Courage

¶ To paraphrase the old saying, "when Greek greets Greek," the greeting perforce breathes of manly sincerity. In other columns of this issue, an aviator bespeaks the admiration of the crusaders of the air for the courage of cinematographers.

¶ That this admiration—which comes from courageous men—is well bestowed is again indicated in the report concerning the exploit of John A. Brockhorst and M. A. Baron, of International Newsreel, in flying in the teeth of death to get motion pictures of the exploding arsenals and magazines during the recent disaster in New Jersey. Cinematography, as well as aviation, thrives on such spirit.

¶ The deeds of the International Newsreel cinematographers not only served to give the public a graphic report of the inferno but also immeasurably aided the military authorities in combating the continued explosions. Courage plus organization make such things possible.

Location Library is Founded by A. S. C.



Cinematographers Devise Ex-
pert Means of Determining
Locations' Film Qualities

A location library, designed to meet the needs of A. S. C. members as well as those of motion picture producers generally, is the latest unit in the program of the American Society of Cinematographers for the current year, according to an announcement from Daniel B. Clark, president of the A. S. C.

Cinematographer's Angle

The library is being formulated with particular regard to the expert and pictorial eye of the cinematographer, and is intended as a specialized aid to those producing organizations which already maintain their own location bureaus.

The new A. S. C. undertaking, it is planned, will contain pictorial reproductions of locations throughout the world, with emphasis being laid on those in the American West, which is nearest the film capital, the base of operations of all production activities.

Motion Picture Film Included

Arrangements are also being made to include not only still photographs in the library, but to list motion picture film as well.

By carrying cinema positive as a part of the enterprise, cinematographers and their producers will be enabled to see just how a given location will appear on the screen before they risk company money and time in traveling a great distance to the spot in question.

Filming Data

The photographing of such locations will be done under the direction of the American Society of Cinematographers, with complete data being kept as to what lenses, exposures, stock and the like were employed in the making

Backed by Resources

Clark and his fellow members of the A. S. C. believe that a location library, maintained strictly from a cinematographic perspective, will serve to reduce this phase of film production to something of an exact science. All of the resources of the American Society

of Cinematographers, Clark states, will be marshalled to make this venture a success.

Well Started

Already included in the library, are representative scenes of the following locations: Painted Canyon district, 38 miles east of Palm Springs, Calif.; Zion Canyon and Bryce Canyon, in the state of Utah; Puget Sound and Seattle, Wash., and vicinity; San Juan Islands; Lake Washington; Rainier National Park; Lake Chelan; Olympia peninsula country; Poodle Dog Pass and the attendant snow-capped mountain district; the Monte Cristo region; the country about Mt. Baker, Mt. Shuksan and Green River Gorge; Sooke river canyon district; forests in the Jordan River valley; Mr. Arrowsmith; Cameron Lake and numerous other scenes in British Columbia.

Lighting Equipment Received

For A. S. C. Experiment Library

Lighting equipment, valued at several hundred dollars and manufactured by the Cooper Hewitt Electric Company, was installed during the past month at the headquarters of the American Society of Cinematographers as a part of the A. S. C. test and experiment library.

The equipment was installed under the special direction of John T. Shannon, manager of the Keese Engineering Company, Hollywood representatives of the Cooper Hewitt company.

Following the installation of the apparatus, Shannon and R. A. Keese, of the firm that bears his name, appeared before the A. S. C. open meeting of July 19th, at which time Shannon lectured on present and coming advances in cinematographic illumination. Shannon recently spent several weeks on a trip in the East, during which time he held numerous conferences at the Cooper Hewitt home offices, particularly with his firm's research laboratory officials.

Amateur Cinematography

An Amateur Gives Some Suggestions

By Hamilton Riddel

Hints as to How One Amateur Improves Quality of Motion Pictures Taken by Himself

(The following article, written by Hamilton Riddel, a representative amateur, indicates some of the many ways in which amateur cinematography may be applied in an interesting fashion:)

It is to the interest of the amateur that he edit his Cine-Kodak films after they have been returned from the finishing station and are ready for projection. Perhaps some amateurs will say that they haven't the time for editing; but when they realize that it does not require an excessive amount of time, and that such time is well spent and will add to the screen results, they will no doubt be anxious to edit their films. It is interesting work—this editing—and no matter how good a film is, it will be greatly improved by some judicious cutting.

When the finished film is returned from the laboratory it should be projected. During projection the photography, length of scene, sequence, and the general action should be noted. This will make editing easier.

Accessories

A film splicer and rewind are necessary accessories. Cine-Kodak film is so small that it is difficult to splice it without the aid of a splicer. And, of course, a rewind facilitates the handling of the film while it is being edited. These two accessories are time-savers, too.

"Leader"

Every film needs a "leader." This is usually a strip of plain film from which the emulsion has been removed. If you have none, soak some old film in warm water and then the emulsion is easily removed from the film base with a knife. A leader film should be about eighteen inches to two feet long. This leader is used when threading the projector preparatory to showing the picture.

If you do not have a main title to your film, it is well to follow the leader with a foot of black film. This is film that was not exposed, but which has been finished at the laboratory. Quite often you will get a few feet of this black film at the beginning and end of your roll of Cine-Kodak film. The object of putting a foot of this black film after the

leader is so that when you start projecting your pictures, the white leader will not flare up on the screen, thus causing a most unpleasant effect upon the eyes of those watching the pictures. Of course, in threading your projector, you should note that the first part of the black film is before the projection lens. Then when you start your projector and the safety shutter slides out of the way allowing the light to pass through the film, the screen will be dark for a moment and your pictures will then follow. This assures a pleasant introduction of your pictures.

Opening Scene

After the strip of black film, you will have to decide what will be your opening scene. The writer believes that, in general, this should be a distant scene, after which you so arrange your different scenes so that many close-ups are included. Motion pictures of your family or friends prove so interesting that you should take many close-ups as they add life to your films.

Ratio

Most of your scenes should not last more than ten seconds upon the screen or about four feet of Cine-Kodak film. Many scenes should be from five to eight seconds long. Have a good sense of what is interesting and you will never show a picture that is jerky, because of shortness of scene, nor a long drawn out one, due to too much footage. Use your discretion—and your scissors.

As you take your own motion pictures you will become more critical of your photography. So don't get discouraged if all your scenes are not properly exposed. Cut them out, and forget them. And resolve to do better when you are taking your next roll of film. Your projected pictures will be a delight to you if you only allow your best photography to be in your edited films.

At the end of your reel of film there should be another foot or two of black film. Thus when the last scene appears on the screen, it will be followed by the black film.

(Continued on Page 22)

An Open Letter

(The following letter is self-explanatory. It represents the views of the American Society of Cinematographers on a subject that has been more or less perennial in its interest:)

ON LOCATION
CARE TOM MIX COMPANY
GLENWOOD SPRINGS, COLO.

Editor, American Cinematographer,
HOLLYWOOD, CALIFORNIA.

DEAR MR. GOSS:

My attention has been called to the published reports concerning a movement afoot in the East to unionize cinematographers. As the President of the American Society of Cinematographers, which represents the foremost cinematographers in the world, I believe it imperative at this time to make known the stand of the A. S. C. in this matter.

As you well know, we do not oppose unions as a matter of policy or principle. They are very necessary factors in some industries. In the motion picture industry itself, I don't suppose that there is any question that the unions have proved the salvation of the calling of the projectionists.

However necessary the union may be in other lines, it has no place among cinematographers at this time. I make this statement as based on the accumulated wisdom of cinematographers for all time past. The idea of a union for cinematographers has come up for discussion many times during the decade that the American Society of Cinematographers has been serving the industry. Each time all logic and reason have proven plainly the fallacy of such a move. Aside from the fact that we believe that cinematography is essentially an art and the cinematographer an artist, we regard his work as individual and distinctive to such a degree that it cannot be stereotyped into a set basis for a wage scale, nor do we think that it will permit of even an "equitable" arrangement in the form of a sliding scale or the like.

The foregoing represents the views of the American Society of Cinematographers. We do not for a moment take the position that the millennium has arrived in salaries or working conditions for cinematographers. But we believe that the continued recognition on the part of producers of the constructive work that the American Society of Cinematographers has been, and is doing, will do much more for the benefit of all concerned, than any union could. If and when this recognition should fail, then the time might be ripe to talk trade unions for cinematographers; but knowing what the A. S. C. is achieving for the present and what the magnitude of its plans for the future is, I do not think that such a time is imminent in the least.

Sincerely yours,

*1219-20-21-22 Guaranty Building,
Hollywood, California.*

DANIEL B. CLARK, *President,*
American Society of Cinematographers.

Bad Negatives Hurt American Films in Europe

Adverse Criticism Due Largely to Worn-Out Negatives Received in Germany



World-Famous Cinematographer Studies Situation for Six Months. Finds Cause

German indifference or opposition to American motion pictures is due largely to the dilapidated condition of prints and negatives when they are received in Germany, is the view entertained by Charles Rosher, A. S. C., in an article, which appearing in the *Berlin Lichtbild Buehne*, Berlin, has commanded wide attention among the American film trade papers.

In Berlin

Rosher, famous as chief cinematographer on Mary Pickford productions, is at present, during the course of Miss Pickford's tour in Europe, under contract to Ufa with headquarters in Berlin.

Studied Situation

For the past six months, Rosher has attended every premier of American, German and other motion pictures to be held in Berlin. It is his observation that the majority of negatives which reaches Germany is in such deplorable condition that even the most proficient of the country's laboratories would be unable to reproduce an acceptable print.

Wear and Tear

This condition is brought about, Rosher believes, by the facts that not only more than 200 prints are often required for the home market, but because, before a negative reaches Berlin, it often has been promiscuously used, cut, printed and spliced on way points during the course of its life in France and England. Often, Rosher finds, it is a secondary negative which comes to Germany and which has previously gone through French and English laboratories.

Must Understand Audience

"Besides," Rosher continues, "the American producer knows too little about German psychology. If the American industry wants to maintain its footing on the German market, every producer who intends to send his product to Germany should have a man in his studio while the picture is being shot. This man would have to be thoroughly acquainted with the German psychology. The ideal

would be a German expert who has lived in the United States for a number of years. This man would act as an advisor to the director and should have even authority to see that certain scenes or passages would be filmed in two different versions, one to suit the Americans, the other catering to the German taste. This man should also be able to translate the titles into German right in Hollywood, so that misunderstandings on the part of Berlin editors would be avoided."

Rosher has observed that American films have been absolutely misunderstood and maltreated in their German re-editing. The expense connected with the engagement of such experts, he says, does not compare with the advantages that will accrue on the market not only in Germany but in entire central Europe.

To the German producers who aspire to the American market, the noted cinematographer gives the similar advice—to have American advisors not only on the set but, above all, in the department in charge of the selection of scenarios.

Offers Co-operation

CRECO, INC.
923 Cole Ave.
Hollywood, Calif.

July 6th, 1926.

MR. FOSTER GOSS, *Editor,*
American Cinematographer,
Guaranty Building,
Hollywood, California.

My dear Mr. Goss:

It was with extreme interest and enthusiasm that I read your article in the July issue of the *American Cinematographer* on the establishing of an experimental and research laboratory.

May I say at this time that myself and any member of my organization is at the service of the A. S. C. and the individual members in an advisory capacity, from a lighting or electrical engineering angle.

In all sincerity,

HS:G

H. SYLVESTER.

Hail Jackman Triumph in "The Devil Horse"

A. S. C. Members Realize Another Achievement in Film
Starring Wild Horse King



Blase New York Critics Doff Hats at Excellency of Production Made by Jackmans

Severe Eastern critics lavished praises on another Fred Jackman production when "The Devil Horse," made for Hal Roach for Pathe release, had its world premiere in New York City recently.

"The Devil Horse," which stars Rex, "king of wild horses," was directed by Fred W. Jackman, A. S. C., and was photographed by Floyd Jackman, A. S. C. The triumph is made more complete for the Jackman family by virtue of the fact that Master Fred Jackman was accorded the plaudits of the New York audiences for the prominent part that he essays in the feature.

Direction, story interest and photography alike are praised in the following New York reviews which are reprinted in part herewith:

* * * *

HERALD-TRIBUNE:

This picture has been made by a man or men with imagination, and there were little whimsical touches in it which delighted us. For instance, a title was flashed on the screen reading, "The news flashed through the wild country—the devil horse had captured a man!" Then followed a scene where the wild horse was being ridden by the hero, while out of the grass peeped rabbits and out of the forest peeped wild deer, eyes wide with wonder as they crashed back into the woods to carry the news to their neighbor: "The Devil Horse has captured a man!"

* * * *

WORLD:

Rex, the silver screen stallion, the handsome, big, black horse, the Lionel Barrymore of equine dramatics, prances across the white sheet in Warners' Wondertheatre this week in a cinema written so expertly as to render him in his art quite considerably more than human. Wherever a good horse with a fine, steady eye, a high, rangy head and a barrel of dynamite in each leg is loved, Rex will attract and win.

AMERICAN:

Another gifted animal this week holds forth at the house usually devoted to Rin-Tin-Tin, the wonder dog. And Rinty's own audience, fickle and unashamed, doesn't object in the slightest. For it is Rex, as "The Devil Horse," which stamps impatient feet.

* * * *

EVENING WORLD:

"The Devil Horse" is a good deal more than a trained animal act photographed. It is cleverly and logically constructed drama with the human element present in a sub-plot that entertains and adds to the major drama without interfering with it.

* * * *

TIMES:

"The Devil Horse" was produced by Hal Roach and directed by Fred Jackman. In it figures that remarkable horse named Rex, which will be remembered as the animal who gained no little fame, for what might be termed a performance, in the film called "Rex, the King of Wild Horses."

Rex is just as wonderful in "The Devil Horse" as he was in the other picture.

* * * *

MOTION PICTURES TODAY:

The great horse, Rex, is starred in this super-western. Critics are unanimous in saying that his work is remarkable and business is very good. Fred Jackman directed.

Charles Clarke, A. S. C., is shooting George Melford's production for Fox, entitled "Going Crooked."

Robert Kurrle, A. S. C., is photographing the Fox feature, "The Runt," which is being directed by Jack Blystone.

Barney McGill, A. S. C., is filming the latest of the Van Bibber comedies for Fox. Robert Kerr is directing.

What It Takes to Be A Cinematographer

By
Daniel B. Clark,
A. S. C.

Pre-requisites of Cinema-
tographic Calling Out-
lined by A.S.C. President

(Editor's Note—The following story was written by Daniel B. Clark, president of the American Society of Cinematographers, for the HOLLYWOOD MAGAZINE, by special permission of which it is reprinted here:)

Hollywood is not only the mecca for thousands who would achieve fame as players on the screen but, records of the American Society of Cinematographers show, this community is becoming the magnet for scores of others who aspire success as cinematographers—or cameramen—with the various motion picture studios.

Photographic triumphs in releases of the past two years have engendered interest in the cinematographer to a remarkable degree with the result that there has arisen a countless number throughout the world that would emulate the accomplishments of filmdom's most celebrated cinematographers. Every week brings its quota of inquiries to the American Society of Cinematographers, seeking information as to how and where to learn to be a cinematographer.

Without going into the situation that the supply of even the recognized cinematographers—with years of experience and successful productions to their credit—greatly exceeds the demand, it might be said that the ace cinematographer stands as a combination of diversified qualities, including those of the artist, the chemist, the mechanic and the student of human nature.

The artistic is probably the dominant note in the success of the cinematographer. In the artistic lies the basis of presenting the subject in a visually pleasing manner. The cinematographer with artistic ability does not worry if a subject lacks beautiful qualities. The experience that is peculiar to him teaches him that after all "art" is not "what" but "how." As proof of this, the homliest sandpile, the flattest landscape, or, on the other hand, the most irregular features can be made, by thoughtful treatment, beautiful to look upon. However, that which we term as artistic ability has no value at all unless the possessor has a balance of judgment of how, when and where to use it.

This brings us to the all-important matter of composition which in itself is of sufficient proportions to cover a cinematographic treat-

ise. By composition, it is possible to express a definite thought, or designate a certain spot to which the path of the eye is to travel, there to halt for the action that is to take place. In fact, by being a master of composition, the cinematographer, in the proper use of lights which is his forte, often can make what is a negligible piece of acting appear as a master performance, to the agreeable surprise of director, actor and all concerned.

Because he must be familiar with the exposure and development of motion picture film, the cinematographer must have, briefly, a working knowledge of chemistry, so that he may intelligently correct his lens exposures and arrive at the point of perfection.

His mechanical ability asserts itself in the actual manipulation of the delicate instrument called the camera. The slightest vibration or mechanical imperfection in the camera might well make the finished film display figures who jumped instead of walked across the screen, since each fallacy in the negative picture, which is little more than an inch square, is magnified many times when it is thrown on the screen. In short, he must conquer all the intricate ramifications of the camera mechanism before he can lay the most elementary claim to being a cinematographer.

Being a student of human nature is a very important factor in the calling of the cinematographer. All human beings have certain characteristics, and these must be portrayed on the screen. Some of these characteristics are visible on the countenance and in human actions, and some are invisible. In the portrayal of a character, cinematographically, it often is necessary to eliminate the visible and reveal the invisible, either by adaptation of light or by any other of the things which are a part of the cinematographer's stock in trade. It is only by knowing his subject thoroughly from a human interest standpoint that the cinematographer can decide upon just what treatment to use in a given case.

So it is that many intangible matters go in making up the profession of the cinematographer. He must be equipped with a sort of sixth sense as to how to make a certain scene superior, photographically, but his decision must at the same time be based on sound judg-



Victor Milner, A. S. C., is working hard as chief cinematographer on Paramount's production of "Kid Boots" which is starring Eddie Cantor. E. Burton Steene, A. S. C., is photographing the Akeley camera shots for the production. Lengthy location trips on "Kid Boots" hold no terrors for Steene who has augmented his cinematographic equipment with modern seven-league-boots in the form of a powerful Marmon roadster with which to cover maximum distances with a minimum ticking of the clock. What with Milner's Lincoln, the new Marmon, all of Steene's cameras and lenses, not to mention Milner's auxiliary Ford, does not this make a high-powered pair of cinematographers?

* * * *

Harold Wenstrom, A. S. C., is filming "Just Off Broadway, starring Corinne Griffith.

* * * *

George Benoit, A. S. C., is photographing "Pals in Paradise," a Metropolitan production directed by George Seitz. Marguerite de la Motte, John Bowers and Rudolph Schildkraut are featured. Two weeks will be spent on location at Lake Arrowhead.

* * * *

Glen MacWilliams, A. S. C., is photographing "The Return of Peter Grimm," the Fox production of the David Warfield success. Victor Schertzinger is directing.

* * * *

Bert Glennon, A. S. C., is filming Pola Negri in "Hotel Imperial," a Paramount production.

* * * *

Abe Fried, A. S. C., is back in Hollywood from Canadian locations where he filmed scenes for Fox' "The Country Beyond," directed by Irving Cummings.

Dan Clark, A. S. C., is still holding forth in Colorado where Tom Mix, for whom Clark is chief cinematographer, is making the Fox production, "The Great K. and A. Train Robbery." Clark reports that he had never known that there were so many camera angles on a train. He has photographed from the top of the train, from the side, front, rear, straight-up and endwise. So, Clark writes, he thinks that he has about covered the train, while the train, through the co-operation of its big-hearted coal-burning engine, has reciprocated by covering Clark, camera and crew with an abundance of soot and grime.

* * * *

Sol Polito, A. S. C., has completed the photographing of "Ride Him Cowboy," starring Ken Maynard for First National release.

* * * *

Gilbert Warrenton, A. S. C., is photographing Universal's "Taxi, Taxi," starring Edward Everett Horton.

* * * *

Walter Griffin, A. S. C., is shooting "Rose of the Bowery," a David Hartford production.

* * * *

Charles Van Enger, A. S. C., has returned to Hollywood from New York City. Van Enger is under contract to film First National productions.

* * * *

Ross Fisher, A. S. C., is filming "The Lone Hand," starring Fred Thomson at the F. B. O. studios.

* * * *

Norbert Brodin, A. S. C., is chief cinematographer on "Eagle of the Sea," Frank Lloyd's first production for Famous Players-Lasky.

* * * *

David Abel, A. S. C., is photographing "My Official Wife," a Warner Bros. production. Irene Rich and Conway Tearle head the cast.

But logical

It's but logical to agree that for correct rendering of colors in black and white tones, you need film that is *completely* color sensitive.

So it's but logical to use Eastman Panchromatic Negative.

Sensitive to all colors—blue, red, yellow, green—it enables you to keep them all in the negative in their true monochrome relationship.

Write for the booklet "Eastman Panchromatic Negative Film for Motion Pictures". Properties, uses, handling, development of the film are described.

Motion Picture Film Department

EASTMAN KODAK COMPANY

ROCHESTER, N. Y.

BELL & HOWELL CAMERAS

—another way of saying “Photographic Excellence and Flexibility”

On Location with the B & H Pioneer Standard and

MAKES MOVIES AS THE EYE SEES
Eyemo
REGISTERED
AUTOMATIC

One of the First National producing units on location in Long Pine, California; using Bell and Howell Cameras to film “Senor Daredevil.”



Albert Rogell

“GROWING -- Right along with the Industry”

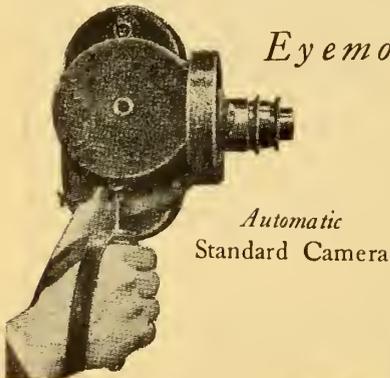
This, in a few words, sums up reasons for the present almost exclusive use of Bell & Howell cameras by the foremost Motion Picture Producers the world over.

Bell & Howell pioneered with the industry. The first B. & H. Cameras, made 19 years ago, more than answered the limited requirements of those early days. As exactions grew, Bell & Howell kept pace,

usually anticipating new effects and aiding in all forms of motion picture standardization.

Many of the original Bell & Howell Cameras are still in use. Interchangeable detail parts and basically patented pilot register movement have kept them constantly up to date. A B. & H. Camera may become old, but never obsolete.

And now, still growing with the industry, Bell & Howell have perfected EYEMO, the automatic professional standard camera operated while held in the hand. For news reel, stunt shots, special effects, and as a means to get quick-breaking pictures in a hurry, EYEMO is the wonder of the day. Already you find it on nearly every lot, along with its bigger brother, the B. & H. Pioneer Standard.



Eyemo

Automatic Standard Camera

Bell & Howell Company
6324 Santa Monica Boulevard
Hollywood, California

Dear Sirs:

When this "infant industry" of ours grew up, I have no doubt it will still be using Bell & Howell cameras. That's because you are growing right along with it!

We used the H. & H. while we were making "Senor Daredevil," for Chas. E. Rogers. We had a lot of very difficult location work at Long Pine, where men and cameras had to have endurance and dependability -- in other words, had to "stand the gaff." That, we observed, was where Bell & Howell shone. Of course, the fine work it does is an axiom among cinematographers.

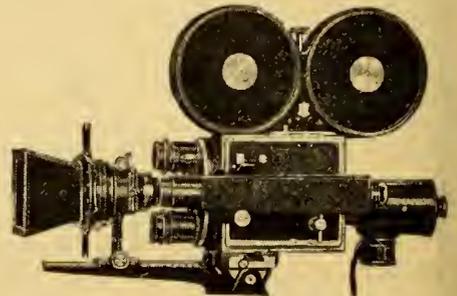
First National says we gave them a good picture, and I want B. & H. to have its share of the credit.

Sincerely,

AR:GB

May 13,
19 26.

The World's Standard
B. & H. Professional
PIONEER



Displays at Our
Hollywood, New York
and Chicago Offices.

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Editors Enter Motion Pictures



A. S. C. Makes Official Film
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of Editors of United States

By special arrangements conducted by the American Society of Cinematographers, an official motion picture was made of the Spanish luncheon given at the Writers Club, Hollywood, on July 6th, to delegates to the convention of the National Editorial Association by the Association of Motion Picture Producers, on behalf of the film industry as a whole.

Industry as Hosts

The luncheon was a highlight in the picture profession's reception of the visiting editors who came to Los Angeles from every section of the United States. Scores of film-dom's celebrities acted as hosts to the editors and their families during the course of the occasion, which was especially marked by speeches delivered by Will H. Hays, Rupert Hughes and Donald Ogden Stewart.

In Charge of Filming

The American Society of Cinematographers sponsored the making of the film of all the official proceedings. King Gray, A. S. C., and Reginald Lyons, A. S. C., were the cinematographers in charge of photography.

Lightning Speed

By record-making work, supervised by the A. S. C., the editors were enabled to view themselves on the screen within six hours after they had been photographed.

Lyons and Gray completed the actual photographing in the middle of the afternoon, and the negative was rushed to the Cinemagraph Laboratories where it was developed in despatch time.

Claude C. Baldrige, superintendent of Cinemagraph, handled the developing and printing. Titles for the film were written and a form of continuity was devised by the Amer-

ican Cinematographer's editorial staff, which likewise, in co-operation with Baldrige, executed the editing of the finished film. The positive titles were photographed by the Jacobsmeyer Company and were delivered simultaneously with the drying of the positive. The print was immediately taken to Grauman's Egyptian theatre where, following the overture, the assembled editors were given the surprise of viewing themselves on the screen as they appeared before the camera on the same afternoon.

No Prior Arrangements

The feat is especially outstanding in view of the fact that no pre-arrangements had been made for the rapid making of the print. The request for the film to show to the editors on the same night came after photographing of the affair had already begun, and arrangements were effected by the representatives of the American Society of Cinematographers before the exposures had been completed.

Numerous Scenes

Among the scenes, which were projected before the editors at the Egyptian, were those of Rod La Rocque and Donald Crisp congratulating Herman Roe, newly elected president of the National Editorial Association; Ramon Novarro, Lionel Barrymore and other stars in similar scenes with eminent editors; Will H. Hays, Governor Richardson of California, and Fred Beetson felicitating the newly elected officers of the editors; shots of Will Hays while making the principal speech of the day; a scene of Rupert Hughes delivering his address; Fred Beetson, secretary of the Association of Motion Picture Producers, introducing the scores of stars to the gathering of the editors; and various scenes of the editors and their families on the Writers Club grounds.

PROJECTION • Conducted by Earl J. Denison

Progress in Projection



This writer recently had the pleasure of addressing the members of the American Projection Society at their club rooms in New York City. The subject was "Proper Splicing, Care and Handling of Film," with some remarks regarding projection in general. The membership of the American Projection Society is made up of the foremost projectionists in New York City and the vicinity and after talking to them for about two hours I learned that they are a progressive and up-to-date body of projectionists who know their business thoroughly. This fact was brought out by the pertinent questions asked after the lecture was over. I was told that mine was the 57th address made before the Society and no doubt they have heard 57 varieties on the subject of projection.

Progress

This is indeed an age of progress in the motion picture industry. Everything points to this fact; better pictures, better photography, better condition of film, (as served by the exchanges, better equipment, better projection, better working conditions, better satisfied audiences.

For Improvement

However, there is one thing that I firmly believe could show immediate improvement and that is the care and handling of film by the projectionists in the theatres. Punch marking of film by projectionists has practically been eradicated but there is still considerable unnecessary damage done to the film through careless handling and splicing by the projectionist.

Proof

The average projectionist will not agree with the writer on this statement, but a trip through the film exchanges, when the inspectors are examining and repairing film, will conclusively prove the above statement to be true. As long as film comes in contact with

American Projection Society
Great Benefit to Industry.
□ How to Thwart Fire Hazard

steel projectors the film will suffer damage. Manufacturers and distributors of motion picture film expect a reasonable amount of wear and tear on the film but a great deal of unnecessary damage could be eliminated at once through more careful handling.

When new installations are made in a projection room, or additions to the present equipment, each piece of apparatus should be carefully selected for that particular installation in order that screen results will be of a high standard. Such equipment should include a proper and separate receptacle for scrap film, a separate receptacle for oil rags or waste, a separate receptacle for waste paper, and a separate receptacle for carbon stubs.

Each receptacle should be plainly marked so there will be no danger of mixing film with paper, etc.

Fire Hazard

The above leads us to one of the most important subjects of the entire film industry; that is the ever present fire hazard. Of all the branches of the motion picture industry projection constitutes the greatest fire hazard with the possibility of the greatest loss of life and property. This is true because only in projection does the film come in contact with intense heat and every precautionary method known should be strictly applied at all times to keep the fire hazard to an absolute minimum.

Extinguishers

Each projection room should be equipped with fire extinguishers and so located that they are in easy reach at all times but the fire extinguisher is of no use unless it is kept charged. Although fire extinguishers may have never been used, they should be inspected and recharged at least every six months. In addition to the fire extinguishers, each projection room should contain at least one bucket of sand and one bucket of water,

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using the standard round bottom fire buckets and buckets plainly marked showing contents. These buckets should be hung side by side on standard wall fire hooks about four feet from the floor in the most accessible location.

The average projectionist has neither time nor facilities for experimental and research work but a careful and intelligent reading of the projection and technical departments in the trade papers and the transactions of the Society of Motion Picture Engineers, (S. M. P. E.), will be found well worth while, and a consistent reading of the above mentioned trade papers and transactions by all projectionists should result in marked improvement in projection generally.

Poor Projection Beats Off

Theatre Patronage, Says James

Writing in his characteristically forceful and original vein, Arthur James, in the July 17th issue of Motion Pictures Today, of which he is editor, decries the "business" complex that permits poor projection which, he suggests, really kills business. James' editorial follows:

If you were privileged to view a sublime masterpiece contrived by a genius in art and before you looked at the canvas you smeared your eyeglasses with butter, would you be getting the most out of your opportunity?

This question arises in our minds as a result of recent visits to smaller theatres, some in New York suburbs and others in lesser cities where the pictures were good pictures but because of poor projection, the entertainment value of the offerings was reduced by more than fifty per cent. In some cases the too rapid running and the bad lighting turned entertainment into irritation and we saw people leave the theatres and overheard their expressions of dissatisfaction. In the larger theatres where so many of us see the pictures we have

Camera Craft and American Cinematographer

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Consult them.

(Continued from Page 17)

so come to expect fine projection that we almost take it as a matter of course.

Is there in this day of advanced excellence in the mechanical devices available and the almost fool proof machinery, really any excuse for poor projection? Only a short sighted policy will permit a theatre manager to abuse the eyesight and infringe on the patience of his customers.

Projection is so much an essential part of the entertainment value of motion pictures that showmen have every business incentive for being liberal in their expenditures for equipment and careful in their choice of apparatus. We are convinced that this is not only wisdom in business judgment but a matter of actual necessity if a theatre is to retain its patrons and meet the theatre competition that is bound to enter a field not properly served.

Every theatre in the land should be so equipped that perfect screen service is unvarying. There should be safeguarding against all contingencies and protection for all emergencies. This is the showman's essential cooperation in the entertainment of his audiences.

A medium picture projected so that the beauties of its photography are evident is better than the finest picture masterpiece so poorly put on that the customers are annoyed.

We believe the day is not far off when the public will stay away from theatres that have poor projection and we can't say that the blame will rest with the public. They know now what good projection is and they are not slow to place the responsibility where it belongs—on the shortsighted or careless manager.

(Continued from page 11)

ment and experience—and the latter includes experiments. Very often the cinematographer finds it necessary to disregard his artistic urge when, to give vent to it, would mean hundreds of dollars of additional expenditure to his company. The recognized cinematographer is ever on the outlook to effect economies in production, and, as a matter of fact, he has perfected his art to the degree where, through the progress of cinematography as a whole, thousands of dollars are saved in the film industry each year. Thus it is that the

(Continued on page 19.)

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cinematographer, least of all film people, can not be temperamental for his profession calls for unfailing, mature deliberation and judgment.

In short, while the cinematographer must be somewhat a jack-of-all-trades, he must be, to vary the old proverb in a paradoxical way, a master of one—and that is cinematography. While as yet it is not generally admitted that a cinematographer can “make” a picture, it is well stipulated that he can “break” it. And if there is no royal road to learning, surely there is less of such a highway to the destination of becoming an “ace” cinematographer who has little or no precedent to guide him, but who must literally conjure his calling from the university of hard knocks, better known as the field of experience.

Photograph Explosion From Air Amid Bursting Shots and Shells

Risking their lives in the attempt, John A. Brockhorst and M. A. Baron, International Newsreel cinematographer and still man, photographed, from an aeroplane flying at an exceedingly low altitude, the scene of the arsenal explosion at Lake Denmark, N. J.

During the course of their flight, magazines were still bursting and shells were still peppering the winds.

Photographic records obtained by Brockhorst and Baron proved of great service to Army and Navy authorities in locating the exploded magazines, those which were on fire and those where there was a possibility of saving life and surrounding property.

It was not until International Newsreel's serial pictures of the disaster were hurried to Dover did those in command of the “battle front” have any clear idea of just what magazines were burning and which were still likely to fall victims to the flames, with the resulting danger of more terrific explosions.

At dawn Brockhorst and Baron flew over the scene of destruction and made pictures of the disaster from the air.

That was the only point from which it

(Continued on Page 24)

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Junior Cameramen Elect New President; Club in Active Month

David Ragin has been elected president of the Junior Cameramen's Club to succeed Gregg Toland who has resigned due to a prolonged absence in New York City where he is assistant cinematographer to Arthur Edeson, A. S. C., who is photographing First National productions.

Other officers of the organization are Burnett Guffy, vice president; Joseph McDonald, second vice president; Robert Laprelle, third vice president; Ira Hoke, secretary; and Roland Platt, treasurer. The board of directors includes Max Cohen, K. F. Green, Gregg Toland, and William Reinhold.

Hold Dinner

During the past month, John R. Marshall was admitted to membership. Marshall was initiated at a dinner given by the Junior Cameramen's Club at the Piccadilly, Hollywood, on the evening of July 8th.

The dinner was the first of a series of social affairs that the club will stage in addition to its regular activities. Among those who attended were Robert Laprelle of the Warner Bros. studios; Burnett Guffy and Clifford Shirpsier of the C. B. De Mille Studios; Eddie Cohen and Ira Hoke of the First National Studios; K. F. Green of the Hollywood Studios; and Bill Margolis, Dave Ragin, Anthony Urgan, Red Marshall, Hatto Tappenbeck and Frank Powlony of the Fox Studios.

☐ *News Notes of Junior Cameramen's Club*

Gregg Toland, ex-president of the Junior Cameramen's Club, is sojourning in New York. He has been there for three months and expects to stay three more. He is assisting Arthur Edeson, A. S. C., in the filming of First National productions in the East.

* * *

Max Cohen returned from a trip to Jasper National Park, Alberta, Canada, with Abe Fried, A. S. C. They made exteriors there for the Fox production, "The Land Beyond." The Canadian Pacific Railroad was unable to supply the baggage car needed by Max to bring back all the bottles ordered by the gang, and not wanting to disappoint the boys entirely he brought back labels from the empties that would have been full had the necessary transportation been provided. Question? Who made the full ones empty?

Behind the praise of the critic—

WHEN a critic applauds skilful photography, what does his praise mean? He may not know it—but it means praise of the cinematographer's instinct for distinctive, artistic treatment. And his genius for getting that treatment translated into film via camera and lighting effects.

One reason why such praise has been frequent is that Cooper Hewitt light has made it possible to carry out unusual lighting ideas. Our service department, of course, is always ready to help you. Just ask for "Mike" Shannon.



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Ira Hoke is representing John W. Boyle, A. S. C., in the use of the combination Akeley-Bell Howell camera designed by Boyle. His latest engagement for Boyle is with Von Stroheim's production, "The Wedding March." Boyle's invention makes possible the filming of a regular Akeley close-up at the same time that a straight scene with the Bell and Howell is made. Hoke is being assisted by Cliff Shirpser, also a member of the Junior Cameramen's Club.

* * *

Jack Marta and Bill Margolis have shed the "tin derbies" they wore all through "What Price Glory" where they ably backed Barney McGill, A. S. C., the chief cinematographer.

Explains North Pole Close-up in Official Byrd Motion Picture

The element of mystery that is suggested as to the taking of scenes wherein Lieut. Com. Byrd is shown, in the North Pole flight films, making his instrument calculations on the terrain, is explained in an opinion ventured by Jerry Phillips, who, a well known aviator of Hollywood, has piloted numerous cinematographers in photographic aerial expeditions.

The mystery that occurs to cinematography students relative to the Byrd official films is simply: who could have been the cinematographer of the scenes in question if Floyd Bennett, the sole other occupant of the plane, was busy at his task as pilot in the dash to and over the Pole, especially in view of the fact that the camera used was not independently or electrically driven?

"It is possible," according to Phillips, "that Bennett left the controls of his Fokker plane long enough to shoot the particular scene in question, in order that we might have a record of it for all posterity. Evidently the air conditions were ideal as the pictures indicate no jerkiness which would be attendant were the air 'bumpy.' This is the primary reason why the pilot was able to allow his ship a brief moment in which to keep its own course. When a pilot leaves his controls he must be able to sense the exact moment at which he must again take his ship in hand—or it really will not matter after all.

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cinematography possible. The courage of the cinematographer is admired by no one more than the aviator himself. Pilots universally recognize the sterling spirit which brings back pictures such as those taken by Byrd's expedition. We only wish that the public would be of the same discerning trend."

Amateur Cinematography

(Continued from page 7)

This gives you time to cut off the light of your projector, either by clapping your hand over the projection lens, or by closing the safety shutter. You will then have ended the showing of your pictures without the distracting white flare of the projector light appearing on the screen.

Be sure to keep your films free from dust and keep them flexible. The best way to do this is to keep them in the Kodascope humidor film cans. Keep the blotter in the bottom of the can moist, and this will assure your films being flexible. It also keeps your films free from dust.

Simple Filing System Given to Identify Amateur Films

A simple way to label the Kodascope four hundred foot humidor cans is by the use of white adhesive tape. This adhesive tape adheres easily to the polished surface of the humidor can and is permanent.

Secure some white adhesive tape one-half inch wide. Cut a strip of the tape about four inches long, and place it on the roller of a typewriter. Type the number of the reel and its title upon the tape. The tape is then removed from the typewriter roller, and affixed to the side of the humidor can. By so placing the tape on the side of the humidor can, it is easily read when there is a stack of such cans.

This method of labeling the Kodascope humidor cans affords ready reference to the number and title of the reel. It also has the advantage that the adhesive tape label may be removed quickly should it be necessary to change the number and title of the reel.

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Claim *that* Studio Shots May
Be Incorporated *with* Any
Background. ¶ Shadows Shown

DETAILS of the system of cinematography, known as the "Handschiegl Process," were announced this month by Max Handschiegl, inventor, and Ray Smallwood, well known director, who has acquired production rights to the process.

By means of the Handschiegl system, which is covered by a number of patents the first of which was filed in January, 1923, action taken in a studio in Hollywood can be made to appear naturally against a background photographed any place in the world.

Results Shown

In a series of preliminary tests illustrating the possibilities of the process, which is already being put to use in professional production, a shot of an actress in Hollywood is identically carried through a long range of backgrounds, running through forest fires, scenes in the South American mountain country, European village scenes, etc.

Dissolves

These various backgrounds follow each other in regular sequence as well as dissolving from one to the other.

Stock Shots

All of the backgrounds in question were ordinary "stock" shots and were not made with the particular use in view to which they were put. The process was also applied to still picture backgrounds, such stills being used as those from "Camille" with Nazimova and Valentino appearing therein.

Production Cost Reduction

The process is advocated by its sponsors as reducing production costs to a major degree. According to Handschiegl, stock shots may be utilized to the extent, for instance, of using formal ballroom scenes and, by introducing new and atmospheric action in the foreground or wherever needed, converting them into a cabaret sequence. It is also claimed that characters photographed by the process in Hollywood can be made, on the screen, to walk among the crowds at Fifth avenue and Broadway, New York City, or in a similarly difficult location.

Shadows Shown

A feature of the process is the naturalness with which the characters walk. There is no

"air-cushion" effect to their treading on the ground. This is due in a great degree, it is said, to the fact that natural shadows fall from the players no matter what is the background against which they are appearing.

Ordinary Projection

No special type of projection is required for the invention, ordinary projection methods sufficing.

Technical Facts

The technical description of the process is as follows:

Mask Made

The characters and action in question are shot on two negatives against a blue or a black background. A mask is made by the special development of one of the negatives. By employing suitable filters, the mask negative is made white and the other negative is made black.

Single Negative

When the mask has been made, an optical printing machine is brought in use; by this means the developed negative is placed in front of the other negative which, though undeveloped, has the same image; and the undeveloped picture is thereby masked with the developed negative. Whereupon any background may be photographed around the latent image—these backgrounds including stock shots, still pictures, oil paintings, miniatures, etc., thereby putting all the completed work on the original negative. In other words, no "dupe" film is used, but the entire record is embodied in the single negative.

One Operation

The camera which takes the two negatives is of Handschiegl's own device. The two negatives are both taken in perfect registration, and in the same operation.

Handschiegl is a prominent inventor in motion picture circles. His creations include color methods, and various types of machinery for motion picture use.

(Continued on Page 19)

really could be comprehensively pictured. Those on the ground were wholly unable to approach closely, because of the danger from bursting shells and shrapnel.

Officers in command were in complete ignorance of the extent of the disaster. They did not know what to expect next. Captain R. L. Berry of the navy learned that an International Newsreel cinematographer had flown over the "battle front."

He immediately got in touch with the newsreel's officials and asked that copies of the motion pictures and still photographs be rushed with all possible speed to Dover, where Brigadier General Hugh Drum, Admiral Plunkett and other officers waited to inspect them. An official navy car, carrying Lieutenant Gunnell, U. S. N., was dispatched to the Park Place station of the Hudson Tubes in Newark where S. H. Macean, news editor of International Newsreel, met it with a complete copy of the motion pictures and a projector, together with enlargements from the still picture negatives.

MacKean was accompanied on the trip by Captain Walter H. Wells of Governor's Island, representing the army. The distance from Newark to Dover was covered in record time.

A Marine on the running board waved all other cars off the road and despite heavy traffic the Navy car went through without a stop.

At Dover it was learned that General Drum had entered the reservation with other officers and the ride was resumed to the main gate of the arsenal, two miles within the line of troops.

The car promptly was passed and the pictures rushed over shell-torn roads to the "front," where General Drum was found in company with Captain Sayle, Captain Berry and others. In an impromptu "theatre," to the roar and whistle of exploding shells, surrounded by acres of trees laid flat, wrecked automobiles and shattered buildings, the officers eagerly studied the pictorial record that gave the information so eagerly desired.

From these pictures conclusions were drawn which enabled the officers in command to say with some certainty just how much danger remained of further explosions. General Drum and all of the officers concerned expressed to International Newsreel their thanks and congratulations on its enterprise.



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E. B. Du Par, A. S. C. Works on Vitaphone



A. S. C. Member Films Opera
Stars in Initial Applica-
tion of Warner Bros. Device

E. B. Du Par, A. S. C., has concluded the filming of the first public presentation of the Warner Bros. "Vitaphone." This presentation is in the form of numbers which, synchronized with the exhibition of "Don Juan," are rendered by six celebrities of the music world.

At Premier

The film photographed by Du Par will be used at the New York premier of "Don Juan," which stars John Barrymore, and will be employed in conjunction with the road showing of the same vehicle.

As an indication of the importance which the Warner outfit attaches to the "Vitaphone" rendition, a record price of ten dollars top for motion picture theatres will be charged on the opening night of the picture in New York City.

Films Hays

A feature of the special picture photographed by Du Par will be an address by Will H. Hays, who especially appeared before the A. S. C. member's camera for the event.

Hays' speech will follow the opening number which will be given, through arrangement with the Brunswick Balke Collender company, by the New York Philharmonic Orchestra, Henry Hadley conducting. This rendition will be succeeded by the appearance—vocal and visual—of Giovanni Martinelli who will be accompanied by the same orchestra.

In the order of their appearance, other artists photographed by Du Par will come as follows on the program: Marion Talley, Efrem Zimbalist, Harold Bauer, Anna Case and, again, the Philharmonic orchestra.

During Miss Case's vocal appearance, there are accompanying dances by the Casinos and music by the Marimba Band.

The appearances of the musical stars in the picture were made through arrangement with the Victor Talking Machine Company, with the single exception of that of Marion Talley, Metropolitan Grand Opera celebrity.

Du Par has been in New York City for some time working on the first of the "Vitaphone" offerings.

Made Research

His first steps on his important assignment was to conduct exhaustive research into the

intricacies of the invention. He worked in close alliance with engineers and authorities of the Western Electric Company and of the American Telephone and Telegraph Company.

He perfected the cinematographic feasibility of the device, with the result that, within a comparatively short period of time, it was applied to the important production, "Don Juan."

Du Par comes by his big assignment as a reward of merit. He has photographed many Warner Bros. Productions, including numerous of that company's pre-eminent successes.

Visual Education Meeting To Be Held In Chicago This Month

With a pedagogical array of distinguished educators on its faculty, the De Vry Corporation opens its second Summer School Session of Visual Education on Monday, August 23.

Instruction in all types of visual education is to be given free of charge to teachers, ministers, and business men recognizing the industrial value of such, as well as to any person interested in the progressive movement which it is the object of the school to promote.

Classes will be held at the Parkway Hotel in Chicago, Illinois. Amateurs in cinematography will be given special attention by members of the De Vry Corporations' practical staff. Additional information may be obtained from the Director, De Vry School of Visual Education, 1111 Center Street, Chicago, Ill.

Norma Shearer's next picture under the direction of Monta Bell will be photographed by Gaetano Gaudio, A. S. C.

"Tell It to the Marines," starring Lon Chaney, is being photographed by Ira Morgan, A. S. C., according to announcement from Metro-Goldwyn-Mayer.

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 Jackman, Floyd—Fred W. Jackman Prods.
 Jackman, Fred W.—directing Fred W. Jackman Prods.
 Jennings, J. D.—with Buster Keaton.
 Koenekamp, Hans F.—with Colleen Moore, First National, Burbank.
 Kull, Edward—with Universal.
 Kurrle, Robert—with Edwin Carewe.

Landers, Sam—
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 Lundin, Walter—with Harold Lloyd Productions, Metropolitan Studios.
 Lyons, Reginald—with Fox Studios.
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 Stumar, John—with Universal.
 Tolhurst, Louis H.—producing microscopic pictures, for Pathe.
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 Turner, J. Robert—with Fox Studios.
 Van Buren, Ned—
 Van Enger, Charles—with First National Productions, Burbank.
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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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By American Society
of Cinematographers



*View from Saanich Arm, sixteen miles from Victoria, British Columbia
Reproduced from location library of American Society of Cinematographers, Hollywood*

THIS MONTH:

**"Sea-Going" Cameras for "Old Ironsides";
How First "Vitaphone" Film Was Photographed;
Amateur Cinematography; Projection, by Earl J. Denison**

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AN Advertiser, too, is judged by the company he keeps. Published by one of the foremost professional organizations in the United States, the American Cinematographer appeals to an intelligent clientele, a clientele that buys, a clientele whose purchases run into thousands for the purpose of keeping apace cinematographic progress. National advertisers have long since recognized this fact. Truly, he who advertises in the American Cinematographer keeps excellent company!

The EDITOR'S LENS • • focused by FOSTER GOSS

Blanketing the World

FROM an organization which was purely local at the time of its origin, the American Society of Cinematographers has grown until its scope at the present time spans the world, according to Daniel B. Clark, president of the A. S. C., in the "Studio Section" of a current number of the *Exhibitors Herald*.

Correspondence clearing through the offices of the Society in Hollywood comes from every nook of the civilized world. As the organization of the foremost cinematographers of all times, the A. S. C. is turned to as the authority on cinematographic matters. From India, China, Russia, Australia, Java, New Zealand, South Africa, the Philippines, as well as from every state in the Union, there arrive many and varied queries concerning the affairs of motion photography. Letters bearing postmarks come from obscure outposts of civilization seeking advice as to how to cope with primitive conditions which defy the amateur's efforts to deal successfully with the making of motion pictures for local use or otherwise.

The fame of the A. S. C. has been spread in no small degree by the countless travels of various of the Society members who have circled the globe for many thousands of miles.

Herford Tynes Cowling, A. S. C., has crossed and re-crossed the lines of latitude and longitude so many times that his name as a traveler is on the par with his renown as a cinematographer. Some suggestion of this is indicated by the listing of his exploits in no less an authority than "Who's Who." Cowling has cut through the jungles of Africa as well as of India, while he preceded even the Roosevelt expedition in carrying a camera into forbidden Tibet. He was able to accomplish this unprecedented feat through the co-operation of the celebrated Sir Hari Singh, who later commissioned Cowling to officially photograph his coronation. Cowling made a flying trip from Suffolk, Va., to India to film the ceremony pictures which, though they were to rest only in Sir Hari's private archives, are said to have brought Cowling a reward well in the five figures.

Len Roos, A. S. C., has carried the name of the American Society of Cinematographers into all parts of the Antipodes. He at present is photographing in Australia and New Zealand. On his trip to Australia last year, he was tendered, prior to his departure, an elaborate banquet in Sydney at which leaders in the Australian film industry were the hosts with Guy Bates Post as master of ceremonies.

John Dored, A. S. C., keeps the fires of the Society burning in the Arctic circle territory. His headquarters are located at Riga, Latvia. At the time he made a prohibited dash into Russia to capture films of Lenin's funeral, he was imprisoned by the Reds for days until, through information furnished by the correspondent of an American newspaper, officers of the A. S. C. and friends in this country learned of his fate and succeeded in effecting his release.

Charles Rosher, A. S. C., has been in Berlin during the past winter under special contract to Ufa, and is now reported as having signed with British National pictures. Rene Guissart, A. S. C., maintains permanent headquarters in Paris, which he uses as a base of operations to photograph special European material for American producers. Guissart's latest work in an American production is in "Ben Hur," on the production of which he was one of the cinematographers in Italy. Previously he had filmed "Chu Chin Chow" in Berlin. John F. Seitz, A. S. C., has just returned to Hollywood after two years on the Riviera where he was chief cinematographer for Rex Ingram productions. Among the other A. S. C. members who have carried its name beyond the waters recently, are Robert Kurrle, who was chief cinematographer for Edwin Carewe, who produced First National's "Son of the Sahara," on that desert; Charles Stumar, A. S. C., who photographed for Universal, on Edward Laemle's expedition to Europe; E. Burton Steene, A. S. C. Akeley camera expert, who traversed Europe, the Balkans and Mesopotamia for educational cinematographic work; William Beckway, A. S. C., who went to Europe to photograph Rider Haggard's "She"; and Ernest Haller, A. S. C., who filmed J. Gordon Edwards' "The Shepherd King" in Italy and Egypt.

Eye Strain in Cinema Theatres?



Commission Makes a Special
Investigation and Summarizes
Findings; Eyes Are Safe

Motion pictures do not injure the eyes, vision experts of both America and England find, according to the Eye Sight Conservation Council of America in a report summarizing investigations.

No definite reports of any specific harm or injurious effect, and but few complaints of inconveniences are disclosed. "This leads to the conclusion," says the Council, "that under favorable conditions, moving pictures do not cause serious eye fatigue.

"Another important reason for this is the fact that viewing motion pictures is distance vision which does not demand the degree of effort or strain in the use of the eyes as would be involved for near vision."

Recommendation

Illuminating engineers of London have formulated certain recommendations in regard to the position of the seats with respect to the screen. These engineers found that eyestrain results when the eyes of spectators are directed upward at an abnormal angle due to the close proximity of seats to the screen.

Seats, the London experts hold, should not be too far to the side, as such position constitutes a possible source of eyestrain. One serious cause of eyestrain, they discovered, is flicker or jerkiness of movement caused by the faulty mechanism of the projecting apparatus. Scratches on old film, faulty operation, as well as imperfect apparatus should be eliminated, it was said.

Special precautions are urged when portable machines are used for exhibitions before English school children. The London engineers recommend that general illumination of the theatres should be properly distributed and of as high intensity as possible without interfering with the display of the pictures.

Efficiency of Eye

For many years a series of experiments have been carried on to determine the efficiency of the eye under different conditions of lighting.

"The effect of motion pictures on the eye indicates," the Illuminating Engineering Society of New York reported, "that while the eyes are strained a great deal by the observa-

tion of moving pictures, even in the better moving pictures houses, they are damaged little more by that, in all probability, than they are by reading steadily the same length of time under the greater part of the lighting that is now in actual use."

While it is evident, the Eye Sight Conservation Council points out, that motion pictures may cause eyestrain, the reason is usually traceable to prolonged concentration of the eye, defective eyesight, position of the observer, faulty general illumination, or poor films, bad projection, faulty operation. All of these conditions, it was declared, are avoidable.

"Prolonged concentration of the eye," said the Council's report, "is not a fault of motion pictures, although it is most likely to follow because of intense interest created by the picture. Long continued use of the eyes for any purpose will cause eyestrain.

Rest Periods

"Usually in the ordinary uses of the eyes at work or reading, frequent rest periods are unconsciously provided due either to a lack of the power to concentrate or to surrounding influences, interruptions, etc. Observers should avail themselves of every opportunity that is offered to rest their eyes during a display.

Defective Eyes

"In all probability most of the complaints of eyestrain from viewing motion pictures are due to defective eyes. Resulting headaches or other annoying discomforts are likely to be indications that the eyes should be examined and defective vision corrected.

"Observers should not sit too close to the screen. The minimum distance depends upon the height of the picture from the level of the line of vision and ordinarily the distance of the observer from the screen should not be less than twenty or thirty feet.

Distortion

"The distortion noticeable in the picture when viewed from seats placed too far to the side is likely to be annoying. The best position to view motion pictures is directly in

(Continued on Page 26)

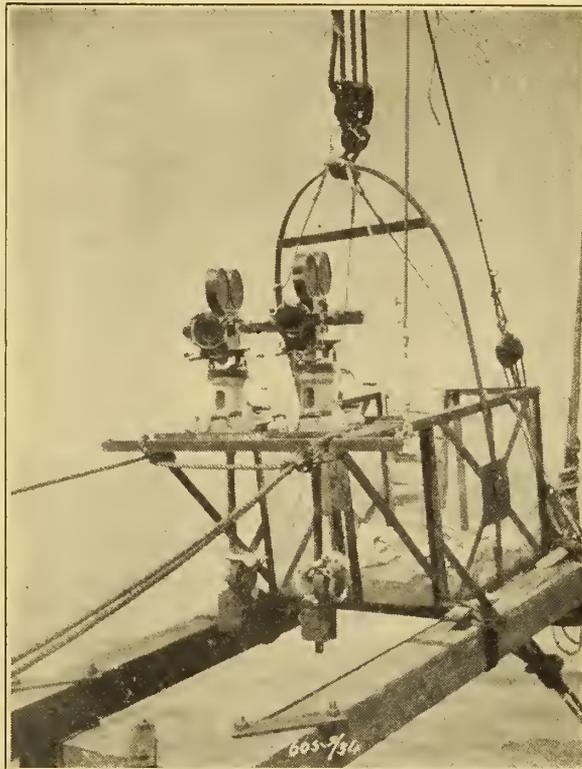
"Sea-Going" Cameras for "Old Ironsides"



Pendulum and Hydraulic Apparatus Attached to Camera to Show Tossing of Sea.



Above—Alfred Gilks, A. S. C., shown with one of the "nautical" cameras used to film "Old Ironsides." Suggesting the gyroscope, the cameras maintain their equilibrium no matter how great the sway of the ship, thus showing tossing of the sea realistically. Right—Steel cage made to be swung anywhere in the rigging where it was desired to place cameras.



Filming a production of such magnitude as Paramount's "Old Ironsides," entirely at sea, called for a new code of camera dynamics, with the result that a lion's share of cinematographic pioneering fell on the shoulders of Alfred Gilks, A.S.C., chief cinematographer on the latest James Cruze vehicle for Famous Players-Lasky.

Gilks was particularly qualified for the important task assigned him, not only from the standpoint of his ability as a cinematographer, but by virtue of the fact that he qualified as a sea-going camera artist, the A.S.C. member having served his country in the Navy during the war.

Ideal Medium

So the traditions of the American fighting vessels found an appreciative and understanding medium of expression through the lenses of Gilks' camera which, in charge of a cinematographer and sailor, stood well to bring all the salty, pounding glory of "Old Ironsides" to the screen.

Plotting the photographing of this production was like laying out the campaign to break up the Armada—possible, but apparently not so feasible. A difference is presented between filming a picture with a few maritime scenes, and one which is photographed wholly on the high seas.

Natural Roll Desired

Because most of "Old Ironsides" had to be shot on board a sailing vessel at sea and a good portion of it during a real storm, it was desired to show on the screen the actual and natural roll of the ship.

Same Movement

With an ordinary tripod "anchored" to the deck or otherwise fastened to the ship, this would have been impossible. In such an arrangement, the camera is part and parcel of the ship. The movements of the camera coincide with those of the ship.

Horizon Jumps

The result is that, instead of showing the tossing of the ship itself on the screen, the

horizon line appears to be tipping first one way and then another. The rougher it is, the more the ocean seems to jump about, while the ship, because the camera follows its motions, seems to be perfectly steady. Naturally, in the interest of realism, it was desired to portray the rolling of the ship, and not the illusionary heaving of the horizon.

The important duty then was to devise a tripod which would make possible the showing of the movements of a real ship on the screen. There is a form of "sea-going" tripod that has been in common use for a long time. It, however, has marked limitations in that once the weight is started swinging by a roll of the ship, the camera continues to swing whether or not the ship continues to do so. This of course gives an unsatisfactory result. This form of tripod has its head swung in gimbals, just as a mariner's compass. A pendulum with a weight attached at the bottom counterbalances the camera.

Three Types

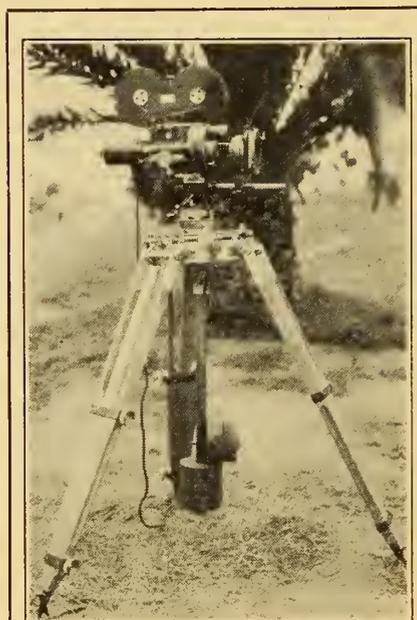
The tripod which we used was developed after a great deal of experimental work in the Lasky camera shop. Three different methods of controlling the sway of the pendulum were designed by Leigh M. Griffith, mechanical engineer. The tripods were then built in the shop. They were later tried out at sea under actual conditions. It was found that a hydraulic scheme of dampening the

swing of the pendulum was much more satisfactory than either of two mechanical systems, so the former type was adopted.

Hydraulic Method

The hydraulic method works in the following manner:

The motion of the pendulum swinging is transferred by shafts and gears to two double pistons working in a cylinder against oil. A tube connects the opposite ends of the cylinders. This tube is fitted with an adjustable valve by which the amount of oil flowing from one end to the opposite end of the cylinder may be controlled. By adjusting these valves it is possible to control the swing of the weighted pendulum to fit the roll of the ship at the time the scene is to be taken.



Another view of "sea-going" camera, showing pendulum arrangement between tripod legs.

Panchromatic Used

"Old Ironsides" is the first Lasky picture to be photographed exclusively on panchromatic film.

"The reason," Gilks states, "I decided to use panchromatic was because Mr. Cruze will not have make-up on any of his people, including the leading man and the leading woman. I realized how sunburned and tanned every one would become in three months of location shooting at sea and at Catalina Island. It was imperative that I use 'pan' which gave me a wide range of filters to bring into play properly photograph people in the foreground and to hold down the bright sky and water in the background.

"Technicolor panchromatic was used to shoot certain night scenes in the daytime and gave very satisfactory results."

Directions By Radio

Mechanical proficiency in the form of radio was again brought into use to deliver commands over the wide area which was being photographed during the course of the production.

"Radio," according to Gilks, "proved a godsend in this picture. It was a marvelous help in the enabling the giving and changing orders at any instant. We know just when to begin photographing and when to 'cut.' As a result, no useless footage was shot because of any confusion of signals.

(Continued on Page 16.)



Charles J. Van Enger, A. S. C., and E. Burton Steene, A. S. C., are in Guadalupe, Calif., on location for the second time within the past month. They are photographing scenes for First National's "Men of the Dawn," for which Van Enger is chief cinematographer. Steene is making special Akeley shots for the production. George Archainbaud is directing and Milton Sills is starred. The cast includes Viola Dana, Charles Murray, Arthur Stone, Montague Love and William V. Mong.

* * *

James Van Trees, A. S. C., is photographing Colleen Moore in "Twinkletoes." Charles Brabin is directing.

* * *

Reginald Lyons, A. S. C., has completed the filming of one of the latest of the Van Bibber series for Fox. Earle Fox is the star, and Robert Kerr directed.

* * *

H. Lyman Broening, A. S. C., is filming "Rose of the Teuements," an F. B. O. production starring Shirley Masou. Phil Rosen is the director.

* * *

Frank B. Good, A. S. C., and Perry Evans, A. S. C., are in San Francisco on location for "Johnny, Get Your Hair Cut," Jackie Coogan's latest production.

Harold Wenstrom, A. S. C., is filming "The Lady in Ermine," in which Corinne Griffith is starred. James Flood is directing. Wenstrom will have an opportunity for pictorial effects, as the story is laid amid a martial background in Italy and Austria during Napoleon's campaigns.

* * *

Ross Fisher, A. S. C., is photographing "A Regular Scout," starring Fred Thomson at the F. B. O. studios.

* * *

Harry Perry, A. S. C., will leave shortly for another trip to San Antonio, Texas, which will be used as a location for the production of "Wings," on which Perry is chief cinematographer. The story deals with the air forces during the war. Perry has had extensive experience in aerial cinematography, and has had so many hours in the air that he has lost count of them.

* * *

Sol Polito, A. S. C., is shooting "Flame of the Border," starring Ken Maynard for First National.

* * *

Bert Glennon, A. S. C., is concluding the cinematography on Famous Players-Lasky's "Hotel Imperial," starring Pola Negri. Maurice Stiller directed.

* * *

Dan Clark, A. S. C., is shooting "The Canyon of Light," Tom Mix' latest starring vehicle for Fox.

How First Vitaphone Film Was Photographed



¶ *A. S. C. Member Has Soundproof Booth Built to Prevent Recording Studio Noises.*

¶ *Du Par adapts Camera for Vocal Reproduction Work; Storage Batteries Used for Lights.*



An interesting insight into the cinematographic difficulties which had to be conquered before the new celebrated Vitaphone process, used by Warner Bros., in conjunction with "Don Juan," was reduced to the plane of commercial acceptability is shown in an account of the invention by E. B. Du Par, the A. S. C. member who surmounted its photographic barriers and thus made possible the actual application of the device.

Noise Cut Out

"First of all," Du Par reports, "the noise incident to the taking of a motion picture made it necessary to shut the camera in a special sound-proof booth. With the camera, I was locked in the booth. I shot through a small aperture, and looked out through a small peek hole. However, the construction of the booth does not permit of the booth's occupant to hear anything from without. It is necessary to depend entirely on light signals for starts and fades.

Synchronized

"The camera is run by a motor which is synchronized with the recording machine



E. B. Du Par, A. S. C., at camera in sound-proof chamber, especially constructed to overcome studio noises in the filming of the first "Vitaphone" presentation, to be shown in conjunction with Warner Brothers' "Don Juan," starring John Barrymore.

motor. Instead of running at the regular speed of 16 pictures per second, we exposed at the rate of 24 per second. The recording machine is so located that it is in another part of the building, far enough away so that no sound can get to the actual place of photographing. The apparatus in the recording room is in charge of a recording expert. Another expert is stationed at the 'mixing panel,' as we call it, his duties being to listen to what is being recorded and also to watch a very sensitive dial

that indicates every little variation of sound. When the dial starts to jump up to a certain mark, he has to vary the amplification on the microphone so as not to cut over certain high notes; high frequencies are apt to make the cutting point on the recorder break through the delicate walls of wax and spoil the record.

Far Removed

"The master recorder," Du Par continues, "was stationed on the sixth floor above us.

(Continued on Page 16)

PROJECTION • Conducted by Earl J. Denison

Troubles of the Projectionist



Standardized Methods for
Care of Film Eliminates
Expensive Economic Waste

(A lecture delivered by Earl J. Denison, before the American Projection Society.)

Until the last year or two if you had made an inquiry of any projectionist as to what his great single trouble was, it is the foregone conclusion that the answer would have been "condition of film."

If branch managers had been approached with the same query, in the greater majority of the cases, the answer would be the same. It appears therefore, that your troubles and his troubles were closely related. In the past a great deal of time was wasted in useless recrimination between exchange managers and projectionists. During the period that these recriminations were being indulged in, little constructive effort was made to determine the cause for the great amount of excess film damage then existing.

Shortly after my return from Europe in 1919, I was employed by the Famous Players-Lasky Corporation to investigate the cause for the great amount of excess film damage which had been of long standing and was costing the company a great deal of money, and only spasmodic attempts had been made to find a remedy, and to my mind the entire proposition had been approached from the wrong angle.

Conditions Studied

My first commission was to visit all of our exchanges in order that I might observe actual conditions. In following up cases of specific film damage which would be reported by an inspection department, as having been returned from a certain theater, I would then visit that theatre, inspect the equipment and make a general check-up on projection conditions. In all, I inspected approximately 300 projection rooms throughout the country.

Improper Splicing

After classifying the kind of damage, the final analysis conclusively proved that approximately 75 percent of the excess film damage was traceable to improper splicing in our own exchanges. After presenting the proper executives with sufficient evidence I was again commissioned to devote my entire

time in correcting this unnecessary evil, and in following up this particular line of work for a period of seven years a great many interesting discoveries were made regarding the proper care and handling, inspection, and splicing of motion picture film. In most cases examiners in our exchanges knew absolutely nothing about film and each examiner was making a different kind of a splice of various widths, shapes and sizes. There had been practically no attempt at standardization and in the majority of cases, film splicing was done in the crudest manner possible; their working tools being a pair of shears and a razor blade; with any kind of cement kept in uncorked bottles and applied with any kind of a brush that could be purchased in the nearest store. Mis-framed splices were as common as framed splices with no attempt being made to splice in frame, in fade-outs.

Preferred Hand Methods

Practically everyone connected with exchanges was antagonistic toward any kind of a mechanical device for use in splicing film, their argument being that better splices could be made entirely by hand.

Another very common cause for film damage was the use of bent and loose reels. Also there was no attempt at that time for the proper handling of the film; that is, keeping the film in containers while being inspected and awaiting shipment.

Splice Standardized

Our first step was to standardize on the type of splice, method of handling, and equipment. The only thing obtainable was the ordinary splicing block which simply registered the perforations and applied pressure to the splices. But even this crude equipment showed a remarkable improvement in conditions in a very short time. But it was one continual battle to get examiners to use the equipment that we installed; we were constantly carrying on research work trying out devices, in fact doing everything possible to still further improve conditions.

Although we realized a certain percentage of the damage was caused by improper

(Continued on Page 17)

Amateur Cinematography

32 Exposures Per Second For 'Eyemo'

A double speed mechanism for the Eyemo camera, is announced by the Bell & Howell Company, manufacturers of the Eyemo.

The new mechanism permits the taking of pictures at the rate of 32 exposures per second, in addition to the standard speed of 16 per second.

On Camera Face

The increased speed is put into force instantaneously by manipulating the speed adjusting lever which, located on the face of the camera, controls the governor of the instrument.

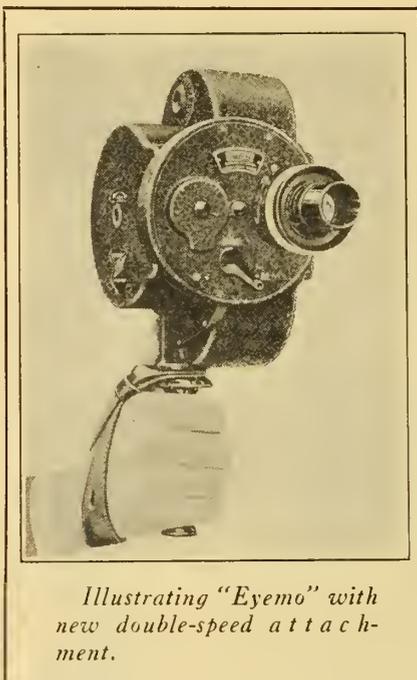
Used On Current Models

The double speed mechanism, Bell & Howell officials state, may be embodied in Eyemo cameras now in use, the addition to the camera being made at the factory of the company in Chicago.

Spring Motor

As in the past, the 32 per second exposure speed will be motivated by a spring motor, the Eyemo being entirely automatic. Likewise, no tripod will be required.

Besides facilitating the cinematographic activities of those engaged in golf, rowing, horse racing and other forms of sports and athletics, the addition to the Eyemo equipment is regarded as being especially adaptable for studio, newsreel and other professional motion picture use. The Eyemo is being used professionally by International, Pathe, Fox and Kinograms newsreel organi-



Illustrating "Eyemo" with new double-speed attachment.

zations; and by Famous Players-Lasky, Warner Brothers, Mack Sennett, Universal, Metro-Goldwyn-Mayer, Chaplin, Christie and other motion picture studios. It also is being used by various exploring expeditions.

Sponsors Theatre Community Film

The Bell and Howell Company is sponsoring the idea of motion picture theatre owners "putting the neighborhood in the movies."

Like Idea

An increasing number of exhibitors are said to be responding to the promotion possibilities suggested by the idea.

Details of such a community arrangement are offered by the Bell and Howell Company, 1801 Larchmont avenue, Chicago.

E. Burton Steene Purchases 'Eyemo'

E. Burton Steene, A.S.C., Akeley camera specialist, has added an Eyemo to his array of camera equipment.

Steene's paraphernalia includes an Akeley camera, a Bell and Howell professional and a wide variety of lenses.

The A.S.C. member will use the Eyemo for special work and difficult shots.

Camera Follows Projector Trail

Owners of the De Vry standard projector are proving to be among the first purchasers of the new De Vry automatic standard camera, officials of the De Vry corporation, Chicago, declare.

Standard Size

The De Vry projector, built to take standard size film under any conditions, has been in international use for many years. Within the industry, De Vry outfits are owned by Al Christie, Cecil De Mille, Corrine Griffith, Mary Pickford, William S. Hart, Ben Turpin, the Famous Players-Lasky Corporation, Metro-Goldwyn-Mayer and Warner Brothers.

Official Use

Some time ago, newspaper reports stated that, on a western trip, President Coolidge viewed motion pictures while traveling on the presidential train. Investigation showed that a De Vry projector was used. Similarly, the same

(Continued on Page 16)

Many—and important

Eastman Panchromatic Negative Film is sensitive to bright reds and yellows, as well as to blues and violets—all colors can be rendered in their true black and white relationship.

The uses of the film are many—and important: for photographing colored sets and costumes, for accurately rendering flesh tints in close-ups, for outdoor sets, including photography of clouds against a blue sky.

But write for booklet, "Eastman Panchromatic Negative Film for Motion Pictures", that tells you *all* about its properties and uses.

Motion Picture Film Department

EASTMAN KODAK COMPANY

ROCHESTER, NEW YORK

BELL & HOWELL



Above: master of trick shots E. A. Dupont, director of Universal's super-Jewel, "Love Me and the World Is Mine," had this battery of Bell & Howell Cameras for one shot. Dupont is under the umbrella. Jackson Rose, his first cameraman, is second to right from him. At the right: Cameraman Jackson Rose, Charles Puffy, Dupont, Mary Philbin and Norman Kerry in a scene from the same production.



The Never Obsolete Pioneer

B. & H. PROFESSIONAL STANDARD

A SCREEN production can be no better than the cameras used in making it. The work of the writers, the continuity men, property men, directors, actors, camera men, and all others who contribute to the success of a production, mean nothing until their efforts are focused in the eye of the camera and faithfully recorded on film so that others can see it.

For 19 years the Bell & Howell Pioneer Standard Professional Camera has been a familiar "property" to those who have reached the heights of filmdom. This Pioneer Camera has constantly kept pace with the developments of the industry. Through it the best thought, talent and effort of the profession have been brought to the eyes of the world for its appreciation and rewards.

Jackson Rose, in the pictures above, also a Pioneer, operated Bell & Howell's Camera No. 1, way back in the Essanay Days. He still puts his faith in a Bell & Howell and says he always will. The reason is that though the B. & H. may become old it never becomes obsolete. Basically patented pilot register movement and interchangeability of detail parts keeps it constantly up to date.

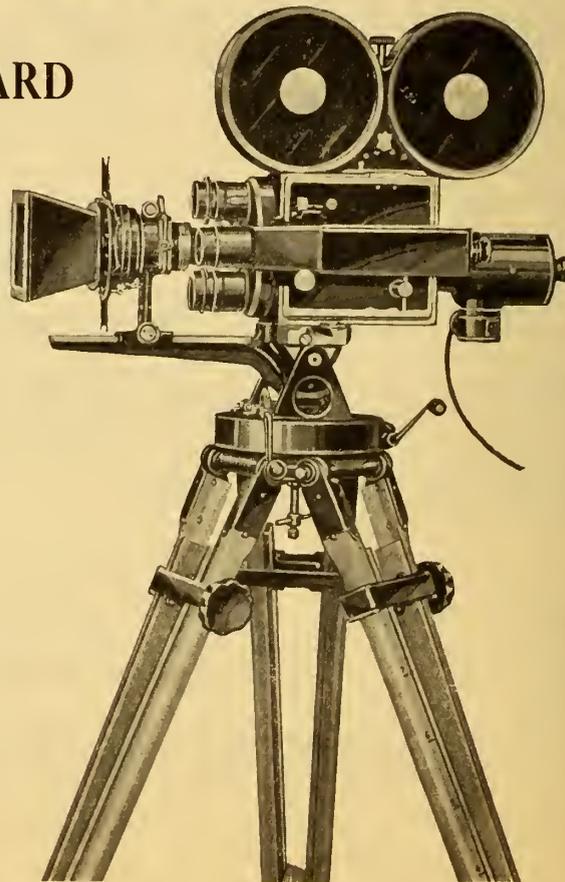
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LL CAMERAS

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FOUR Great Fields of Professional Service

- 1.—Newsreel Scoops.
- 2.—Stunt Pictures by Professional Producers.
- 3.—Exploration Pictures.
- 4.—“Neighborhood Movies.”

Profit for You
 in one or more of these uses

1. In response to a universal demand for a light, automatic, professional camera which would approximate the work done by our larger Pioneer Standard B. & H. Camera, the Eyemo was perfected and made available for general use.

Today it is considered indispensable for field use in every enterprise involving the making of professional motion pictures.

In Newsreel Scoops it stands supreme, having given the world first visual news of the sinking of the Japanese Steamer “Raifuku Maru,” the rescue of the “Antinoe” crew, the Mauna Loa volcanic eruption, the recent Arsenal explosion and many other unusual happenings which have been flashed on the screens of the world. Eyemo is used by International, Pathe, Fox, Kinograms, Universal, Paramount and others to scoop the pictures because it is thoroughly professional—and so compact and light that it can *instantly* be brought into use wherever things are happening.

2. Eyemo is used for professional production purposes by all of the following: Universal, Famous Players-Lasky, Warner Bros., Mack Sennett, Metro-Goldwyn-Mayer, Charlie Chaplin, Christie and others. These people consider Eyemo indispensable for getting stunt shots, special effects and testing locations.

3. Eyemo has been used in every recent exploring expedition of importance. It adds little to the weight of materials to be carried—and *much* to the weight of historic evidence brought back. The following expeditions are among those Eyemo-equipped:

- Byrd Polar Expedition
- Amundsen-Ellsworth Polar Expedition
- Spee-Jax Expedition
- Bering Sea Expedition
- Third Asiatic Expedition
- Smithsonian-Chrysler Expedition to Africa
- African and Mongolian Expedition of the American Museum of Natural History
- U. S. Department of Interior Geological Survey. (Alaskan)

4. The most recent activity of Eyemo is “putting the neighborhood in the movies”—the new idea that is coining money for local exhibitors. The Chicago Daily News has instituted a local screen service which has already been accepted by forty theaters. The Detroit News and other newspapers and independent exhibitors everywhere are also using the idea. It is bringing wonderful results in box-office returns.

The coupon here will bring you further information on any use of Eyemo which interests you. Mail it.

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 1827 Larchmont Ave., Chicago, Ill.

Please send me your special circular describing the EYEMO Camera and its uses.

Name

Address

Vitaphone

(Continued from Page 10)

"He is surrounded by dials whereby he can tell just what the vocal actions of the artists are. He is also attended by a large horn, about five feet square, in which he listens for any foreign noises. The microphones are so sensitive that he can detect if anybody on the set makes the least noise, such as walking, whispering or even the flickering of a light. If such are recorded, then the record is ruined. A flicker of a light sounds out like a pistol shot. This makes for a severe test on the lights. A number runs about ten minutes, or between 900 and 1000 feet. On some sets I have to use big storage batteries, weighing about 400 pounds each; seven of them are required to run a G. E. light of 150 amps. I use batteries to avoid generator noise. On the same lights, we had the gears changed from metal to fiber in order to eliminate gear noise on the automatic feed light.

Adapted Camera

"Since beginning this work," Du Par states, "I have almost remodelled my camera. I use 1000-foot magazines, high-speed shutter, leather belt, special clutches on the take-up spool, and a light signal built right in the camera.

"There is somewhat of a difference in photographing motion picture and then grand opera stars. In the past several weeks I have filmed Mischa Elman, violinist; Efrem Zimbalist, violinist; Harold Bauer, pianist; Giovanni Martinelli, tenor; Marion Talley, and the New

York Philharmonic Orchestra of 100 pieces.

"A strange incident occurred when we were taking 'Swaunee River.' Everything was still, and I had just received the signal to start; I flashed back the signal that I was fading in and everything was going nicely when I noticed frantic signals to stop. Looking out the peek-hole, I saw that every one was exceedingly excited. The cause, I learned, had been the screams of a colored janitress who claimed that she had seen the late Oscar Hammerstein walking across the balcony. It was eleven o'clock in the morning, and it is said that it was his old custom to walk across the balcony at that time in the old Manhattan Opera House which we were using to work in. This was the third time that the janitor's force had claimed seeing Mr. Hammerstein, and of course the commotion ruined that shot."

Amateur Cinematography

(Continued from Page 12)

projection outfit was employed by the MacMillan expedition to exhibit pictures to the Eskimos.

The De Vry projector will be used as a part of the deluxe equipment of the "land-cruiser" trains of the Raymond Whitcomb Company.

New Attachment For Slow Motion

The Eastman Kodak Company is marketing a device whereby slow motion pictures may be made with the Cine-Kodak A, f. 1. 9.

Different Rates

The regular crank is removed and a four to one gear ratio crank is substituted. With the turning of the crank at the rate of two turns per second, with the result that the finished picture is slowed down proportionately.

"Sea-Going" Cameras

(Continued from Page 8)

"A low-powered broadcasting set, operated by batteries, was set up at a vantage point near the director wherever worked. During the weeks required to do the battle stuff, everything was controlled by radio. At times as many as twenty receiving sets were used.

"Movement on more than a dozen fighting ships and as many tugs, action at the fort, instruction to cinematographers on the hill getting long shots, cinematographers on board the ships getting close-ups, were controlled from Mr. Cruze's microphone.

"Operators at the receiving sets signified that they had received the message by the wave of a flag or the toot of a whistle. The electricians were able to move the broadcasting outfit to a ship, barge, side of a cliff—in fact, any place the director wished—almost as quickly as the cameras could be moved and set up. Having seen the enormous possibility of this form of communication while serving on sub-chasers during the war, I suggested the use of radio to the director while we were preparing the picture, and fortunately for all concerned the suggestion was carried out."

PROJECTION

(Continued from page 11)

handling and the carelessness of the projectionist, we felt that if we could thoroughly clean up exchange conditions we would then be in a position to further eliminate the trouble by going direct to the projectionist, and I want to be perfectly frank with you when I say that conditions under which film was handled in many theatres, (not necessarily the small town theatres) were positively disgraceful. Not one theatre in a hundred ever possessed any kind of a splicing block or patch press, as they were called at that time. There was no attempt at registering sprocket holes or keeping the width of the splice within certain dimensions, etc., etc. Film arrived from the theatres with leaders parts, end titles, tail pieces, torn off, rolled up and stuck in the shipping case. This cost a great deal of extra work in the inspection rooms at exchanges, and sometimes resulted in the exhibitor not getting the show he had booked.

Take-Up Tension

Another common fault in the theatre, was excessive take-up tension which claimed its percentage of the film damage. Worn sprockets, excessive aperture tension, worn tension springs, worn magazine valve rollers, emulsion deposit, etc., etc., also were responsible for a certain percentage of the film damage.

In working out the present day standards in our exchanges *which have absolutely proven to be right*, we had to disregard many theories and much equipment; and understand that all the time when we were carrying out this work in the field we were also testing splices and film on especially rigged projectors. We finally standardized on the full hole splice and schooled our examiners in the proper method of making this splice and we insisted under penalty of dismissal that the full hole splice and no other must be made at all times. We had reached the point in the manual inspection and splicing of film that we believed to be final, and we felt that if we could get the proper kind of automatic or semi-automatic film splicing machine that was adapted for exchange use, and would

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The De Vry Corporation, world noted makers of motion picture projectors, announces a new movie camera holding 100 feet of standard film at the amazing low cost of only \$150.00.

This remarkable new camera weighs 9 pounds and is $8\frac{1}{2} \times 6\frac{1}{2} \times 3\frac{3}{4}$. Handsome all-metal, grained-leather finished case. Accurate, automatic footage meter. Three view finders: 1—direct on the film, 2—direct on the scene, 3—right angle view finder in upper right corner. F 3.5 anastigmat lens on micrometer mount.



Any standard lens can be fitted to the camera including telephoto. Focusing range—2 feet to infinity. Instantly removable aperture.

Amazingly Low Price - - Only \$150^{.00} =

The low price of the De Vry does not mean a sacrifice of quality of material or workmanship. It is due entirely to the quantity production machines constructed by De Vry to avoid the expense of assembled and handwrought jobs. This movie camera must be seen by professional cameramen to be appreciated. It has all the features of other cameras and features the others do not possess.

All other standard film automatic movie cameras sell for \$350.00 and up! We welcome a comparison of the De Vry at the low price of only \$150.00 with that of higher priced cameras.

Ask Your Dealer

Your dealer will gladly show you the De Vry. If your dealer cannot give you this information, write us direct. A postcard will do.

The DEVRY CORPORATION
1111 Center Street Dept. 8-X Chicago, Illinois

stand up under heavy work, our problems would be solved.

It remained for the Bell & Howell Company of Chicago to furnish us with such a machine, but it was necessary for them to change their positive splicing machine so that it would give us the full hole splice. It was also necessary to put a number of other special attachments on the machine which we believe to be highly essential in exchange work. Today every one of our 41 exchanges in the United States is equipped with a Bell & Howell splicing machine. Our laboratories and film depot are all similarly equipped. This machine has more than stood the test in the quality of the splice, ease and simplicity of operation and speed in making splices. The plates on which the splices are made are heated to about 120 degrees F. electrically. The heat not only acts as a binder to the splice but makes the cement quick drying.

Special Theatre Type

Negotiations are in progress at this time for the manufacture of a special theatre type of splicing machine and I assure you that once projection rooms are equipped with splicing machines that will make the same kind of a splice which we are making in our exchanges, your troubles and our troubles will be reduced materially.

Six Primary Causes

In order that there would be no mistakes made in developing apparatus, methods, and standards for splicing film, it was necessary to make several slow motion pictures showing the action of film in projectors under actual operating conditions. We can safely say that there are six primary causes for film damage which should be studied and avoided.

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 damage the film.

Cause No. 2. Splicing 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 probable 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.

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Cause No. 4. Too much or too strong a cement. We say "splicing" the film, when it is more correct to say "welding" the film. The cement attacks the celluloid base of the film and when the 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 make threads differently from the others, it 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.

Not only has a great deal of damage resulted from improperly made splices, but oftimes the presentation of a picture is greatly marred. A bad splice also constitutes a fire

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hazard. Exhaustive experiments and research have proven conclusively that the best 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: Perforations 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.

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 react in better service from the exchanges.

The Famous Players-Lasky Corporation, as well as this writer, is ready and willing at all times to co-operate with the projectionist for improvement in projection and the eradication of film damage.

Goerz Markets Negative On Special Spools for "Eyemo"

Negative raw stock, par speed, in special daylight loading spools, is being marketed by the Fish-Schurman Corporation, sole distributors of Goerz motion picture raw stock.

The spools may be obtained at both the New York and Hollywood offices of Fish-Schurman, as well as from the Bell and Howell Company in Chicago.

New Condensers Made From Heat-Proof Optical Glass

Details of the manufacture of "S. O. G. Condensers" were divulged this month by the Fish-Schurman Corporation, agents for the condensers.

The product is made from an optical and heat-resisting glass, known as "Ignal" glass, which has a low coefficient of expansion, .0000040 between 32 and 320 degrees F. While the usual run of optical condensers withstand changes to temperature to 120 degrees F., this form of glass is impervious to changes to 350 degrees and more, it is said.

Helping you to "get it on film"

"GET it down on paper!" is the slogan of the business man — and the poet. With directors and cameramen, the phrase becomes "Get it down on film!"

And "the Coops" help you to do that. For under their constant, uniform, dependable light cameramen can take each scene at its very best.

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Cinematographer Is Key Factor In Film's Success, Says Writer

BY JOSEPH L. KELLY

Jerome N. Wilson, well-known author, regards the cinematographer as the most valuable ally which the writer may have in transferring a scenario to the screen.

Wilson, who, it is reported, has just sold to First National the original story, "It Could Have Happened," which will be a forthcoming Colleen Moore starring vehicle, is a pioneer screen author, having more than a decade ago written, at the outbreak of the great war, the renowned screen story, "Sweetheart of the Doomed," which, starring Louise Glaum, was one of the first of the late Thomas H. Ince's outstanding photoplays. He is also author of "Dum Dums," which was produced on the New York stage, "Under the Skin," "Sunshine Harbor," and other stories.

Writer's Creation

"The world recognizes," Wilson states concerning the cinematographer, "that the writer of screen plays 'starts something' when he creates a story that eventually is to serve as entertainment for millions of people. But he cannot finish his job without the help of many aides in the course of the production of a motion picture. There is no factor in film making which has more to do with giving the finished product a life-like touch than the man behind the camera. It is a well established fact that the cinematographer can make or break, not only the author, his story and its director, but the players as well.

Author's Efforts

"An author can turn from his typewriter the most marvelous of dramatic incidents; he can picture Elysian fields as backgrounds for these incidents; the technical director can duplicate these fields in all their grandeur and beauty, but if the cinematographer doesn't picture them with the finesse that is his, the Elysian fields may as well be a cow-pasture that has run to weeds instead of clover.

Emphasized Art

"Ask yourself the question: 'Why did Douglas Fairbanks place such emphasis on the cinematographer's art in giving to the screen his 'The Black Pirate'?' And why do you hear so many people exclaiming when this picture is mentioned: 'The photography and its color are simply marvelous'? There is only one answer to that question—the 'cinematographer'."

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Maude Adams Engaged In Colored Photography Work

Maude Adams is following her long-established interest in color photography with renewed vigor, according to reports coming from the East.

The process which is commanding Miss Adam's attention is known as "Kodachrome." Robert T. Flaherty is a co-worker on the making of a picture with the process. Work is being done, it is reported, at the Eastman Kodak Company laboratories at Rochester, N. Y.

Employment Exchange Founded By Junior Cameramen's Club

A well attended meeting was held by the Junior Cameramen's Club at Brandstatter's Picadilly on the evening of August 3rd.

Every studio in Hollywood was represented by members present.

An employment exchange for members was organized by David Ragin, president. With this exchange in operation, the unemployment of club members will be taken care of in an efficient manner.

Ira Hoke, the secretary, gave a short talk on the operation of the combination Akeley—Bell and Howell camera designed by John Boyle, A. S. C., and with which Ira Hoke is freelancing for Boyle.

* * *

Billy Reinhold and Ted Reese are back from location at Jungo, Nevada, where they have been working on "The Winning of Barbara Worth." Billy is assisting George Barnes, A. S. C., and they have turned out some very notable work during the ten weeks on the Nevada location.

* * *

Roland Platt, Curtis Fetters and Griffith Thoumas have returned from a prolonged stay in Colorado and Wyoming, where they were on location with the Tom Mix company. The trio are on Dan Clark's camera staff.

* * *

Burnett Guffy is somewhere at sea on "The Yankee Clipper," where he is assisting John Mescal.

* * *

Stanley Horsley has just returned from an extended trip around the United States. On his return, he started work with Goldstone Productions.

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Chinese Cinematographer Studies American Methods



Left to right: Frank B. Good, A. S. C.; Z. E. Shih, visiting Chinese cinematographer; and Perry Evans, A. S. C., on Jackie Coogan set where Shih observed American studio methods.

Z. E. Shih, Chinese cinematographer from Shanghai, is in Hollywood to observe cinematographic methods as practiced in American studios.

Shih has been identified with motion picture production in Shanghai for some time. He hopes to embody the knowledge, which he is acquiring during his visit to the world's film capital, in Chinese productions which he is scheduled to make in the future.

Studies A. S. C. Members' Efforts

Through the courtesy of the American Society of Cinematographers, Shih has been given the opportunity to observe the cinematographic activities of various A. S. C. members.

Among those who have extended him the courtesies of their sets are Alfred Gilks, A. S. C., who has just completed the filming of "Old Ironsides"; Frank B. Good and his associate, Perry Evans, both A. S. C. members, who are photographing Jackie Coogan in "Johnnie, Get Your Hair Cut"; and Rollie Totheroh, A. S. C., chief cinematographer for Charles Chaplin.

George Schneiderman, A. S. C., presented Shih the opportunity to observe laboratory and photographic practices at the Fox

studios where the visiting cinematographer also studied shooting methods on pictures being photographed by Charles G. Clarke, Reginald Lyons and George Meehan, all A. S. C. members.

Through special arrangements, Shih was given employment for a period of several days at the Fine Arts Studios, so that he could study more closely lighting and other effects in use on the current Coogan production, of which Frank B. Good is chief cinematographer.

On his return to his native land, Shih expects to enter into production of all-Chinese motion pictures which he hopes will eventually find a market in countries of the Occident.

Shih is warm in his praise of the reception accorded him by the American Society of Cinematographers and its members.

U. S. Signal Corps Pictures of World War Offered For Public Use

War action motion pictures, taken by cinematographers on battlefronts during the world war, as a part of the activities of the Signal Corps of the United States Army, have been offered for film production usage by a recent federal ruling.

It is said that some two million feet of negative are included in the archives of the United States government, and that but 10,000 of this footage has ever been given general exhibition.

Positive prints only may be procured of the films, negatives remaining at all times a part of the government records. However, as many prints as required will be furnished under the direction of the Signal Corps.

Preceding release, a finished print of the picture in which the department's material is used must be brought to Washington and run off before three officers designated by the Chief Signal Officer of the Army, who will determine whether the picture meets all the requirements of the department. It will not be necessary, however, to file a copy of the picture with the department permanently.

"The apparent revival of interest in historical films has resulted in many requests for scenes from historical films in order to lend color and historical accuracy to the scenes produced," it is stated in the department's announcement. "In the case of a few pictures,

the producers have been inclined to take unusual liberties with the titles for the scenes in order to preserve the continuity of their story, thus resulting in the use of scenes in a manner far different from the real historical evidence recorded by the picture. It is to avoid any such erroneous presentation in the future that the present policy has been adopted.

"No exclusive rights for the use of War Department motion pictures will accrue to any other purpose than to depict the history or graphic events for which such pictures were originally intended; the complete pictures into which any portions of War Department films are incorporated must not depict the military service in an erroneous manner; the War Department films must not be used in the promotion of propaganda through the changing of original titles, addition of new titles, or the inclusion as part of other subject matter in a manner so designated as to mislead the public to erroneous views."

Laboratories Arrange For Reciprocal Representation

A recent laboratory consolidation has been effected between the National Aeromap Company, 861 Seward street, Hollywood, Los Angeles and the Nathan Saland Film Laboratories of New York City.

All product shot in the West will be handled by the Hollywood company while the Eastern company will take care of all business in their section. In other words, they will be respective agents of each other.

The deal, which, it is said, involves over a million in footage, was closed by Ralph M. Like, president of the Aeromap Co. and Nathan Saland, of Saland Laboratories, on the former's recent Eastern visit.

David Abel, A. S. C., is filming "My Official Wife," a Paul Stein production for Warner Bros. Irene Rich and Conway Tearle have the leading parts in this picture.

* * * *

Henry Sharp, A. S. C., is shooting "The Mysterious Island" for Metro-Goldwyn-Mayer.



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ONE three-inch Dahlmeyer F.1:9, mounted for Mitchell; one two-inch Bausch & Lomb F.2:7; one Dahlmeyer Pentac 37 mm. F.2:9. George Benoit, 845 Crescent Heights Blvd., Hollywood, Calif.

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Len Roos, A. S. C., Begins Work On Australian Film

Len H. Roos, A. S. C., has begun work on his first film as chief cinematographer for Australasian Films, Ltd. The production is being made under the title, "For the Term of His Natural Life." It is being photographed at Australasian's "Bondi" studios in Sydney.

Norman Dawn is directing; the cast includes Eva Novak, George Fisher, Katherine Dawn, Steve Murphy and other players well-known to American audiences.

A new Akeley camera outfit has arrived for Roos' use in Australia, and, the A. S. C. member reports, is causing no little excitement in film quarters in that country.

Eye - Strain ?

(Continued from Page 6)

front of the center of the screen with the eyes on a level with the center of the picture.

"Many producers of motion picture films today recognize the importance of utilizing every possible means to create good films. On the other hand, many old films that are still being presented in thousands of motion picture houses throughout the country fall short of coming up to present-day standards.

"The cheaper houses are forced to accept films that are scratched and patched because they have been shown so many times before. Types of screens are found that are no longer considered proper; old type projecting machines in need of repair should be replaced by more modern equipment; careless operation is permitted by many managers.

"Flicker and other evidences of faulty projection which cause eyestrain are the result of such unnecessary conditions. They should not be tolerated and are not to be found where effort is made to cater to the comfort of audiences.

"Finally, eyestrain may be caused by improper general illumination of the theatre. The glare is annoying from bright lights near the screen, over the piano or orchestra or in side brackets. It is not necessary to have theatres dimly lighted.

"Lighting authorities of England recommend that the intensity of illumination should

be gradually increased from the front to the rear. By following this practice the dim light under the screen does not interfere with the picture, at the same time the brighter light in the rear makes it less confusing for persons coming into the theatre from the bright light outside.

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John F. Seitz, A. S. C., Back From Two-Year Stay in Europe

John F. Seitz, chief cinematographer for Rex Ingram productions and a member of the American Society of Cinematographers, has returned to Hollywood after spending two years in Europe photographing Ingram's features for Metro-Goldwyn-Mayer.

Most of this time was spent at Nice, France, where Ingram has purchased a studio on the Riviera. It was here that Seitz photographed both "Mare Nostrum" and "The Magician."

Prior to his stay abroad just concluded, Seitz filmed, in a previous trip, Ingram's "The Arab," the locale of which was the Sahara desert.

Veteran Still Photographer Passes Away In Los Angeles

Charles Warrington, 49, still photographer at the Douglas Fairbanks studios, died in Los Angeles last month, after having been operated upon for appendicitis.

Warrington, who had been identified with the film industry for more than ten years, had photographed stills for Fairbanks in numerous of that star's productions. He bore no relation to Gilbert Warrenton, a member of the American Society of Cinematographers.

John Arnold, A. S. C., is on location in Yosemite shooting Jack Conway's latest picture, "The Understanding Heart," which features Joan Crawford. There will be some unusual shots of beautiful scenic backgrounds in this latest of Arnold's pictures for Metro-Goldwyn-Mayer.

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 Evans, Perry—with Frank B. Good, Jackie Coogan Prod.
 Fildew, Wm.—
 Fischbeck, Harry A.—with D. W. Griffith, Famous Players-Lasky, New York City.
 Fisher, Ross G.—with Fred Thomson, F. B. O. Studios.
 Fried, Abe—with Fox Studio.
 Gaudio, Gaetano—with Svend Gade, First National.
 Gilks, Alfred—with James Cruze, Famous Players-Lasky.
 Glennon, Bert—with Famous Players-Lasky.
 Good, Frank B.—with Jackie Coogan Prod.
 Gray, King D.—
 Griffin, Walter L.—with David Hartford Productions.
 Guissart, Rene—Paris, France.
 Haller, Ernest—with Robert Kane Prods., New York City.
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 Jackman, Floyd—Fred W. Jackman Prods.
 Jackman, Fred W.—directing Fred W. Jackman Prods.
 Jennings, J. D.—with Buster Keaton.
 Koenekamp, Hans F.—
 Kull, Edward—with Universal.
 Kurrle, Robert—with Edwin Carewe.
 Landers, Sam—
 Lockwood, J. R.—
 Lundin, Walter—with Harold Lloyd Productions, Metropolitan Studios.
 Lyons, Reginald—with Fox Studios.
 Marshall, Wm.—with Raymond Griffith, Famous Players-Lasky.
 McCord, T. D.—
 McGill, Barney—with Fox Studios.
 MacLean, Kenneth G.—with Mack Sennett Studios.
 MacWilliams, Glen—with Fox Studio.
 Meehan, George—with Fox Studio.
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 Morgan, Ira H.—with Marion Davies, Cosmopolitan, Metro-Goldwyn-Mayer Studios.
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 Schneiderman, George—with Fox Studio.
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 Sharp, Henry—with Metro-Goldwyn-Mayer Studios.
 Smith, Steve, Jr.—
 Steene, E. Burton—
 Stumar, Charles—with Universal.
 Stumar, John—with Universal.
 Tolhurst, Louis H.—producing microscopic pictures, for Pathe.
 Totheroh, Rollie H.—with Charlie Chaplin, Chaplin Studio.
 Turner, J. Robert—with Fox Studios.
 Van Buren, Ned—
 Van Enger, Charles—with First National Productions, Burbank.
 Van Trees, James C.—with Colleen Moore, First National Productions, Burbank.
 Warrenton, Gilbert—with Universal.
 Wenstrom, Harold—with Corinne Griffith Productions.
 Whitman, Philip H.—with Mack Sennett Studios, Scenario Dept.
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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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Hoping that you will keep Mr. Schneiderman and me informed of any possible changes or improvements on the camera, I remain

Yours very truly,

William Fox

JF/3

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*Sunset, Jackson Hole, Wyoming, Reproduced from Series of Stills Presented
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Cinematographers, Hollywood.*

IN THIS ISSUE :

**“Teaching Projection to Theatre Managers” —
by John F. Barry; Projection — conducted by
Earl J. Denison; Amateur Cinematography;
“In Camerafornia”**



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American Cinematographer

FOSTER GOSS, *Editor and General Manager*

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The EDITOR'S LENS • • focused by FOSTER GOSS

Reward of Merit

WHILE the supply of cinematographers in Hollywood still exceeds the demand, it is a significant circumstance, as mentioned by Daniel B. Clark, president of the American Society of Cinematographers, in other pages of this issue, that, during the past month, the point was reached where not one of the A.S.C. members who are freelancing was available.

¶ For the pictures that are "bigger and better," A.S.C. members are in demand—all of which shows sound production judgment on the part of studio officials.



New Field for Fiction

THE retrospect of another generation may be necessary to accomplish it, but the cinematographer seems destined to become a romantic figure in fiction, either in literature or on the screen itself.

¶ The exploit of Ralph Earle, Pathe News cinematographer, in the recent Florida hurricane, was an Odyssey condensed in the characteristically modern short period of time. Once again it showed the cinematographer as the romantic figure that he is.

¶ Overland trail pioneers, railroad builders—yea, even the fireman, postman and policeman—and others who contemporaneously are acknowledged as leading a drab existence have been transformed, by the magic of screen stories, into heroic entities.

¶ Even as Hollywood has taken its own picture many times and looked at it, some day some author is going to write the story of the cinematographer for the screen. It may be a Florida hurricane, a Johnstown flood or a cinematographic dash around the world. The deeds of men like Earle and Herford Tynes Cowling will offer material enough. And there will be an author to write the story—one with a perspective as must be held by a newspaperman like Linton Wells, who himself has just established the record for "going around the world."



Subservient Art?

¶ Whatever may be the excellencies or the crudities of the German-made motion pictures, they at least are centering attention on one long-neglected fact—that the cinema is an art distinct and complete in itself. However inane simple such a statement may seem to be, it is still true that pictures are largely literature, paintings, etc., as expressed in cinematography. It's been a case of "the play's the thing" rather than "the picture's the thing."

¶ As is well pointed out by John F. Seitz, A. S. C., it is a truism that when a subject finds perfect expression in one art, it does not necessarily follow that such perfection can be duplicated in another. Hence the great themes of literature often "miss" in films.

¶ The German idea, "The Big Parade" treatment, have pointed the way. Simple stories, deliberately told, attain a forcefulness which indicates what is still to come in the cinema art.

Director Advocates Panchromatic Stock



Desirability of panchromatic film for general production usage is stressed by Henry King, who, a pioneer among directors in adopting this form of stock, has just completed the direction of "The Winning of Barbara Worth," on which George Barnes, A.S.C., was chief cinematographer.

As in "The Son of the Shiek," which, the last picture starring Valentino, likewise was photographed by Barnes, the "Barbara Worth" film, which is being produced by Samuel Goldwyn, was shot entirely on panchromatic.

POPULAR

"Panchromatic," King states in discussing the now popular stock, "is, to describe it in a lay way, a highly sensitive negative which enables the camera to register all colors in their true relationship with black and white. It is more sensitive than the ordinary negative and carries more gradation, permitting all shades between extreme white and black together with almost perfect detail.

PROSPECTS

"I believe that the efforts of leading cinematographers to improve motion photography, as indicated in numerous big productions of 1925, were made possible in no small degree by the use of panchromatic film. I believe also that the higher development in the use of this film, together with the experiments now in progress, will make the 1927 big picture at least twenty per cent better photographically."

PIONEER

Commenting on his early adoption of panchromatic, King said:

"I hardly wish to pose as a Columbus in this matter. It is true, however, that I made the first big picture in which panchromatic was used for the entire production. That was in 1923-24 when we filmed "Romola" in Italy. Up to that time panchromatic had been used for exteriors, but never generally for interiors.

PROOF

"While I was making pictures in New York I became associated with Gustave Deitz, who is now in Hollywood and who is an experimenter in panchromatic lines. At that time I was very interested in this type of negative and had used it in various scenes in my productions. Deitz was enthusiastic and told me

Henry King, Pioneer in Use of Stock, Urges Wide Appli- cation of Panchromatic Film

that a photoplay filmed entirely with panchromatic would be a sensation. We began at that time a series of tests, using negative in all sorts of difficult interior shots and the excellent results obtained proved to us that the new negative could be used successfully under conditions where the common stock of negative had formerly been used exclusively. With Roy Overbaugh, the chief cinematographer, Deitz went with us to Italy where we worked eleven months on 'Romola.' We were surprised at the little light needed, for while it was generally supposed that panchromatic was slower than common stock, it proved a great deal faster.

PECULIAR

"I believe," King continued, "that panchromatic has a great future. It is proving an interesting field for experimentation in the use of the effects presented by the Nevada desert while we were making 'Barbara Worth.' The peculiar lighting of the desert presented varied problems, which were solved on 'the field of battle' and which gave us some new views on the use of panchromatic. The results were unusually excellent.

"The popularity of panchromatic is shown by the recent drop in price quotations by the Eastman people. When I first used it for an entire production, it was expensive because it was not in general use. The signs seem to point to its eventual use throughout the industry and this general use will lead to the greater perfection of negative, and, it follows, to more photographically excellent results."

President of A. S. C. Operated On at Hospital in Hollywood

Daniel B. Clark, president of the American Society of Cinematographers and chief cinematographer for Tom Mix, is confined to the Hollywood Hospital, where he underwent a minor operation last month.

This is the first time in more than five years that Clark has been absent from his regular post.

During this period he has photographed Mix in 46 features, for a total of almost five million feet of negative, without missing a day's work.

Rosher Returns to Photograph Murnau Feature

⊕
 ¶ A. S. C. Member Comes from Germany where He Has Been Under Contract to "Ufa" for Past Year.

⊕
 Charles Rosher, A.S.C., has returned to Hollywood from Berlin, where he has been under contract to "Ufa" for the past year, for the purpose of photographing the first American production of F. W. Murnau, director of "The Last Laugh."

WITH FOX

Rosher comes back to Hollywood through arrangements effected between Ufa and the William Fox organization, which is producing the Murnau film. The A.S.C. member has already taken up his duties on the feature, for which he is at present on location at Lake Arrowhead

ANOTHER CONTRACT

Reports that Rosher had signed a cinematographic contract with British National, who, the producers of "Nell Gwyn," are to release through Famous Players-Lasky, were verified on the return to Southern California of the A.S.C. member. However, the agreement with the English organization does not call for the famous cinematographer's duties to begin until a later date, before which, it is stated, he is to do the photography on the next vehicle for Mary Pickford, for whom he has been chief cinematographer in all of her greatest productions.

Rosher's stay in Germany was notable. As one of the outstanding members of the cinematographic profession in America, he was accorded signal honors by his fellow work-



Charles Rosher, A. S. C. (left) at camera on location at Old Heidelberg. The hat which Rosher has donned was purchased for the fabulous sum of seventy-five cents in American money from one of the German Wandervoegel (wandering minstrels) whom he met at Heidelberg.

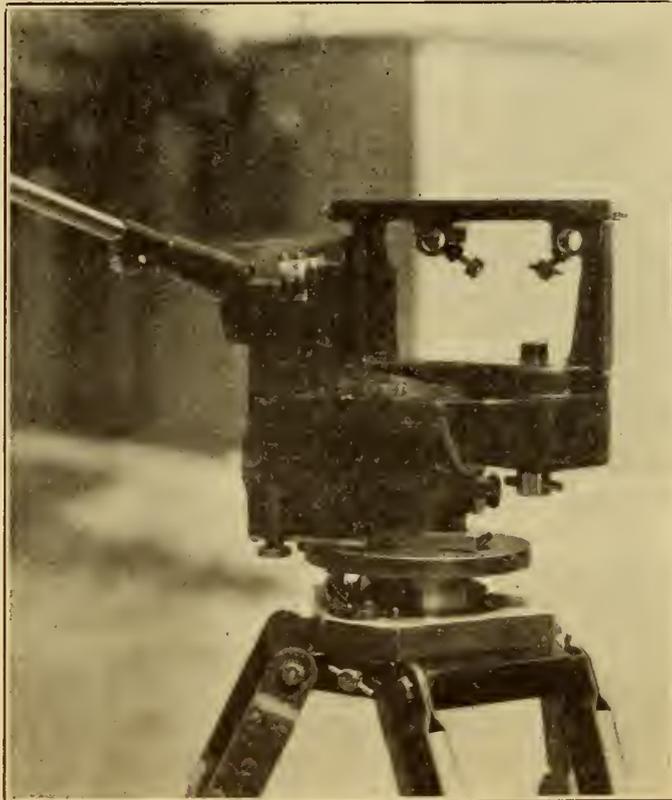


"Prosit," and Rosher—as a close inspection of his glass will reveal—drank in water! All of which shows that he is a law-abiding citizen, even when abroad. But in the "schooners"—well, that's different; they are being skippered by Heidelberg students.

ers in the German studios.

The trip just concluded was not the first made by Rosher to the continent. It was as a result of a jaunt to Europe last year that his contract with

Ufa came about. Previously he had, through special arrangements with Miss Pickford, filmed an important production which was made by Italian producers in Italy.



NEW TRIPOD HEAD

Top: Dan Clark, A. S. C., inspecting Akeley type of tripod head for Bell & Howell or Mitchell cameras, etc., invented by A. Fried, (right), of the Fox Studios, which control the patents.

Bottom: Shows a close-up of the device.



Cinematographer Is Hero in Florida Storm

Ralph Earle, of Pathe News, *By Paul Thompson* Using Aeroplane, Automobile
Braves Storm and Falling and Trains, Personally Takes
Buildings to Get Pictures. *(Reprinted by special permission of Motion Picture News)* Film North to New York.

"Ralph Earle is as anxious to see Mr. Thompson as Mr. Thompson can possibly be to see him." This was the re-assuring telephone message relayed to me in his office by Emanuel Cohen, editor of Pathe News. It was through him I was trying to make an appointment at the hospital with the cameraman who had photographed the Miami disaster and then by train and plane come north to deliver in person his news-reels. This cordiality on the part of the man who had done a really exceptional bit of work to receive me in the guise of an interviewer was flatteringly based on his acquaintanceship with my own many years' work as one of the country's news photographers. His being in the hospital was due to what he had gone through during the period of taking for his company the photographs of the Florida hurricane and its work of devastation, and the mad dash north with the results.

Curiously, my apprenticeship for interviewing plucky Earle was served just prior to the interview by witnessing for review purposes a Pathe comedy. This was based on the idea of a copy boy in a newspaper office with ambitions to become a first-string reporter and the realization of these self-same ambitions. What better way to learn the reportorial art?

"Can't Put Excuses on Screen"

"You can't put excuses on the screen to explain the absence of news-reel pictures; so whatever else you do, keep that camera dry." In that statement made to his garage-employee helper in carrying the tripod and camera to take scenes of the disaster is the summing up of the character of Ralph Earle, Pathe cameraman.

Knowing that he was in Miami, Manager Cohen had no doubts about the quality of the pictures which his organization would get to send out. It was merely a question of what would be the earliest possible moment that they would reach Jersey City for copies to be made to rush to the theatres of the country supplied by his company. With the destruction of the Sikorsky plane which Fonck was to drive to Paris in the first non-stop flight, a news-story which was carefully and painstakingly

to be covered by Pathe, the news-reel department on Forty-fifth Street had cause enough for worry without devoting too much thought to Florida and Earle.

The faith was justified. The pictures came through hugged more or less closely to the chest of the man who had taken them, even though the cameraman's next stop was a private hospital on Fortieth Street. Here he was to have bruises and abrasions cared for, his shoes and stockings cut off and the lower parts of his body bathed and tenderly swathed in bandages. Complete rest and sufficient and the right kind of food were also prescribed with a few incidental shots of anti-toxin to make certain there would be no disastrous after effects from his Florida experience. And twenty-four hours after his admission to the hospital the news-reel man was begging the doctor to re-assure the boss that he was sufficiently recovered and healthy to justify his going to Philadelphia on Thursday for the Dempsey-Tunney fight. Granted the boon, he promised to return to the hospital on Friday for a longer stay. Of such stuff are the right sort of news-cameramen made, men with a reportorial sense and a knowledge of how and when to turn the crank and—most important—possessors of that inelegant but eloquent word called "guts."

There was, according to Earle, prescience of the storm that was to come as early as Friday afternoon in Miami. Editors Leyshone and Irwin, of the Daily News, had published in that afternoon's last edition a notice to the effect that they would print extras that night of the progress of the storm when it arrived. It was in their office, where they were lingering long after their paper had gone to press, that Earle got his first advance dope on the coming cyclone or hurricane. The weather report, on the other hand, distinctly said: "Pay no attention to any pessimistic prophecies of a storm; there is nothing to it. It is merely newspaper publicity," but failed to explain just wherein any newspaper could profit by such dire forebodings. Incidentally, the Daily News did get out their extras, even though as late as four P. M. on Sunday the floor of the



E. Burton Steene, A. S. C., has been retained to do the Akeley work in a number of forthcoming Paramount features which are now in the course of production at the Famous Players-Lasky West Coast studios. Steene, who has created a sterling reputation as an Akeley camera specialist, made Akeley scenes during the past month on "Hotel Imperial," of which, starring Pola Negri, Maurice Stiller is the director and Bert Glennon, A. S. C., is the chief cinematographer. Steene executed similar work on "Stranded in Paris," for which he went to San Francisco with William Marshall, A. S. C., the chief cinematographer, for location shots. Bebe Daniels is starred and Arthur Rosson is directing.

* * * *

Gaetano Gaudio, A. S. C., has completed the cinematography on "The Blonde Saint," a Sam Rork production, for First National. Lewis Stone and Doris Kenyon are starred. Svend Gade directed.

* * * *

Harry A. Fischbeck, A. S. C., is photographing the concluding scenes in D. W. Griffith's Paramount production, "Sorrows of Satan," on which Fishbeck is chief cinematographer.

* * * *

Harold Wenstrom, A. S. C., is photographing "The Lady in Ermine," the latest Corinne Griffith starring vehicle.

* * * *

Frank B. Good, A. S. C., and Perry Evans, A. S. C., who is associated with Good on the camera work, have been in San Mateo and adjacent California locations during the past month for the photographing of race-track scenes for "Johnny, Get Your Hair Cut," which stars Jackie Coogan.

* * * *

Ira H. Morgan, A. S. C., has completed the filming of "Tell It to the Marines," a Metro-Goldwyn-Mayer production, directed by George Hill.

E. B. Du Par, A. S. C., is engaged with new stages in Warner Brothers' Vitaphone system in New York City where, during the past month, he has photographed Elsie Janis, George Jessel, Al Jolson and Governor Al Smith for the latest presentation which will probably be used in conjunction with the presentation at the Colony of "The Better Ole," on which Du Par was chief cinematographer. Besides New York City, Vitaphone is now being operated in Chicago, St. Louis, Atlantic City and Boston, and it is said that it will soon make its Los Angeles debut.

* * * *

John W. Boyle, A. S. C., has gone to New York City, where he is to photograph a First National feature, to be made under the production management of Ray Rockett.

* * * *

Philip H. Whitman, A. S. C., became a member of the proud fathers' class during the past month, when a son and heir came to join the Whitman family circle. Mother and son are reported as doing splendidly.

* * * *

Charles Van Enger, A. S. C., has returned to New York City for a brief stay for the purpose of photographing Colleen Moore in "Orchids and Ermine," a First National production. Van Enger finished the photography on "Men of Dawn," starring Milton Sills before he left for the metropolis. The A. S. C. member spent several months of the present year in New York photographing features for First National, to which organization he is under contract.

* * * *

Jean Trebaol, who was engaged in the camera rental business in Palms, was killed in a railroad accident last month at Glendale. Mrs. Jeanne Trebaol, the deceased's mother, will conduct the camera rentals as heretofore.

* * * *

Georges Benoit, A. S. C., is photographing Priscilla Dean in "Jewels of Desire," a Metropolitan production. Paul Powell is directing.

Amateur Cinematography

Standard and Sub-standard Film for Amateur

35 mm. Field Thrown Open
to Amateurs by Practicing
Simple Economies.

By H. Cyril
Dusenberg
(Chairman, Motion Pic-
ture Committee, Califor-
nia Camera Club.)

Short-ends and Discriminate
Cutting and Developing Keep
Down Cost.

The present widespread popularity of amateur cinematography is due, in a measure, to the introduction of the 16 mm. sub-standard film by the Eastman Kodak Company. The big drawback in past to the use of the 35 mm. standard film for non-professional use was its great cost. Few amateurs could afford to dabble in this branch of photography simply for their own amusement, when one finished print would cost from ten to twelve cents for every foot. With the advent of the 16 mm. sub-standard stock plus the reversal process of finishing the film, cinematography at once came into the range of the amateur's pocket book and at the present time is threatening to sweep the old-time "snap-shot" still photographer off his feet. The economies brought about by the use of this film are so well known that there is no need to go into the matter here. The question now arises, what economies can there be applied to standard film? Is it really so much more costly than the 16 mm. sub-standard cine film? Do you know that there are a number of economies applicable to 35 mm. film, which, if all are put into use, will bring down the operating expense of standard film so that the difference between it and the sub-standard film is almost negligible?

FREELY USED

The professional cinematographer uses film freely. The actual cost of negative stock is one of the smallest items of the production expenses. Re-takes are frequent, perhaps far too frequent than they should be. The average amateur with his sub-standard film also shoots too much footage. He starts his camera too far ahead of his subject and runs it too long afterwards. With the more serious-minded amateur, however, the one who is using standard stock, all this is changed. Every foot means money out of his pocket and since the film is for his own personal use, there is little or no chance of his ever seeing the money back. Once in a great while, however, if he plays in luck, he may be able to sell a few feet to a news weekly. This, by the way, is a big

point in favor of using standard stock. At all events, he plans his shots carefully so that he can take them on the minimum amount of film. He avoids re-takes altogether and makes every foot count. He studies his exposures carefully and knows his limitations of the stock he is using, as well as those of his camera. He so trains himself that if he were given a professional assignment, he would in all probability be able to cover it with a minimum of film, and at the same time, get all the interesting essentials of the scene in question. In other words, he holds down his expense by using less film per shot and by making every foot of film mean something. Therefore, let us put down in our book, economy number one, is to use the minimum amount of footage per scene. This will also reduce the amount of cutting necessary and is, therefore, really a double economy.

SHORT ENDS

Next, by the use of short-ends, the cost of the film per foot can be reduced to an absolute minimum. Short-ends of negative stock are on the market at very low prices and should command the serious attention of the amateur. Nearly all of the larger film laboratories and some of the larger studios have shorts to dispose of in pieces from twenty-five feet to one hundred feet in length. These can be purchased very reasonably. It is ideal stock for amateur use. It is true that short-ends are not guaranteed. Often you will find a piece that has been carelessly handled and, as a result, a few frames are fogged on a hundred-foot piece. What does that matter? They can be cut out and hardly, if ever, missed. A little skillful editing will cover this defect. In proportion to the great saving in cost, the few bad spots that appear once in a while are of practically no importance. We may, therefore, put down as economy number two: use short ends.

OWN FINISHING

The serious amateur will further economize

(Continued on Page 15)

PROJECTION • Conducted by EARL J. DENISON

Teaching Projection to Theatre Managers

By *John F. Barry*
(*Director, Publix Theatre
Managers' School*)

Theatre Manager Should Be Trained to Be Versed in all Phases of Film Projection.

Because the readers of this magazine are interested in the attitude of theatre managers towards projection, it was suggested that an article be prepared indicating why the importance of projection is emphasized during the training given at the Publix Theatre Managers' Training School and how that training equips the manager for the efficient supervision of projection.

Every detail of theatre operation is planned according to its influence in attracting patronage. It cannot be denied that the condition of projection in theatres today affects the sale of tickets.

There was a time when motion picture theatre audiences were not as critical of projection as they are today. Then it was possible to run films through the projector with little consideration of speed, the condition of the film, the condition of the screen and the final result. It seemed that as long as the picture reached the screen the audience was satisfied.

CONDONED

Defects were endured patiently because the very novelty of the entertainment kept attention. Flickering, travel ghosts, unsteady picture, poor focus, careless framing and defective masking, were met patiently. They were accepted as inevitable. The slide which followed the break in the film "One Moment Please," was accepted without a murmur.

AUDIENCE CRITICAL

Times have changed. Audiences are now critical and do notice the standard of projection, even if they cannot discuss the matter in technical terms. They may suffer in silence and not make their displeasure evident. But they do not return to the theatre if there is any alternative. Very often they make their displeasure very evident.

ON BROADWAY

For instance, at a critical moment in the showing of a big photoplay to a Broadway audience this spring the film broke and a blank screen stared at the audience, dispelling the illusion and spoiling their pleasure. The audience was not silent. There were hisses and cat calls and angry comment, loud enough to con-

vince anyone that resentment was deeply felt. It made very clear that audiences can no longer be imposed upon, and that projection is important. Further proof of this can be found by listening to the comment of motion picture fans in communities where competitive theatres are striving for patronage. One of the factors that determine preference for one theatre rather than another is projection.

Patrons will explain their attendance by some statement like:

"I prefer this theatre because the pictures are always clear and the picture does not seem distorted, no matter from what seat in the house it is viewed." The importance of good projection is evident at the box office.

SMALLER HOUSES

Excellent projection is not something that is limited to the larger theatres. There are small theatres where efficient supervision of projection makes it practically perfect despite the absence of expensive equipment. There are large theatres in which the projection is shamefully defective, considering the equipment that is available.

THE ILLUSION

Projection is important from the very nature of motion picture entertainment. If this entertainment is to give its full measure of satisfaction, the audience should feel that they are part of the story, living its action, fighting and loving and fearing and thrilling; and moving on and conquering with the characters of the action, just as though they were the characters themselves, or part of the action. In other words, they should never consciously realize that they are looking at a two dimensional surface, covered with light and shadows. Nor should they consciously realize that there is a projector above them throwing light that makes only shadows. In other words, they should lose themselves in the story and forget the medium, even forgetting that they are sitting in a theatre chair. They should be carried out of themselves and live through what can be called an illusion.

THWARTING EFFECT

Anything that prevents the motion picture

(Continued on Page 16)

Does justice to your skill

Only Eastman Panchromatic Negative does full justice to the cinematographer's skill.

For only this film combines Eastman photographic quality and complete color sensitiveness.

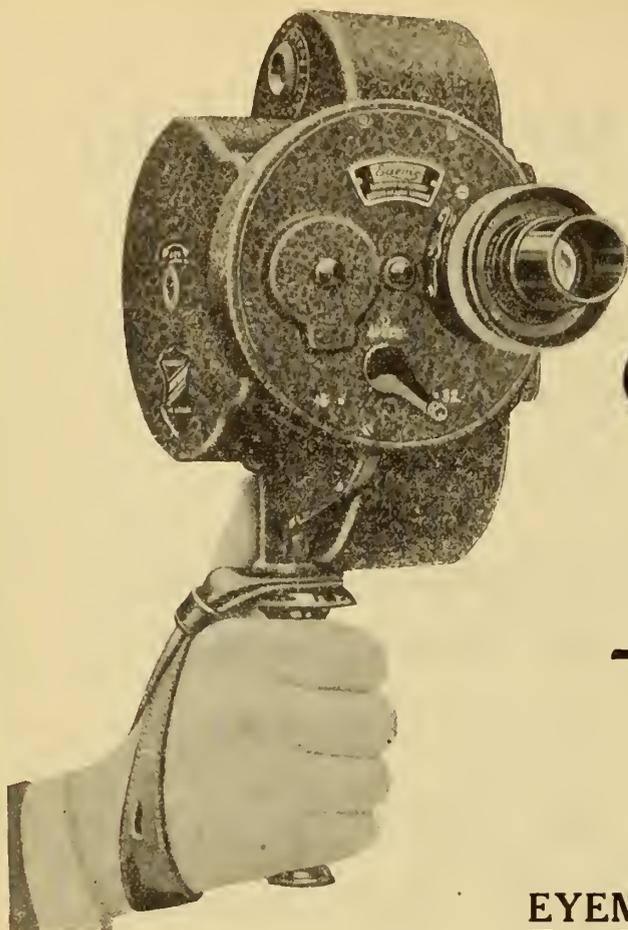
Sensitive to blue, red, yellow, green, it enables you to render *all* colors in their correct tone relationship in black and white.

Write for the booklet "Eastman Panchromatic Negative Film for Motion Pictures." Properties, uses, handling, development of the film are described.

Motion Picture Film Department

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ROCHESTER, N. Y.



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STANDARD AUTOMATIC
PROFESSIONAL CAMERA
FOR FIELD AND STUNT USE

-equipped with the
new doublespeed
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EYEMO is used by Pathe, International, Fox, Kinograms, Universal, and others to scoop the picture in NEWSREEL work

THE PIONEER

The Bell & Howell Company are pioneers in the motion picture industry, having by superior design and construction brought about the present standardization of producing equipment.

The illustration below shows one of the late model Bell & Howell professional studio cameras used almost exclusively by the foremost producers the world over. Eyemo standard portable camera is rapidly gaining the same reputation for superiority in its field.

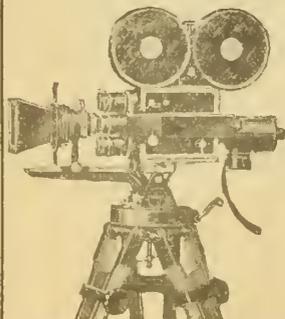
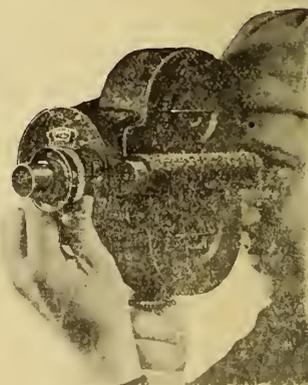
It is also used for professional production purposes by Famous Players-Lasky, Universal, Warner Brothers, Metro-Goldwyn-Mayer, Charlie Chaplin, Christie and others.

Eyemo has been used in every recent exploring expedition of importance.

Its most recent activity, "putting the neighborhood in movies," is coining money for local exhibitors.

The new double speed feature permits taking motion pictures at either normal speed (16 exp. per second) or double speed (32 per second). The speeds are shifted instantaneously, simply by moving a lever. This new double speed mechanism can be incorporated in any Eyemo now in use taking pictures at normal and half speeds.

This shows how easy Eyemo is to handle and operate. Simply sight through the spy-glass viewfinder and press the trigger. Eyemo uses standard film, 100-ft. daylight loading rolls or 120-ft. darkroom load. Full specifications given in literature the coupon will bring.



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Please send me your special circulars describing the Eyemo Camera and its uses.

Name.....

Address.....

AMATEUR CINEMATOGRAPHY

(Continued from Page 11)

by doing his own finishing. If he will develop the film in short sections, he will find that it is really quite easy. Small racks holding 25 feet or even 5 feet of film are easily made, or can be purchased reasonably. Such racks or frames require a comparatively small amount of developing solution. Any standard reference book on the subject will give detailed instructions. By developing your own film in short lengths you have the added advantage of being able to give each scene the exact time of development that it requires. This will give you better results than sending your films to a professional laboratory, where they cannot afford to give your little order the individual treatment it needs. Therefore, economy number three is to develop your own negative.

EDITING NEGATIVE

Once the negative is made and finished, it should be carefully edited before a positive print is made. Project the negative, if you wish, but you will find that after a little experience that this is hardly necessary. Don't be afraid to cut. Take your time and you will be amply repaid in the long run. Learn to make neat splices. Special care must be taken when making splices on the negative so that the frames are in absolute register. Splices must be neat and carefully made so that they will pass through the "printer" without any difficulty. Go over your film slowly and follow the movement carefully, then cut, CUT Cut and then cut some more! Remember that every foot of negative stock that you cut means a corresponding saving of positive stock. When you have reduced your negative down to its essential footage, then and only then, are you ready to make a print. It is recommended that a "step-printer" be used in place of a "continuous" printer, especially if your negative contains many splices. If you can not conveniently obtain or secure the use of a good printer, this portion of your work may be given to the finishing laboratory. However, there are many used printers on the market, discarded by professional laboratories as obsolete that are well suited for amateur use. Shop around a bit and you will doubtless be able to pick up a printer at a reasonable price that will answer your purpose. We may, therefore, note economy number four is to

reduce the expense of positive stock by editing your negative carefully.

If these economies are put into use, the finished film as projected on the screen will be full of snap and action. All slow-moving surplus film will have been discarded. Members of the California Camera Club who have been practicing all of these economies and doing all of their own finishing with the equipment provided by the club, find that they can turn out standard film for very little more per screen minute of showing time than the average "press-the-button" amateur using a sub-standard outfit. In addition to this there is the added advantage of being able to file away the negative so that more prints can be made if the future should require it. Thanks to the energetic camera manufacturers, there are on the market today a number of inexpensive cameras using standard film and the writer earnestly recommends that they be given serious consideration before a new outfit is purchased.

Notes of Junior Cameramen's Club News during Past Month

Gregg Toland was the guest of honor at a dinner given by the Junior Cameramen's Club last month. Toland is an ex-president of the club and just returned after an extensive stay in New York City. While there he assisted Arthur Edeson, A. S. C., in the filming of two feature productions for First National.

* * * *

The Junior Cameramen's Club almost lost a member when the speedboat from which Eddie Cohen, second cameraman for First National, was photographing scenes, capsized off Laguna Beach. Fortunately for the club Eddie caught the keel of the overturned boat instead of the anchor.

* * * *

"Speed" Mitchell and Al Irving are both busy assisting on "Twinkletoes." The club hopes the director will quit working nights, so as to give Speed and Al a chance to attend club meetings.

* * * *

Ira Hoke is using John Boyle's Akeley—Bell & Howell combination camera on Colleen Moore's picture, "Twinkletoes." Jimmie Van Trees, A. S. C., is chief cinematographer. Ira and his Akeley camera are as busy as two bugs in a rug, and he has had to turn down several jobs.



WHETHER for interior or outdoor shots, Zeiss Lens equipment on your camera insures results. No matter how thorough your methods, how good your lighting or how elaborate your settings, the final result will be better—whenever and wherever Zeiss Lenses are employed.

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153 West 23rd St.
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(Formerly H. M. Bennett)

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, 75 mm., with full closing diaphragm.
Price is reasonable

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50mm.....	50.00
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Los Angeles, Calif.

PROJECTION

(Continued from Page 12)

theatre patron from slipping right into the story and living through its action spoils entertainment. Any disturbance that happens to jolt the patron out of the story, spoils the illusion and brings the realization that all this is just a theatre chair, a screen and the action is just shadow movement—all this spoils entertainment. Defective projection can do all this.

OBSTACLES

There is a certain parity in the entertainment that is sought from reading a novel or watching a stage drama. In both cases entertainment is bad only when an illusion is created, only when the make believe of it all is forgotten. But the reader of a novel, bothered by poor printing, or by dirty glasses, or by noisy surroundings finds it impossible to slip into the action of the story and get satisfactory entertainment. The disturbances spoil the illusion. So, too, at the legitimate theatres, glaring lights, back stage noises, inarticulate enunciation of the cast and defective scenery all act as annoying influences and prevent entertainment from being satisfactory. These two comparisons make clearer just why it is that defective projection can spoil a patron's entertainment.

EFFICIENT MANAGER

At the Publix Theatre Managers' Training School, no attempt is made to train projectionists. The objective is to develop motion picture theatre managers. However, the efficient manager should be able to supervise every detail of operation. He cannot supervise effectively without an understanding of details. For instance, to supervise projection effectively, the more he knows about projection and the problems of the particular theatre and its equipment, the better. An expert like Mr. Earl Denison has stated that defective projection in many cases can be traced to the theatre manager. In such cases the theatre manager is either a blunderer who tries to interfere without knowing "what it is all about," or one with no knowledge of projection who permits the projectionist to go on without any supervision. This latter course may not lead to disastrous results, when the projectionist is thoroughly reliable and conscientious, but

“The projectionist with his projection equipment is largely the master of our photographic destinies”

Richard Barthelmess

International Projector Corporation

90 Gold Street, New York, N. Y.

S I M P L E X P O W E R ' S A C M E
M o t i o n P i c t u r e P r o j e c t o r s

even then, it is not an ideal condition. The proper co-operation does not exist. Moreover, the excellent work of a very capable projectionist is not fully appreciated, because the manager has not the basis of knowledge to appraise it.

SAME LANGUAGE

The ideal condition exists when the theatre manager is familiar with projection problems and can talk the language of the projectionist, and the projectionist is thoroughly capable and conscientious and interested in the welfare of the theatre. When this condition exists the manager and the projectionist can intelligently discuss problems, each making suggestions and each confident in the practical, common sense of the other and in the other's interest in the general welfare of the theatre.

ALLIES

A capable, conscientious, sympathetic projectionist is the theatre manager's strong ally. So, to a manager with knowledge of projection plus tactful, common sense supervision is a projectionist's strong ally.

It is evident that the manager cannot know too much about projection and the handling of film. Consequently at the Publix Theatre

Managers Training School the importance of projection is emphasized.

SUBJECTS

During the course in projection, some of the subjects, in which practical training was given, are: Optics of Projection; Light Sources—Maintenance and Possible Economies of Each; Operation and Maintenance of the Various Projectors; Handling of Film; Co-operation with Exchanges; Maintenance of the Cine-Booth, Fire Hazards, etc.; Selection and Maintenance of Screens; Stereopticon Effects; The Cause and Remedy of Projection Defects such as Flicker, Travel Ghosts, Unsteady Picture, Breakage, Distortion, etc. The practical training includes inspection reports of projection at theatres of different sizes and types.

A noticeable improvement in projection is evident almost everywhere. Its importance is now realized as it should be. The theatre managers of the future can be relied upon to do their part in keeping this important detail of theatre operation up to the high standard that the public, the producer and distributor demand.

GOERZ

Negative Raw Stock p a r s p e e d



—more definition—no grain—
also in special daylight load-
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Presentation Suffers from Bad Projection for "Ben Hur"

By H. Lyman Broening, A. S. C.

After many months of anxious waiting, "Ben Hur" finally made its appearance at the Biltmore Theatre. For weeks before its completion we all wondered where this spectacle would be booked. Grauman's Egyptian was the logical supposition, with the result that, after some differences, it found its way into the Biltmore, Los Angeles.

The Biltmore Theatre, while a very modern and attractive "playhouse," should remain just that, or make some effort at better picture presentation. Certainly a picture of the colossal magnitude of "Ben Hur" is worthy of far better treatment in bringing it before the audiences of the film capital. Disregarding all other shortcomings, the matter of projection has been horribly mis-carried and reminds one of the early days along Fourteenth Street in New York. The very idea of placing the projectors in the second balcony of a shallow theatre is unforgivable and its evils have long since been discussed.

In the instance of "Ben Hur" the characters have acquired an out-of-proportion and distorted effect, which is quite unfavorable, to say nothing of the beautiful and massive sets, also sadly on the bias. The elongated heads and necks of our screen favorites is indeed horrible to behold.

To the average patron or fan, this glaring defect may not be so obvious, due to the absorbing qualities of "Ben Hur" as a picture. Nevertheless, such methods in this day and age are all wrong and whoever is responsible for this condition of affairs should take observance of the presentations of D. W. Griffith or Lyman H. Howe. These gentlemen, from the very beginning, have taken cognizance of the importance of proper projection and placed their booths upon the main floor, disregarding the few chairs thus eliminated. Regularly constructed moving picture theatres have taken this into consideration and placed their machines accordingly.

Nothing injures a picture more than distorted angles of projection. When the aperture of one by three-quarters proportion becomes very nearly a square upon the screen, the result is quite obviously unsatisfactory, to say nothing of the optical difficulties involved in attempting to reach a correct focus. A part of

(Continued on Page 19)

PARIS	<h2>RENE GUISSART</h2> <p>Atmospheric Shots in Any Part of Europe</p> <p><i>Taken according to your own instruc- tions in an artistic manner to match the photography of your production.</i></p> <p>OFFICIAL CORRESPONDENT IN EUROPE FOR</p> <p><i>American Society of Cinematographers; Frank D. Williams</i></p> <p>118 Avenue des Champs-Elysees PARIS</p> <p>Cable Address: LOUVERANDE-PARIS</p>	BERLIN
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the top or bottom is bound to be off focus, except on an exceedingly long throw, which the Biltmore does not have. At times the camera is necessarily placed at odd angles and distortion in the negative is unavoidable. This is made worse by projector distortion. The former can hardly be corrected, but the latter has no reason for being, except, for commercial gain (in the few seats thus saved), rank indifference, or ignorance.

San Antonio, Texas, Is Center of Cinematographic Activity

Quaint old San Antonio, Texas, is proving a mecca for members of American Society of Cinematographers.

Harry Perry, A. S. C., is in the Lone Star town as chief cinematographer on "Wings," Paramount's epic of the air. Associated with Perry, there are now in San Antonio on this production, Paul P. Perry, L. Guy Wilky, Faxon Dean and Frank Cotner, all A. S. C. members. They are the stars of a cinematographic staff to which has been entrusted the adventurous task of capturing the air exploits of the battle planes used in the film.

Alfred Gilks, A. S. C., has returned to Hollywood from a location trip of several weeks in the border city, where he was chief cinematographer on Paramount's "Rough Riders," directed by Victor Fleming.

IN SERVICE

To complete the equation, C. K. Phillips, well known to A. S. C. members, is now quartered at the flying station at Brooks Field, near San Antonio. Phillips, who served in the air force during the war, resigned last month as special representative on the *American Cinematographer*, when orders came from the War Department taking him back to the air service. He has already enjoyed the unique experience of having his friends among the A. S. C. members "shooting" in front of the barracks at which he is stationed. Having often stood behind cameras of members of the Society, Phillips now faces the possibility of appearing before the instruments, as, during the time he owned and flew planes in Southern California, he did special aviation work in different productions.

Cliff Schirpser has charge of all the film and loading of magazines at the Fox studios. In the future if any panchromatic film gets fogged at Fox's it's just too bad for Cliff.

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(Continued from Page 9)

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city room, three flights up, was six inches in water.

What Happened in Miami

Things started happening late Friday night and early Saturday morning and continued with no cessation for a long time to follow. In the garage where Earle was quartered, windows and doors started blowing in. Taking charge of the camp, Earle got busy trying to barricade the doors with automobiles and planks as though an invading army of humans rather than the elements were attempting to storm the refuge. His assistants were unworthy of the name for the most part. One stood helpless with a plank to be used for propping a door. He didn't know whether to lay it down or merely continue holding it until Earle profanely grabbed it and put it in place.

Protected for the moment, the news instinct became operative. Under bed cover he loaded his camera and waited. He did not have long to wait. First one section of the roof, then a second fell in. A few seconds later a door gave way and Earle and Jerry, one of the garage men, were swept out into the street. His description suggests Harry Langdon in the hurricane scenes in "Tramp, Tramp, Tramp," but this was not a comedy but dire reality. Jerry clung terror-stricken to Earle's legs. A stiff punch freed the operator temporarily. They worked their way back into the garage, and with the approaching dawn Earle made his first picture. This was through a crack in the door of the garage. The second was through a broken window, the jagged edges showing in the news-reel positive on the screen. The third exposure was in the kitchen back of the firehouse, through a torn-out screen. The wind was blowing so hard (only about one hundred and twenty miles an hour) that setting up the tripod was out of the question. Leaving the garage after the first two pictures, Earle's helper fell into a hole. And then came a stream of profanity, according to the operator himself, directed toward his luckless helper that would have been worthy of a cattleman or longshoreman. Incidentally, the advice mentioned above about the inability of theatre screens to publish, with any success, excuses for news-reels which were not being unreel'd.

But He Got the Pictures

So great was the force of the wind that Earle would focus his camera as he felt it should be approximately with his back to the wind and then turn holding the instrument

and shoot into the face of the gale to get his desired pictures. Not a chance for the usual stability a tripod guarantees. Now venturing out into the open, everywhere the operator found wreckage, but people, mostly in bathing suits, trying to be cheerful. None of the important buildings, especially those of steel construction, were affected, but the wooden one-story buildings, booths, etc., were completely wrecked. Palm trees that have stood for generations were the great sufferers. The shipping of the port also suffered even more than the buildings on land. On the causeway were steamers and autos which were complete wrecks. There were at least fifty boats, oil burners and others, ranging from twenty to two hundred feet in length, which were blown from the bay two and three blocks from the water-front. At least one hundred motor house-boats were cast on land or completely wrecked. They were lined up around the band-stand, where Arthur Pryor's band held forth last year, as though in expectancy of a concert about to start to make them forget their battle with the elements.

Martial law having been declared, Earle saw one lone traffic policeman holding at bay on the causeway at least five hundred autoists anxious to cross to where their own property was located; not tramps, but the solid, conservative business men of Miami. And not a chance to defeat the efforts of that one representative of the law. All this time no gas, electricity, water or lights. Food of the canned variety, but that was all. Storekeepers generous in handing out food and not wishing to accept money for the same. Two nights of sleeping on floors, meals of near-beer, canned milk, some fruit and that was about all. And all the time whenever there was light, grinding, grinding, grinding with the moving picture camera for the rest of the world to see, and seeing, realize the extent of the catastrophe and then contribute to the cause of their fellow-beings in distress.

And always at his heels his faithful dog "Toots." Anxious, but unresponsive to caresses or occasional attentions during the storm and stress period, but once bound for the station seemingly with a realization that the first part of his master's work was completed, he jumped up with both forepaws to lick the face and hands of Earle as though in congratulation for "Well done, good and faithful servant."

Seemingly the worst part of the task was over. Forgotten were the boots and socks and

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clothes never removed during the two days and nights of the fatigue. But within fifty feet of the depot the second physical accident came. (The first had been from a missile projected by the wind, which had caught Earle on the temple in the garage, and, inflicting a deep gash, had knocked him out temporarily). This second disaster was a truck smashing against his hip as the operator stood on the running board of his requisitioned car. He couldn't escape. Credit Miami with damage to Earle's hip and to the photographer wound stripe number two.

A Mad Dash North

Miami was fast disappearing in the distance as the train sped toward Jacksonville. In the latter city at 6 a. m. Monday, the next problem was a plane to Atlanta. Three hundred and fifty dollars demanded, two hundred and fifty of this cash in hand, was the modest price asked by an altruistic sportsman named Price for the use of one of his planes. To him of no interest whatsoever that the rest of the United States should see these pictures, and their hearts and purses being touched would contribute assistance to his fellow Floridians. Business is business. Even when the money had with the greatest difficulty been raised by Earle, then the beggar went back on his agreement.

He preferred to fly to Miami anyway rather than carry him and his pictures to Atlanta. Thus eight precious hours lost (and only a newspaper man or news-reel manager or operator knows how precious they can be), and the regular air mail plane shoving off at 2:30 Monday afternoon on the Florida Airways line was the only alternative. From Atlanta, Doug Davis in a Baby Ruth machine took off with Earle, but had to come down at Greenville at five-thirty that afternoon on account of darkness. In the latter town the flying news-cameraman just missed the train for Washington, D. C., on which a section had been reserved for him. Ultimately Washington anyway. Again a plane with the terminal at Jersey City between three and four o'clock Tuesday afternoon. To the Pathe laboratories there and copies of the news reel were soon on their way to every part of the United States and abroad by steamer and Earle's work was done.

As Pepys would have put it in his diary, "And then to bed in a hospital in New York" and the story was told as far as the cameraman is concerned. But not entirely.

The public will never know the rest. They will have seen the pictures on the screen and wonder mildly how they were gotten. But they will not know that the man who took them, forgetting everything else, hunger, cold, discomfort, physical pain, loss of sleep and all the incidental tragedies of working under such conditions, had just seen the loss of a year's work with a valuation of approximately thirty-thousand dollars worth of pictures. Gone never to be replaced and by the same hurricane that was to add to his stature and reputation as a daring operator. For almost one year Earle has been working in Miami on a series of pictures for the Chamber of Commerce of that city and for Pathe. Now he must start the work all over again. But in the hospital with the bulliest pluck in the world, he merely said: "Oh, well; it's all part of the game; it might be worse."

That's all. Part of the tradition of the craft and why they make good. The Japanese earthquake did the same thing to his work of a year in the land of the Mikado, destroying one of the finest laboratories the Far East has ever seen, only a few days after it had been completed. By now, Earle's philosophy is not a temporal thing; it is part of his make-up. "It might be worse," as a slogan, might fittingly be borrowed by some of the rest of us.

Robert Kurrle, A. S. C., is finishing the cinematography on the Fox production, "On the Wings of the Storm."

* * * *

Henry Sharp, A. S. C., is hard at work on the Metro-Goldwyn-Mayer production, "Mysterious Island."

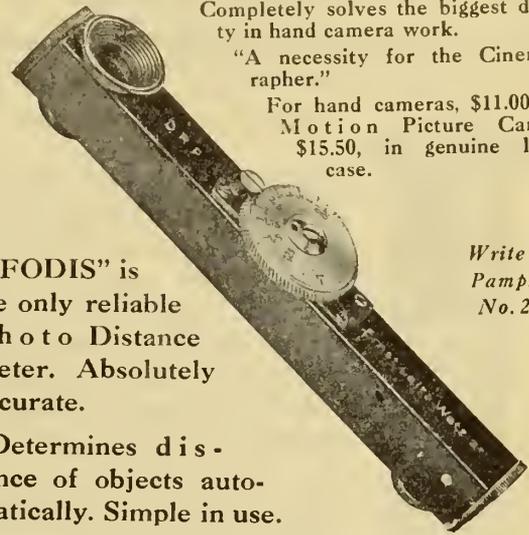
* * * *

George Schneiderman, A. S. C., has left for New York City, where he will photograph a Fox production, directed by Al Green, at the William Fox New York studios.

* * * *

Due to a typographical error, the name of the author of the story on amateur cinematography appearing on page eleven of this issue—H. Cyril Dusenbery—is misspelled.

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Bureau of Mines Assembles Films on Nation's Industries

The largest collection of educational motion picture films depicting the mining, treatment, distribution and utilization of the numerous essential minerals ever compiled is in the possession of the Bureau of Mines, Department of Commerce. At present, the bureau's motion picture library comprises more than fifty subjects visualizing the operations of the mineral and allied industries of the nation.

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A number of highly interesting films depicting the production, refining and distribution of petroleum have been made by the bureau. "The World Struggle for Oil," a seven-reel feature, visualizes the story of petroleum in all parts of the globe, from the earliest use of the material, as pitch, smeared on Noah's ark. The "Story of Petroleum," in four reels, begins with the location of a new well by the geologist, and carries the story to the distribution of gasoline by service stations. "Mexico and its Oil," "The Story of a Mexican Oil Gusher," and "Through Oil Lands of Europe and Africa," are other films depicting graphically the story of the development, by American capital and enterprise, of the oil fields of foreign lands.

A. S. C. Members Shoot Fleet Maneuvers for Lasky Studios

Maneuvers of the fleet between Los Angeles and San Diego were shot by a staff of cinematographers for Famous Players-Lasky for use in the Paramount production, "You're in the Navy Now," which features Wallace Beery and Raymond Hatton.

Among the A. S. C. members who photographed the action were Victor Milner, Joseph Brotherton and William Beckway.

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Members of A. S. C. in Great Demand among Film Producers

(The following story was written by the editor of this publication for the studio section of the EXHIBITORS' HERALD)

Recognition of the activities of the American Society of Cinematographers is indicated in the record demand for the services of A. S. C. members, according to Daniel B. Clark, president of the Society and chief cinematographer for Tom Mix.

"Because of the high standards which the A. S. C. has consistently maintained over a period of years," Clark states, "its members have always been sought for the outstanding cinematographic connections in the motion picture business. No man is ever admitted to membership in the American Society of Cinematographers unless his work proves that he is an unfailing artist of the highest calibre, with the added faculty of being practical commercially to the extent that it is a part of his qualifications to save his producer production cost wherever possible. Therefore, membership in the A. S. C. has not only stood as a badge of honor on the cinematographer on which it is bestowed, but, to the producer, it means dependability and superiority in the cinematographic calling.

GREAT RESULTS

"The program instituted by the A. S. C. officers at the beginning of the current fiscal year," Clark continued, "was one of the most ambitious ever undertaken by this Society. It entailed widening the scope of the A. S. C., and working closer in co-operation with producers. That this program has borne results and has achieved widespread recognition where the motion pictures of the world are produced is shown in the following significant fact:

"At the present time, not a single member of the American Society of Cinematographers is available!"

"Considering the fact that a considerable percentage of the membership comprises free-lance cinematographers, this record is indeed remarkable. And the officers of the American Society of Cinematographers feel that there is no better occasion than this to renew their pledge that their ranks will always be filled with men who are leaders in their profession, for it is only by adhering to such a policy that the enviable prestige of the A. S. C. may be continued to be maintained."

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- Dored, John—Riga, Latvia.
- DuPont, Max B.—
- DuPar, E. B.—with Warner Bros., New York City.
- Dubray, Joseph A.—
- Edeson, Arthur—with First National, New York City.
- Evans, Perry—with Frank B. Good, Jackie Coogan Productions.
- Fildew, Wm.—
- Fischbeck, Harry A.—with D. W. Griffith, Famous Players-Lasky, New York City.
- Fisher, Ross G.—with Fred Thomson, F. B. O. Studios.
- Fried, Abe—with Fox Studios.
- Gaudio, Gaetano—with Svend Gade, First National.
- Gilks, Alfred—with James Cruze, Famous Players-Lasky.
- Glennon, Bert—with Famous Players-Lasky.
- Good, Frank B.—with Jackie Coogan Productions.
- Gray, King D.—
- Griffin, Walter L.—with David Hartford Productions.
- Guisart, Rene—Paris, France.
- Haller, Ernest—with Robert Kane Productions, New York City.
- Heimerl, Alois G.—
- Jackman, Floyd—with Fred W. Jackman Productions.
- Jackman, Fred W.—directing Fred W. Jackman Productions.
- Jennings, J. D.—with Buster Keaton.
- Koenekamp, Hans F.—
- Kull, Edward—with Universal.
- Kurrie, Robert—with Fox Studios.
- Landers, Sam—
- Lockwood, J. R.—
- Lundin, Walter—with Harold Lloyd Productions, Metropolitan Studios.
- Lyons, Reginald—with Fox Studios.
- Marshall, Wm.—with Raymond Griffith, Famous Players-Lasky.
- McCord, T. D.—
- McGill, Barney—with Fox Studios.
- MacLean, Kenneth G.—with Mack Sennett Studios.
- MacWilliams, Glen—with Fox Studios.
- Meehan, George—with Fox Studios.
- Milner, Victor—with Famous Players-Lasky.
- Morgan, Ira H.—with Cosmopolitan, Metro-Goldwyn-Mayer Studios.
- Musuraca, Nicholas—
- Norton, Stephen S.—
- Palmer, Ernest S.—with Fox Studios.
- Perry, Harry—with Famous Players-Lasky, San Antonio.
- Perry, Paul P.—with Famous Players-Lasky, San Antonio.
- Polito, Sol—with Ken Maynard, First National.
- Ries, Park J.—
- Rios, Len H.—Sydney, Australia.
- Rose, Jackson J.—with Universal.
- Rosher, Charles—with F. W. Murnau, Fox Studios.
- Schneiderman, George—with Fox Studios, New York City.
- Scott, Homer A.—
- Seitz, John F.—
- Sharp, Henry—with Metro-Goldwyn-Mayer Studios.
- Smith, Steve, Jr.—
- Steene, E. Burton—with Famous Players-Lasky.
- Stumar, Charles—with Universal.
- Stumar, John—with Universal.
- Tolhurst, Louis H.—producing microscopic pictures, for Pathe.
- Totheroh, Rollie H.—with Charlie Chaplin, Chaplin Studios.
- Turner, J. Robert—with Fox Studios.
- Van Buren, Ned—
- Van Enger, Charles—with First National Productions, New York City.
- Van Trees, James C.—with First National Productions, Burbank.
- Warrenton, Gilbert—with Universal.
- Wenstrom, Harold—with Corinne Griffith Productions.
- Whitman, Philip H.—with Mack Sennett Studios, Scenario Department.
- Wilky, L. Guy—with Famous Players-Lasky, San Antonio.

Edison, Thomas A.—Honorary Member.
 Webb, Arthur C.—Attorney

Meetings of the American Society of Cinematographers are held as called on Monday evenings in the A. S. C. assembly rooms—

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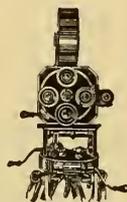
Director of "Ben Hur"
Chariot Race for M-G-M.

Vol. VII, No. 8
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November, 1926

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Published in
Hollywood, California



By American Society
of Cinematographers



*Fire-pot Hole, Yellowstone River, Yellowstone National Park. Re-
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THIS MONTH:

Motion and the Art of Cinematography—By Slavko Vorkapich; Professional Notes for Amateur Cinematographers—By Joseph A. Dubray, A. S. C.; How to Edit the Amateur's Films—By H. Cyril Dusenbery.

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American Cinematographer

FOSTER GOSS, *Editor and General Manager*

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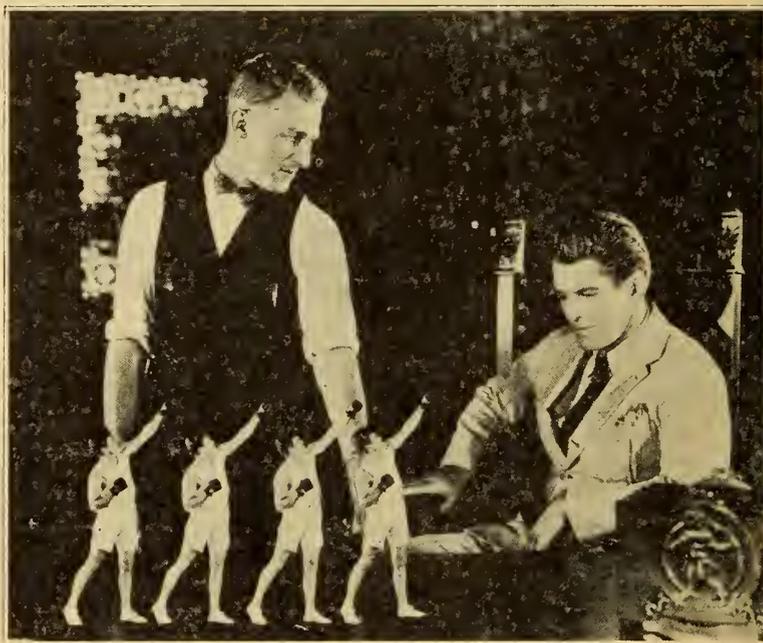
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Alvin V. Knechtel Is Elected to A. S. C.



Membership Is Bestowed on
Distinguished Cinematog-
rapher of Varied Career



Alvin V. Knechtel, A.S.C., and Knechtel, left, and Gene Tunney, heavyweight champion, reviewing Tunney's "fighting forms." Still was taken while the A.S.C. member was photographing "The Wallop Works" for Pathe.

Alvin V. Knechtel has been elected to membership in the American Society of Cinematographers, the A.S.C. Board of Governors announces.

Knechtel, who joined First National on contract during the past month, has had a long cinematographic career, varied as well as interesting.

He started in the profession in Detroit in 1915 in a small commercial laboratory. He was almost immediately assigned to the camera, and was obliged to develop and print his own work. He continued in this line for four years, during which time he photographed several Detroit-made five-reelers. His regular work in the course of this period, however, consisted chiefly in making commercial and educational pictures, such as "The Manufacture of the Buick Car," in seven reels, and the like.

With Paramount

In 1919, Knechtel received an assignment

from Famous Players-Lasky to make a trip to the South Seas by boat from Boston through the Panama Canal, north of Honolulu, and then south to Samoa. On this expedition, he made nine pictures for the "Paramount Magazine." In addition, he filmed "Some More Samoa" and "South Sea Magic," together with numerous short subjects and educational.

Freelance

On his return to New York, Knechtel worked two years with Baumer Productions, Inc., and then launched into freelance work, producing his own short subjects and selling the negatives outright to the releasing organizations. His chief sales were to Pathe with the result that he eventually joined the staff of that organization. For Pathe, he toured the United States by automobile, assembling material for short subjects, and later made another trip to Honolulu, after which he was

(Continued on Page 24)

The EDITOR'S LENS • • focused by FOSTER GOSS

An Example Close at Home

AN INTERESTING booklet, "The Home of Kodak," just received from Rochester, tells one of the most romantic stories of modern industry—that of the Eastman Kodak Company.

The publication recounts the early efforts of George Eastman, how he was dissatisfied with the "wet plate" type of photography in vogue in the late seventies, and how he eventually evolved the "dry plate" method. There came the steady growth of his business until, within a few years, there was laid the foundation of what is now the gigantic institution at Rochester.

Eastman was not slow to realize the potentialities of the motion picture business, and set his organization to work to perfect the raw stock so necessary to the unprecedented new business.

For the film industry, there is a very definite moral in the career of George Eastman and in the history of the firm that bears his name. If Eastman had been content to accept the old "wet plate" type of photography as final and to dabble around in the manufacture thereof, he would have been bound around by the limits of the primitive stages of a new science.

Even though photography in any form still seemed nothing short of a miracle at the time Eastman began his life's work, he was not disposed to regard it as a matter of the ultimate, but, instead, with that daring and imagination which characterizes all great men, insisted on perceiving its weaknesses and then set about to improve them. In this excursion into the realm of the industrial and scientific unknown, he not only profited himself, but he made the world at large profit—by virtue of his activities in motion pictures alone.

The moral is that those within the profession can never allow themselves to look upon their calling as having reached a point of saturation, and thus to permit their imaginations to become satiated. What film workers in all lines need is a

highly developed sense of values and proportions—which, is it not, closely akin to a deep-seated sense of humor?

In the Making

NEW camera angles and photographic effects bring new kinds of photoplays. The camera is an instrument to conjure with, and, like the Phoenix, rises, for a new life, out of the ashes of what previously may have been regarded as its own insufficiency. It has come to pass that novel cinematographic treatments invariably are the basis of the plaudits of the critics in heralding the triumphs of those films which are looked to as ushering in a new era in the cinema. But, in the efforts to merit these very plaudits, a strained condition is reached—which makes ridiculous that which was intended to be sublime.

The engulfing wisdom that belongs to some directors and writers might well benefit from consultations with none other than the cinematographer when these new and novel film treatments are desired.

After all, it is the business of the cinematographer to know such things; and, to say that he is able to respond when called on, is merely to make a matter-of-fact statement.

The writer should find in him a close consultant while the script is being written. How much better this would be than arbitrarily to finish a scenario wherein certain inflexible "effects" are tersely specified, with the cinematographer left to work out the results without having the benefit of, or the time in which to gain a thorough understanding of just what the writer is trying to express. The same applies to directors.

The most successful of the foreign-made films have recognized the foregoing principles, and, as a result, have enjoyed triumphs which even Americans have tried to emulate.

The basic fact must be recognized that the cinematographer is not solely a medium of expression, but that he likewise is a medium of *creation* in motion pictures.

PROJECTION • Conducted by EARL J. DENISON

Build Theatres Around Projection

By Daniel B. Clark,
A.S.C.

Projection Room Should
Be Reserved Best Location
when Plans Are Drawn

If good projection is to be desired, the time to begin to provide for it is when an architect first begins to draw the plans for a new motion picture theatre—or legitimate house for that matter.

Gone is the era when an orthodox theatre was converted into a cinema palace by tacking up a screen and finding a hole in the wall in which could be thrown the projection "booth." But do our theatre builders give ample consideration to the room that is to house the projectors?

Bad Throw

In last month's issue of the *American Cinematographer*, H. Lyman Broening, A.S.C., called attention to the bad throw in a Los Angeles theatre, to which fell the honor of presenting the important production "Ben Hur," to the film capital. It so happens that this is a comparatively new house, only a couple of years old. While it presumably was primarily designed for a legitimate theatre, it is reasonable to believe that the exhibition of motion pictures in an establishment, located as this is, was well within the thoughts of those responsible for the erection and planning of the house. That an imperfect projection arrangement was created is lamentable.

Afterthought?

Yet this condition exists throughout the country today. Projection rooms are put in as more or less an afterthought. They are placed in a part of the house most agreeable to other considerations whether it be the general style of interior architecture which cannot be marred under any conditions or what not.

Come to View Picture

But patrons do not come to a theatre to feast their eyes exclusively on the beauty of a

house's interior. They come to see a picture—a good picture. And they cannot see such with imperfect projection. And there cannot be perfect projection, if the projectors must do all but walk around corners to get the images on the screen.

Architect's Duty

Motion picture theatre architects have a duty that is greater than the mere designing of edifices that are pleasing to the eye. Their task is to design a structure in which motion pictures may be seen to the greatest advantage—which means nothing more than that it must be possible to project films at the greatest advantage.

Should Consult

If it is not a part of the equipment of such architects to know where and how to place such projection rooms, then it should behoove them to consult some competent projection engineer who is fortified with the necessary knowledge. In a word, the cinema house should be built around the projection appointments, rather than the latter's being built into the theatre.

All Are Concerned

All of this represents an exceedingly deep-seated matter, of interest to all those identified with a given motion picture—whether it be the projectionist, exhibitor, producer, star, director or cinematographer. We all need the best projection—for by projection we place our wares before the ultimate consumer, the theatre-goer.

Those who erect theatres are in the key position. It is they who may insist not only that their houses have the best projection equipment obtainable, but that, in addition, this best equipment be provided that place in the house, most suited to maximum results. Mr. Theatre Builder, tell that to Mr. Architect!



L. Guy Wilky and Frank Cotner, both A.S.C. members, have returned to Hollywood from San Antonio where they spent several weeks photographing for "Wings," a Paramount feature, on which Harry Perry, A.S.C., is chief cinematographer. Among the other A.S.C. members shooting with Perry on this production are Paul Perry and Faxon Dean.

* * * *

William Marshall, A.S.C., who is photographing Paramount's "Stranded in Paris," starring Bebe Daniels, had his staff augmented, for extra set-ups, with the services of Stephen S. Norton and Perry Evans, both A.S.C. members, during the past month. With Marshall, Norton and Evans filmed location scenes.

* * * *

E. Burton Steene, A.S.C., did the Akeley work on "Stranded in Paris," most of his filming having been in interiors. This circumstance indicates the revolutionizing of Akeley cinematography, which in the past was confined, in the minds of production officials, to exteriors only. The present practice is to specify Akeley shots for interiors as well as exteriors; in fact, many scripts have been known to have Akeley shots written into them by various scenarists. The widespread use of Akeley scenes is said to be due in no small measure to the professional efforts of Steene, whose concentration on this type of activity has not only set him up as the foremost man in this particular calling but has created a demand for Akeley shots generally.

* * * *

Charles Van Enger, A.S.C., has returned to Hollywood from New York City and is photographing "Easy Pickings," a First National production, starring Anna Q. Nilsson with Kenneth Harlan as the lead. George Archainbaud is directing.

* * * *

Victor Milner, A.S.C., is filming Adolphe Menjou in "Blonde or Brunnette," a Paramount production directed by Richard Rosson.

H. Lyman Broening, A.S.C., is filming "Father Said No," an F.B.O. production directed by Sam Wood. The cast includes Danny O'Shea, Kit Guard, Al Cooke and Mary Brian.

* * * *

Reginald Lyons, A.S.C., has finished the filming of "Desert Valley," starring Buck Jones for Fox. The feature carries plenty of thrills. Location scenes were shot by Lyons in Red Rock Canyon, in the Mohave Desert. Reggie has already begun work on "War Horses," Jones' next starring vehicle for Fox.

* * * *

Gilbert Warrenton, A.S.C., is filming Universal's "The Love Thrill." Laura La Plante is starred.

* * * *

Ira Morgan, A.S.C., is photographing "The Taxi Dancer" at the Metro-Goldwyn-Mayer studios.

* * * *

George Schneiderman, A.S.C., is back in Hollywood from New York City where he filmed metropolitan location scenes for Fox's production of "The Auctioneer." Blase New York was so enamoured of George's camera that he was forced to camouflage the instrument behind a canvas tent arrangement as used only by the electric companies. The ruse worked so effectively that one sophisticated New Yorker walked up to George Sidney, who was simulating a peddler among the unsuspecting crowds on the sidewalks, and informed the actor: "You ought to be in the movies." Ask either of the Georges if this isn't true!

* * * *

Bert Glennon, A.S.C., is photographing the Paramount production, "Barbed Wire," starring Pola Negri. Rowland V. Lee is directing.

* * * *

Joseph A. Dubray, A.S.C., has concluded the cinematography in a current Tiffany production, directed by Louis Gasnier. The cast includes Raymond Hitchcock, Theodore von Eltz, Majorie Daw, Vivian Oakland and Buddy Post.

Amateur Cinematography

A Professional's Notes for Amateurs

By J. A. Dubray,
A.S.C.

First of Series of Articles
Presented in a Manner Easy
for Amateur to Comprehend

The study of "optics" in general has been the source of the publication of a great quantity of excellent works dealing with this subject. The different branches of this science, of which photographic optics is one, have been the cause of further augmenting of the number of these publications.

The work of research in the maze of information thus given is so laborious that the beginner is rarely able or willing to put forth the necessary time involved.

It is the aim of the writer of this series of articles, of which this is the first, to give the reader a clear understanding of "How Light Works," eliminating as much as possible the confusion of too many technical expressions as found in the text books.

To the members of the "Junior Camera-men's Club" and to the sincere amateur in photography are these articles cordially and fraternally dedicated.

"*Light is God, God is Light!*" said the mystic, and that was all.

"*Hail Holy Light! Offspring of Heaven's First Born,*" said the poet, and that was all.

"*Light is a Stimulus that Acts on Organisms and Causes a Sensation!*" said the philosopher, and that was about all.

"*Light is the Agent or Force, by the Action of Which Upon the Organs of Sight Objects from Which it Emanates are Rendered Visible!*" said the lexicologist, and that also was all.

"*Light, is all of that,*" said the scientist, but for him, that was not all. It was merely the starting point from which to wrestle from it its secrets, the reasons for its behavior, to *understand* it, so that through this understanding he could make use of its properties for the benefit of mankind.

The origin of things is, at times, of secondary importance to the scientist.

"When the thing *exists*, study it!" science says. "Study it; learn to *know* it; and through this knowledge you may approach the *origin*, but even if this origin shall forever remain in the realm of the metaphysical conception

of things, you will have made *use* of the thing --you will have put it to the work for which it was originated."

And so, considering *light* as a *thing*, science set to work.

The different sources of light are: the sun; the fixed stars; heat; electricity; chemical combinations; meteoric phenomena; phosphorescence.

The origin of the light of the sun and stars is unknown, but it is assumed that these bodies are enveloped by ignited gases, whose tremendously high temperature produces light.

This being true—and the comparison of light emanated by the sun and stars with light produced by heat corroborates this supposition—if this be true, we say, we shall class their light with the light produced by heat.

Increased

It has been ascertained that non-luminous bodies, placed in the dark, begin to become visible when their temperature is raised 500 to 600 degrees, and their luminosity increases with the increasing of the temperature.

Chemical

Light, produced by chemical combinations, is also due to the degree of temperature developed and temperature is the factor of most of the electric lights used for illumination.

As these are the sources of light most used in photography, we will pass with silence the other sources and refer the reader to numerous and special literature on the subject if he desires to extend his knowledge that far beyond our present scope.

Motion Of Light

The sources of light being established, various attempts have been made to explain the *motion* of light, that is, to explain the way in which light travels from the luminous body to our eye, whether this body be the most distant visible star, the sun, or a small incandescent splinter of wood.

Of all the suppositions advanced as an explanation of this phenomena, the "*undulatory theory*" announced by the Dutch mathematician, Huyghens, in 1678, is generally accept-

(Continued on Page 16)

How to Edit the Amateur's Films

By *H. Syril
Dusenbery*
(*Chairman, Motion Picture
Committee, California
Camera Club*)

Repeated Projection and Elimination of Static Matter
Make Interesting Subjects

In amateur cinematography, the cinematographer, the editor, and the cutter are usually one and the same person. Much has been said as to what to take and how to take it but very little has appeared on what to do to improve the film once it has been returned from the finishing laboratory. While the suggestions that follow are primarily written with 16 mm. cine film in mind, they hold good for standard film as well.

Eager to See Results

The average amateur, when he receives his film back from the laboratory, is in feverish haste to project it. Once he has seen it, his friends are invited in to see it in a rush and little or nothing is done in the way of editing or cutting the film. By the time it dawns upon Mr. Amateur that his film could be improved upon, all concerned have seen the picture and it has been consigned away with hundreds of feet of other film where it is allowed to dry out and become brittle and perhaps be forgotten. Such is the fate of the average amateur reel.

The Difference

But the Exceptional Amateur, the one that gets the "interesting" pictures, the one whose pictures have snap—tempo as it is often called—the one whose pictures are viewed over and over and are carefully rewound and filed away in humidor cans, what does he do? He edits his film!

Minimum Equipment

The only piece of equipment necessary for successful editing is a good splicing block. The Bell & Howell Company have a combination rewind and splicing outfit that is excellent for this sort of work. Learn to make neat splices and make them quickly and then you are ready to start. Let us examine a typical reel.

The film is received from the finishing laboratory. It is first projected just as it is received so that you may get a general idea of what it contains. As the film is projected for the first time, note mentally the bad spots. Are there any spots under-exposed or over-exposed or out of focus? Which scenes are too long? Which scenes lack action and therefore don't mean anything? These are a few of the things that should flash through your mind when you view your own picture for the first time.

Second Projection

This done, immediately rewind the film and while its memory is still fresh in your mind, project it again. Have a pad of paper and a pencil before you during this second projection. Start the film the second time. Stop it immediately after the first scene is finished and make a few notes on your pad. If it cannot be improved upon in your estimation, jot down Scene Number 1, O.K. Start the projector again and view the next scene and continue this procedure scene by scene throughout the reel. Stop the projector after each scene, whether or not you believe you can improve it. Consider each scene carefully. It is a bit too long? Does it contain any dead spots wherein no action takes place. Take the time to think each scene over before starting the next scene. If there is any doubt in your mind at all, run the scene over again.

Sub Titles

Doubtless, during this procedure, certain sub-titles will suggest themselves to you. Jot these down indicating in your notes just where you think they belong. Also perhaps after you have viewed the reel for the second or third time, you will realize the order in which the scenes appear on the screen is not the best. Some particular scenes will be more effective if they follow a certain scene instead of appearing before that scene. This fact must be entered in your notes also. It is very necessary to project the film enough times so that you become perfectly familiar with it as the 16 mm. film is so small that it is not easy to follow the action on the film itself unless you know what it is all about. Once you become familiar with every little movement and motion, you are ready to begin cutting.

Action

Transfer your film to your rewind and splicing outfit and look Scene Number One over carefully. Do not keep more than two frames previous to where action starts. In most cases one frame is enough. By this I mean, for example, suppose you have a scene showing an automobile drive up, come to a stop and some people step out. You will doubtless have a foot or so of film before the auto puts in its appearance. Look over the film carefully and note the first frame in which the auto appears.

Motion and the Art of Cinematography

By Slavko Vorkapich

Startling and Novel Ideas
on Motion Picture Treat-
ment Advanced by Student

(Slavko Vorkapich, celebrated Hollywood artist, delivered the following address before a recent open meeting of the American Society of Cinematographers.)

As foreword, I must tell you, that in this address the subject of Motion Pictures will be treated from a purely artistic point of view.

Therefore, the more practical side of it, the commercial value and the understanding by the public in general will be completely overlooked.

I will ask you, if I may, to forget, for a while at least, the business side of films, the box office and the appeal to the audiences, although we feel that, even among the public, there is an evident demand for "something different." And, who knows, perhaps the ideas here expressed, if properly realized, might some day prove even financially valuable.

However, a real artist works to satisfy his own taste first. And, if his work is sincere, the discriminating ones among the public will deeply enjoy the product of his effort.

Now to come to our problem:

Can a motion picture be a real work of art?
By "work of art" I mean—an achievement comparable to masterpieces of all other arts; a motion picture that could compare, in its artistic value, to an Egyptian temple, to a Greek statue of Venus or Apollo, to Dante's Inferno, to Shakespeare's Hamlet, to the poems of Byron, to Mona Lisa, to Michael Angelo's frescoes, to Beethoven's Ninth Symphony, and so forth. Can we name one motion picture that has approached those masterpieces?

"Is it possible to make such a masterpiece in motion pictures, and how?" is the problem I should like to discuss with you tonight.

To know an art, we must know its tools, its material, its proper characteristics, its field of activity and its limitations. For that reason, we have to examine the possibilities of our new medium, the *cinema*.

From Photography

Cinematography has evolved from photography. That is, maybe, why many have made the mistake to think of cinema in terms of photography. But still a greater mistake is to judge the cinema from the point of view of drama or literature. Why is it, that the people won't grant an absolute independence to this recent human achievement? This has been

puzzling me, and I was unable to find an answer. Or, is the cause to be found in the well-known difficulty of the humans to adapt themselves to anything new?

Work of Art?

In order to clear the path to our investigation, I am going to make a radical statement: *A photograph can never be a real work of art.* A photograph can be pretty, pleasing, decorative, even beautiful to a certain extent, but never really artistic.

If you don't agree with me, make the following experiment:

Take the best photograph you can find and try to look at it for a long time, let us say, for half an hour. In the beginning you will be pleased with its appearance; but, the longer you look at it, the emptier it will appear to you.

Exhausted

You will realize that the first impression was only superficial. You will discover its lack of substance and of feeling. At the end of a few minutes, its contents, artistically speaking, will be completely exhausted.

Studying Old Masters

Now take a good painting by an old master, even a black and white reproduction of it, and look at it as long as you please. The experience will be the opposite to the previous one.

The longer you look at it, the more interest you will discover in it. In fact, a real masterpiece will begin to live and reveal its worth only after a certain time of observation. (This is the best way to test the value of any work of art). This is also true of good literature and good music. The oftener you re-read certain passages from Shakespeare or Goethe, the more you discover in them. Real art is like life and nature: inexhaustible in its contents.

Different

This experiment has convinced me that it is useless for photography to try to compete with art.

But *cinematography*, if properly understood, *can become an art*. We shall see, presently, why and how.

Most of you, here, being cameramen—I don't like that name—cameraman. Another name should be used by those in pictures: like cinematographer, camera-artist, cinegraphist, or something like that)—being camera artists,

I presume you have the gift to visualize in your minds something that is described to you in words.

Now, visualize in front of you a blank screen. Suppose we project upon it any sort of still picture; be it a street, an interior, an insert or a close-up.

Only With Eyes

Look at the screen only optically, regardless of what the picture represents. If you look at it optically only, that is, with your eyes alone, and not with your minds, what will you see—different grades of light and darkness, spread over the surface of the screen.

Now, what would make this differently shaded surface beautiful—a perfect arrangement of these different patterns of white, gray and black, into a harmonious whole.

But can you realize such an arrangement on the screen just the way you would want to? No. An artist can do this on his canvas, because he can touch every square inch of it directly with his brush, pencil or hand. He can change, improve, correct, rearrange at will, until he obtains a satisfactory result.

But a camera has no feeling for selection. It cruelly registers everything it sees. You cannot put yourself between the lens and the

film in order to eliminate or to soften only certain rays and to emphasize the others.

To a certain extent you are able to dominate the arrangement of light and shade *before* taking the picture, but to a certain extent only.

Artist Has Advantage

An artist is a hundred times more the master of his manipulations. He is free to select, to modify, to emphasize according to his feelings and inspiration. That is why his final result is satisfying. It vibrates with life, it almost moves.

But a photograph, at its best, is still lifeless, compared to, let us say, a painting by Rembrandt.

Now let us return to our mental screen. We had projected on it, a while ago, a still picture—optically speaking, an immobile arrangement of light and darkness, in different degrees and in different shapes and patterns.

Begin to Move

Suppose now that these patterns *begin to move*. Our eyes will welcome the change. The shapes, the patches of light and shade, are traveling across the screen, they are growing or diminishing, they are melting into each other, they are disappearing and new ones appearing.

(Continued on Page 19)



One of the largest cinematographic staffs in the industry on the field of action on a Western location. Left to right: Dan Clark, A.S.C., chief cinematographer on Tom Mix features for Fox, and the other members of his staff—(third from left) Curtis Fettes, Roland Platt, Clay Crapnel, Griffith Thomas and Normal Duval. Clark was caught instructing his aides in the details of a scene that was just about to be taken.

A Cinematographer's Capital Investment



Cameras, Lenses and Special Equipment Represent Capital of Several Thousands

(The following interview, reported by the editor of the AMERICAN CINEMATOGRAPHER, appears in the studio section of a current number of the EXHIBITORS HERALD):

Progress shown by representative cinematographers in immediately adopting improvements in motion photography equipment is a decided factor in the steady advance in the refinement of the cinema, according to Daniel B. Clark, president of the American Society of Cinematographers.

"The cinematographer," Clark states, "never loses his imagination to newer or better things in the way of cinematographic paraphernalia. Our history shows that we have readily adopted and encouraged all meritorious devices that have presented themselves to our attention. This has meant much more than is apparent on the surface of things. Manufacturers of cinematographic equipment necessarily are not dealing in volume insofar as this particular trade is concerned. Hence, if the cinematographer had been content to follow the line of least resistance, if he had been content with old-line equipment and the results that such would obtain, we not only would have failed to bring about this wonderful progress in motion pictures; but, on the other hand, those creators of lenses and other items would have been discouraged in their efforts and would have had no incentive to spur them on to keep abreast of the ever-improving requirements of the cinematographer.

Expensive

"While this foresighted attitude has proved a boon to the art as a whole, it has, at the same time, worked a great expense on those cinematographers who are not fortunate enough to be identified with studios whose policy is to obtain improvements in equipment once they have proven themselves. Such cinematographers, in order to follow the natural bent for their calling, find it imperative to purchase, out of their own pockets, such new paraphernalia as they may find they need in order to give expression to the novel effects they have conceived for a given picture. While an era of admirable stability long since has been reached in the matter of the professional motion picture camera, expenditures on the part of the cinematographer for new types of lenses, irises, and the like, form a considerable

portion of his salary—a portion that, in a couple of years, amounts to practically a dead loss. The reason for this is that the momentum of the progress which the camera artist has engendered in this profession is so great that the rapid changing of demands makes a type of lens, for instance, that is 'the thing' as of today is obsolete in a couple of years.

Capital Investment

"In the case of the freelance cinematographer especially," Clark concluded, "his salary covers not only his artistry, skill and service, but really covers an investment as well—an investment which, comprising cameras, magazines, lenses and so on, amounts to several thousands of dollars. Therefore he has a right to expect to be reasonably rewarded for his services. Fortunately, the larger studios long ago recognized the economic wisdom of maintaining their own cinematographic equipment, and, in addition, in always ascertaining the cinematographers' recommendations so that their outfits may always be kept up to date."

Junior Cameramen's Club Members Swap Jobs; Go Away on Locations

Ira Hoke and Cliff Shirpser have left for San Antonio, Texas, on location for Lasky's forthcoming production, "Wings." Ira is cranking John Boyle's patented Bell and Howell — Akeley combination camera while Shirpser is assisting. It is expected that both of the boys will put in a lot of time in the air.

* * * *

Billy Reinhold and Gregg Toland have traded jobs. These two popular members of the Junior Cameramen's Club are considered the foremost and highest salaried assistants in the business. George Barnes, A. S. C., now has Gregg Toland as assistant and Arthur Edeson, A. S. C., has Billy Reinhold.

* * * *

It is said on the Fox lot that Frank Powolney is turning out one of the best set of stills that has ever been accredited to a production for a forthcoming Fox picture, "Mother Machree."

* * * *

David Ragin and Max Cohen have returned from location at Carmel, Calif. Dave says the spot is very romantic. Max says "Uh-hu."

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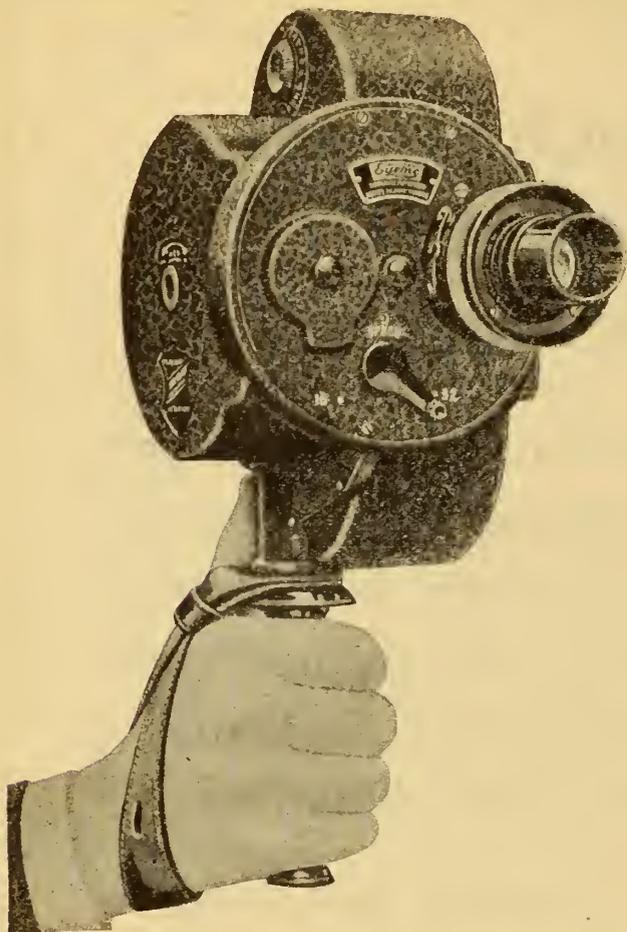
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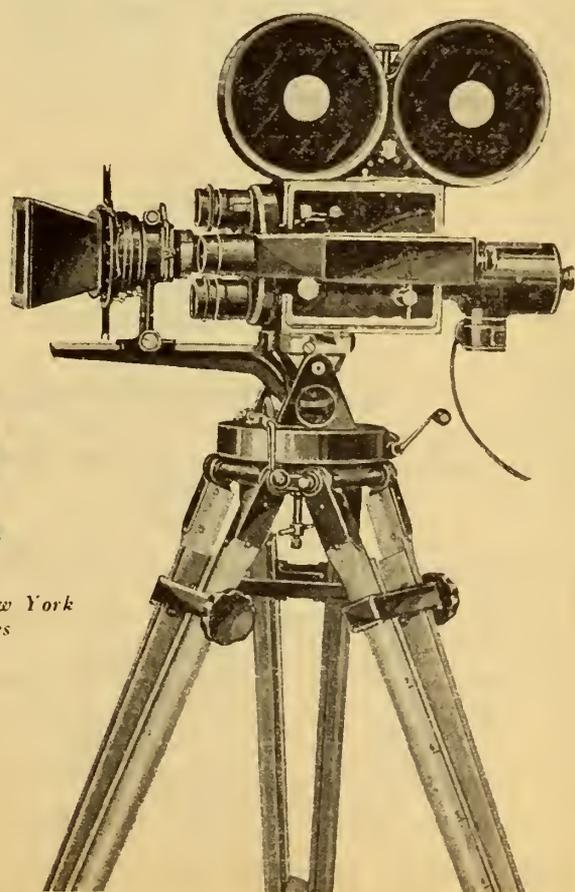
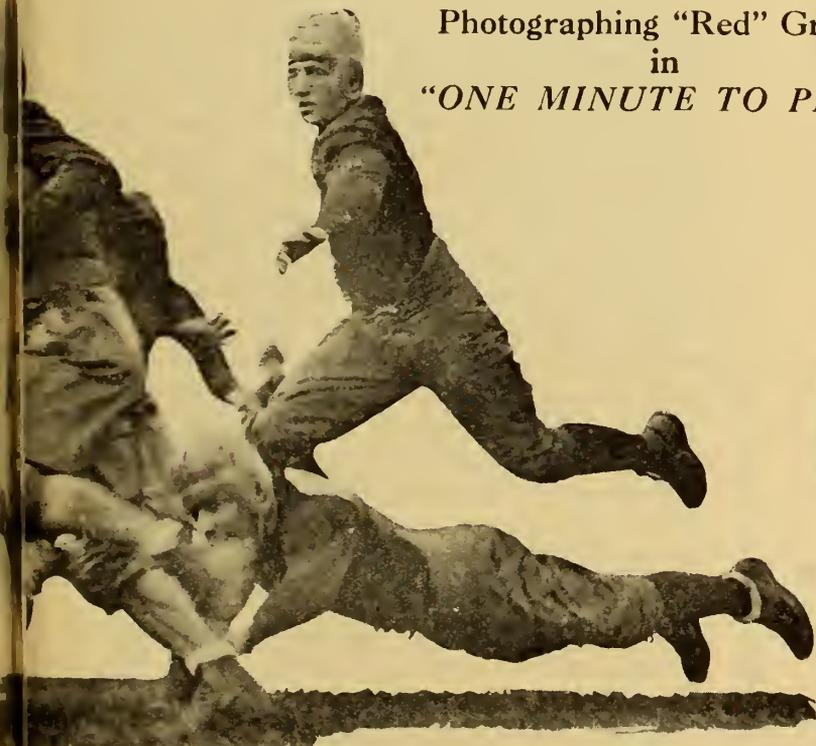
The Bell & Howell Company are pioneers in the motion picture industry, having by superior design and construction brought about the present standardization of producing equipment.

The illustration below shows one of the late Bell & Howell professional studio cameras used almost exclusively by the foremost producers the world over. Eyemo standard portable camera is rapidly gaining the same reputation for superiority in its field.

flexibility in photographing the shots, without the actors being in definite places. The quality matches the scenes of a 1000.00 professional camera of and a few of the unusual available camera permits are seen. All this, beside its simplicity and refined workmanship surely makes it one of the most exacting. I used it in my EYEMO on my current films, "Going Crooked." I used it for under-sea scenes and some scenes of Bessie Love swimming—the

camera held just above the surface preceding her as she swam. These were only possible with this type of camera. The industry is indebted to the Bell and Howell Company for creating a tool that so broadens the scope of picture telling. Still greater is the fact that everyone can now make good motion pictures with this instrument, and in addition to the scenes of a personal nature that will be made by the amateur, a great many will be made of historical record and that have general interest to the public, and can be profitably marketed. Wishing you every possible success,
CHAS. J. CLARKE.

Photographing "Red" Grange in "ONE MINUTE TO PLAY"



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AMATEUR CINEMATOGRAPHY

(Continued from Page 8)

ed because of the number of optical phenomena that can be explained by it.

Science is very exacting in its definitions and Huyghens' explanation is still called a *theory*, or supposition, because its truth has not been proven by material facts.

According to the *undulatory theory*, all spaces and bodies *within* and *without* the earth's atmosphere, are filled with an extremely elastic fluid called *ether*.

Ether, supposedly pervades all interstellar spaces, and exists between the molecules of all substances, from the rarest of gases, to the densest solid in existence.

A luminous body communicates to the ether the extremely rapid vibrations of its molecules, and these vibrations are propagated in all directions by ether, in an *undulatory* motion, very similar to the ripples produced on the surface of stagnant water, by a rapid shock or disturbance, as caused for example by a pebble or stone thrown in a calm pool.

The rapidity of the ether luminous waves is prodigious, and the length of the undulations or vibration is infinitesimally small.

It is of great interest, to compare the ether undulations producing light, with the undulations producing other physical phenomena.

Sound, for instance, is produced by undulations produced in the *air*, very similar in their deportments to the ether undulations.

This similarity is, in fact, one of the strongest arguments brought forth in the discussion of the truth of the *undulatory theory*.

When striking the legs of a diapason, or tuning-fork we actually see the rapid vibrations of the instrument.

These vibrations transmitted to the surrounding air produce a *sound*. If we touch the legs of the diapason with the hand, we stop the vibrations of the instrument, and sound ceases.

As the amplitude of the sound waves produces a difference in the intensity of the sound, so the difference of amplitude in the light waves produces a difference in *color*.

Apparently, light of all colors, is transmitted at the same velocity *in vacuo*, even in *air*, the difference of velocity in these two media

being so small that it cannot be detected by man, but this difference of velocity is readily visible in denser media, which fact will be thoroughly investigated in the course of this study.

The velocity and length of undulations, being greater for the red light, correspond to a deep sound, while coming down through the series of visible colors to the *violet*, we find these shorter and slower undulations, to correspond to a sound of high pitch.

The phenomena of *heat* is also very closely related with the phenomena of light, and we speak of a caloric ray, in the same manner and with the same meaning as we speak of a *ray of light*.

Heat, is, as light, theoretically transmitted by undulations of the ether and the greater the velocity of heat undulations, the greater is the sensation of heat.

A remarkable, palpable evidence of the possible truth of the undulatory theory, is given by the fact that if we decompose white light into its composing colors (Rainbow) and with a delicate thermopile we ascertain the difference of heat produced by each colored light, we find the thermopile scarcely affected by the *Violet*, but gradually indicating an increase of heat in the Blue, Green, Yellow, Orange respectively, up to the Red, at which color the temperature is greater, indicating thus a greater velocity of the heat undulation, just as a greater velocity of the light undulations has been proven to exist for the red than for all other colors.

Ether undulations, producing different phenomena, have been measured with great accuracy, and their length varies from the longest known radio waves, having a length of 40,000 meters, to the recently discovered cosmic rays whose length has been measured by Prof. Millikan of the California Institute of Technology and found to be 0.000,000,000,040 millimeters.

According to the undulatory theory, a disturbance, originated at any point of the ether by a luminous body, is propagated as a spherical wave in all directions around that point, and its velocity is uniform.

Now, if we consider one point of the eye or of an optical instrument, turned towards the origin of the disturbance, we can visualize the particular part of the light-wave that strikes that point, and call it a *ray of light*.

It is of great importance for the student to have a correct conception of what we call a

(Continued on Page 20)



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EDITING AMATEUR FILMS

(Continued from Page 9)

Leave one or two frames before this and cut the balance way. After the car comes to a stop there will be a brief pause before the people alight. If this pause amounts to more than two frames, cut the balance away. Continue this procedure for each scene cutting away every inch of film that lacks action. This is slow work but the results will amply repay you for the time and trouble that you made during the projection of the reel. Bear in mind that you only do your cutting and editing once—after that you will show your films many many times.

Sequence

Scenes that are out of their proper order should be bodily cut away and after carefully editing they should be spliced back into their correct position. Make your scenes follow each other in a logical sequence even if they were not taken that way originally.

Photographical defects such as under-exposure and over-exposure should also be edited out. Blurred scenes caused by too rapid motion close to the camera should also be cut away. Remember it is far better to show a short pleasing reel than it is to show a long reel full of waits and delays and photographical defects.

After you have completely gone through the reel, you are ready to project it once more. Note the improvement. It will surprise even yourself. Perhaps in the editing process you skipped a scene. Stop your projector at once and cut it properly right then and there. Don't slop through this work and think that a particular scene will get by without editing. Rarely is a scene so perfect that you can project it just as it comes out of the camera. Editing at best is slow tedious nerve-racking work. Take your time, be patient and you will find the results well worth while.

* * * *

David Abel, A.S.C., is photographing "Wolf's Clothing," a Warner Bros. production starring Monte Blue.

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Lighting and Posing Exhibition Held by Institute of Photography

Inaugurating a series of free lectures and demonstrations for the public, a highly interesting and successful exhibition of artistic lighting and posing was recently given in the large portrait studios of the New York Institute of Photography at 10 West 33rd Street, New York, N. Y. The demonstration was given personally by J. C. Neely, who is on the staff of the Eastman Kodak Company. The seating capacity of the big double studio was taxed to the limit and despite the fact that a large number of late comers were compelled to stand, every member of the audience was held to the very end.

Neely not only showed how modern lightings are done, but also revealed many secrets in the use of draperies, panels, shadow and spot lightings and artificial flowers to obtain unusual and striking background effects. A number of specimen negatives were made with attractive living models and will be used for a later demonstration on developing and printing methods to be held at the New York Institute of Photography.

Motion and the Art of Cinematography

(Continued from Page 11)

The screen seems to have become, optically, alive. Evidently, a new element of life has been introduced. What is the name of this new element? Motion.

Still, optically speaking, this mere change of pattern in front of your eyes possesses now something that even a painting by Rembrandt does not possess: *Actual motion*, a moving play of light and darkness upon the screen. Well, this is *cinematography*.

Here we have found the key to the understanding of our new medium. *Motion* is what makes it different from photography or painting. A photographer thinks in terms of static, immobile, composition, but a *cinematographer* must think in terms of motion.

Bromide?

You will say: this is nothing new. Everybody knows that the moving pictures move.

But let us again return to our imaginary screen. The patterns of light and shade upon it are moving now. If they were moving in a confused and meaningless fashion, would that make them artistic?

Synchronizing

No. It would be like sitting by the piano and pounding at the keys in any old way. Consequently, motions, like the sounds, have to be selected and then harmonized or synchronized, in order to produce a pleasing effect.

I hope I am making my meaning clear, when I say that photographing any action at random is not cinematography, as long as its *motions* are not optically satisfying, when shown on the screen.

No matter how good-looking the actor or the actress is, and no matter how wonderful his or her acting, it will still be *only a photograph* of the actor and his acting, if at the same time there is no motion that has cinematographic value.

I wish I were a master of words to make you realize the immense difference between photography and cinematography.

But let me give you a concrete example:

You all have, I hope, seen "The Last Laugh." Take the very first scene of the picture. The camera, evidently, represented one of the hotel guests. It was placed in the descending elevator and looked down into the lobby. The descending motion of the elevator, the people coming in and going out of the hotel, the revolving doors in the middle distance, the people walking on the wet pavement outside, the cars and busses passing in the background.

Cinematography

It was a real symphony of motions. It was not confusion. There were five or six distinct motions, very well synchronized. Optically speaking, rhythmically moving and changing patterns on the screen were pleasing and intriguing to the eye; mentally speaking, the picture gave a living, pulsating impression of a hotel. The atmosphere was expressed in terms of motion. It was eloquent and artistically true.

(Continued on Page 22)

More to it than the public realizes—

THE public knows a good picture when it sees one—you can bet on that! What it doesn't know is the technique, photography, and lighting that makes it what it is.

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ray of light.

When the light of the Sun is permitted to pass through a minute orifice, drilled in the wall of a dark chamber, and a thin cloud of smoke is formed in the chamber, a streak of light is made visible, which streak we commonly call a *ray of light*.

In fact, this streak, no matter how small the orifice may be, is composed of a number of rays, limited by the size of the orifice itself, and it may readily be observed that these rays diverge from each other, forming on the wall of the chamber, opposite to the opening, a sun-spot larger in size than the orifice.

These rays, may be made to take a course parallel to each other, or to converge to one point, by forcing them to pass through lenses of suitable form.

Such an agglomeration of rays, is called a "*beam*" or "*pencil*" of light, and may be parallel, divergent or convergent, according as to whether the rays composing it are parallel to each other, or if they separate from each other, or converge to a same point.

A "*ray of light*," is then an imponderable, immeasurable entity of light, representing the *direction in which light is propagated, in reference to the observer or optical instrument; and marking the shortest distance between the luminous point and the receptive point.* Now, the shortest distance between two points being a straight line, we can conceive this *direction* as a "geometrical straight line."

As the undulatory theory infers the existence of undulations, we shall conceive them as having a bearing on the velocity of light, but none on its direction.

It has also been ascertained that the velocity of light varies with the wave-length, this velocity being greater for the red rays and gradually diminishing for the rays of the different colors from red to violet.

It is evident that it becomes necessary to consider the velocity of light and its color, beside the "geometrical conception" of a *ray of light*; we can arrive at the definition of a *ray of light* as "*the direction in which monochromatic light is propagated from one luminous point to a given receptive point.*"

"Monochromatic" is a word derived from the Greek words *monos*, sole, and *chroma*, color, that is to say: *light of one color*.

Substances that readily permit the transmission of light are called *transparent*. Substances that do not permit the transmission of light, are called *opaque*.

Perfectly transparent, as well as perfectly opaque bodies, do not exist. Consider, for instance, water as a highly transparent body. A sufficient quantity of water is quite impenetrable by light, and on the other end, if we reduce gold, the most ductile of opaque bodies, to a very thin leaf, we notice that it transmits green light.

These facts are well in accord with the undulatory theory, which states, that *ether exists between the molecules of all substances*.

Other substances such as ground glass, porcelain, etc., transmit light, but are not transparent in the common sense of the word, as one cannot see objects through them. These substances are called translucent and the phenomena is caused by the diffusion and scattering that light undergoes in the interior of these substances.

Calling *media* the substances that transmit light, we can readily understand, that the velocity of light within them, is regulated by their molecular composition. We can then conclude that "*A ray of light travels in a straight line in a medium whose composition is equal in all its parts, but its velocity varies according to the density of the medium.*"

A ray of light, will then travel at its maximum velocity in the medium *vacuo*. Its velocity will be less in the medium *air*, still less in the medium *glass*, less yet in the medium *diamond*, which is the densest of all transparent media.

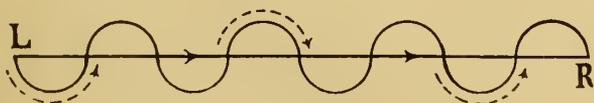


Fig. 1.

L equals Luminous point.

R equals Receptive point.

Straight line *LR* equals geometrical conception of ray.

Curved line *LR* equals wave undulation.

Direction, from left to right as pointed by arrows.

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(Continued from Page 19)

This, I call cinematography.

Now, for contrast, take any average picture showing a hotel lobby. The camera is fixed in a corner to take in a long-shot of the whole set. The pillars, the stairway, the desk, the furniture, everything is there, very well composed, if you will, but static. Some people are seated, some are walking across the lobby, some are going up or down stairs. Everything looks true to life, yet something is lacking. The set is beautifully lighted, there is plenty of action, but they were done without thinking of the optical moving pattern, or considering whether those movements in all directions will *synchronize* when shown on the screen.

This is still *only photography*, and not cinematography.

I hope that I have made clear the difference between these three things:

First, Still photography;

Second, Photography of actions and acting; and,

Third, *Real cinematography.*

(And I hope also that you have, with me, come to the conclusion that, if cinematography is going to be an art at all, it will be primarily an art of motions).

The very name of your profession indicates its real function: *motion pictures.*

Knowledge is acquired through study. An original artist draws his knowledge from life. The subject of our study being motion, let us open our eyes to the motions we see around us in everyday life.

Suppose you let a friend take you for a ride through Hollywood. While your friend is driving, you watch out for all the motions, seeming and actual. Seeming, or apparent, motions would be: Buildings, trees, telephone-poles coming toward you and growing at the same time; distant skyscrapers showing first one of their sides, then, as you approach them, gradually growing and revealing their fronts, as if revolving around their vertical axes, then suddenly disappearing from the field of your vision, unless you turn around, which would give a novel and interesting combination of motions.

If you tell your friend to turn to left or right, you will see at least two of the corners of the street gracefully swinging around you, until you come to face a new street.

Actual Motions

Now watch out for all the actual motions: The people on sidewalks going in opposite directions and in different tempos, the cars and street-cars going ahead of you and almost keeping their relative proportions, while those coming toward you are doubly growing, through their own effort and because of your approach . . . the cars at intersections going in different tempos in directions perpendicular to your own, or turning the corners and thus changing their directions by describing a quarter of a circle, perhaps a man disobeying the traffic rules and crossing the street diagonally, in the meantime rolling a spare tire . . . the policeman in the center of the crossing, revolving around his vertical axis, barber-poles doing a similar motion but without pause, an organ-grinder cranking the handle around its horizontal axis, a page of a newspaper, blown by the wind, going in unexpected directions and revolving around unexpected axes . . . a door or a window opening or closing, a revolving hotel entrance, less cadenced than the traffic policeman and more varied than the barber-pole in the tempo of its motions, and above the street the smoke, the clouds and perhaps a bird, much freer and more graceful in its movements than the creeping things below.

If you are not dizzy, take a ride on the beach and you will behold many more motions: of the waves, boats, hydroplanes, swimmers, seagulls, and then those diabolical devices made for "amusement." If you have the nerve, take a ride on one of those unnamable three-dimensional curves and watch how the world will look to you. Why, the thing is symbolical of life itself, with its pleasant going-ups, its suicidal going-downs and the final: "Thank God, it's all over now" . . . Well, this should have been a great lesson in many ways.

(Continued Next Month)

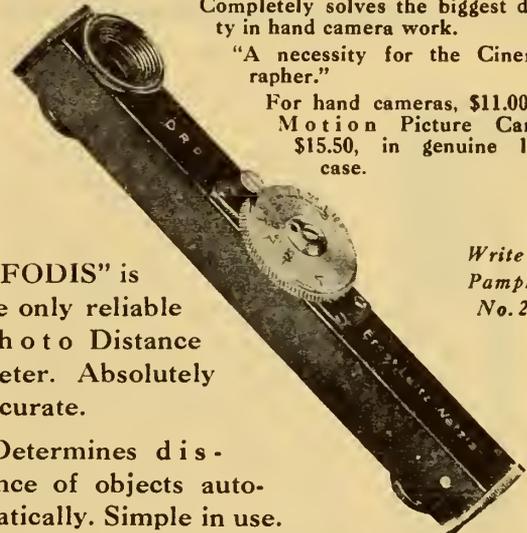


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(Continued from Page 4)

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While with Pathe, Knechtel evolved a method of producing multiple image and trick novelty photography which has been featured by Pathe during the past two years, in which period the new A.S.C. member has been concentrating on this particular type of work which, by special arrangement, will be continued by Pathe who have acquired the cinematographer's rights thereto.

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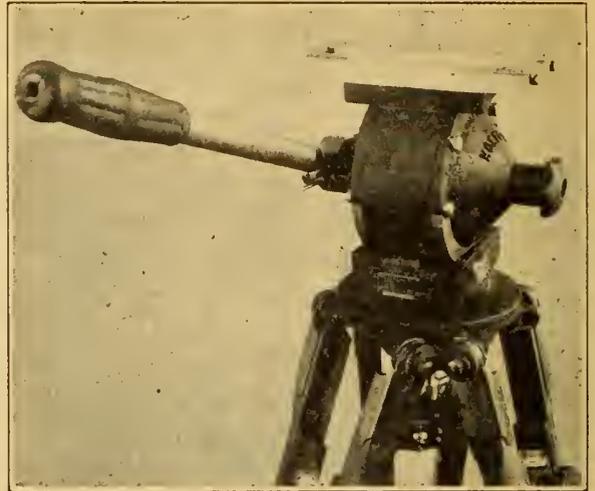
To serve its readers, this publication has effected a clubbing arrangement with Photo-Era on the following basis:

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View of Hoefner's true-ball tripod head for professional cameras.

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A new tripod head for professional motion picture cameras, known as the "Hoefner Trueball Tripod Head, Model B," has been placed on the market by Fred Hoefner, well-known Hollywood precision mechanic.

The new head is a companion creation to Hoefner's "Model A," which, announced in the June issue of this publication, was designed for amateur cameras, among the users of which it has found a wide demand.

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"This is the only way," Hoefner states, "that more than one required motion can be made to move simultaneous, making the motion continuous and the tension equally maintained, for the following of a moving object—as there is only one side or surface to a ball.

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 Jackman, Fred W.—directing Fred W. Jackman Productions.
 Jennings, J. D.—with Buster Keaton.

Knechtel, Myin V.—with First National, Burbank.
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Kurrle, Robert—

Landers, Sam—
 Lockwood, J. R.—
 Lundin, Walter—with Harold Lloyd Productions, Metropolitan Studios.
 Lyons, Reginald—with Fox Studios.

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 McGill, Barney—with Fox Studios.
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 MacWilliams, Glen—with Fox Studios.
 Meehan, George—with Fox Studios.
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 Musuraca, Nicholas—

Norton, Stephen S.—

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 Stumar, Charles—with Universal.
 Stumar, John—with Universal.

Tolhurst, Louis H.—producing microscopic pictures, for Pathe.
 Totheroh, Rollie H.—with Charlie Chaplin, Chaplin Studios.
 Turner, J. Robert—with Fox Studios.

Van Buren, Ned—
 Van Enger, Charles—with First National Productions, Burbank.
 Van Trees, James C.—with First National Productions, Burbank.

Warrenton, Gilbert—with Universal.
 Westrom, Harold—
 Whitman, Philip H.—with Mack Sennett Studios, Scenario Department.
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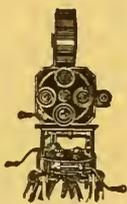
James W. Horne

Vol. VII, No. 9
25 Cents a Copy

December, 1926

American Cinematographer

Published in
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IN THIS ISSUE:

**Air Is Dared to Get Bombing Shot—By E. Burton Steene,
A.S.C.; Duplication of Motion Picture Negatives—By J.
G. Capstaff and M.W. Seymour; A Professional's Notes for
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American Cinematographer

FOSTER GOSS, *Editor and General Manager*

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Nick Musuraca, A.S.C. has finished photographing "Lightning Lariat," an F. B. O. production, which Robert Delacy directed. Included in the cast are Dorothy Dunbar, Tom Tyler and Frankie Darro. Musuraca filmed numerous location scenes at Victorville, which seems to have had a claim on the presence of A.S.C. members during the past month. Dan Clark, A.S.C., shot the action of a Tom Mix feature at the same location during a large part of the fortnight just closed.

* * *

Joseph A. Dubray, A.S.C., has concluded the cinematography on "Easy Money," a Tiffany production. The cast included Helen Ferguson, Claire MacDowell, Helen Lynch, Pat O'Malley, Geo. Hackthorne, Lawford Davidson, Heinie Conklin and Max Davidson. Direction was in the hands of Oscar Apfel.

* * *

Georges Benoit, A.S.C., is nappy that these are the days which are not preceded by alcoholic nights that bring "the morning after." For, if such were the case, Georges might well question the accuracy of his sight—if he had imbibed

too persuasively the preceding night—when he steps on the set for the filming of his current production at the Metropolitan studios. Be it known that it is the duty of Georges to shoot a banquet scene in which the guests partaking of food are not only Harrison Ford and Phyllis Haver, who head the cast, but embrace, in addition, one lion, one Kangaroo, one horse, one cat and one dog. Fortunately, no pink elephants or ring-tailed leopards are included. The picture is "No Control." Harry Myers is also one of the principals.

* * *

E. B. Du Par, A.S.C., has spent a busy month photographing artists of the musical world for presentation through the medium of Warner Brothers' "Vitaphone." Among these whom Du Par worked with were Vincent Lopez and his orchestra, Charles Hackett, "Whispering" Smith, and Mischa Elman; and, in addition, Bruce Bairnsfather, originator of "Ol' Bill," the hero of "The Better Ole," on which, starring Syd Chaplin and directed by Chuck Reisner, Du Par was chief cinematographer.



H. Lyman Broening, A.S.C., has been holding forth intermittently at Lake Arrowhead for location scenes for "California or Bust," an F.B.O. production which Phil Rosen is directing. In the cast are George O'Brien and Victor Potel.

* * *

Charles J. Van Enger, A.S.C., is at Laguna Beach, Calif., for the filming of scenes for First National's "The Runaway Enchantress." Milton Sills is starred, with a cast including Mary Astor, Arthur Stone, Alice White and Larry Kent.

* * *

Gilbert Warrenton, A.S.C., is reveling in the task of filming a record all-star cast for Universal's production of "The Cat and the Canary." Paul Leni is directing. Before Warrenton's camera are appearing Laura La Plante, Arthur Edmund Carewe, Flora Finch, Gertrude Astor, Martha Mattox, Creighton Hale, Tully Marshall, Forrest Stanley and George Seigman.

* * *

Tony Gaudio, A.S.C., is filming First National's "Three in Love," under the production management of Ray Rockett.

The EDITOR'S LENS • • focused by FOSTER GOSS

Concerning Make-Up

OF LATE a great deal of carelessness has been manifest among screen players in the matter of make-up. Perhaps this peculiarity of motion picture acting has become too matter of fact to warrant serious consideration from those whose popularity has been established throughout the theatre-going world. At the same time, however, there is no excuse for some of the slovenly cosmetics that have been slopped on the faces of various film players irrespective of their popularity.

¶ Lately we have been noting examples on this point in different pictures. To us, Jack Mulhall's make-up in "God Gave Me Twenty Cents" was atrocious. Reginal Denny's in "Take It From Me" appeared too light. Harry Langdon's in "The Strong Man" seemed likewise; in fact, Langdon's make-up has always appealed to us to be by far too white.

¶ We do not know just what the object may be in attempting to make male stars appear so fair and lady-like. Certainly it does not enhance the value of their appearance or even the immediate role at hand. Strangely enough, the tendency is to run to lightness rather than to darkness. Probably it is an inherent desire to be the proverbial fair-haired boy. But the malady does not lie alone with male players. Actresses are just as culpable. To us, Clair Windsor ever has had a flair for make-up that is slightly too light, even in "Tin Hats," which, when we viewed it at Loew's State in Los Angeles, was severely criticized by the reviewers for the darkness of the screening.

¶ The simplest form of make-up is a matter of scientific study. It should not be relegated to vague approximation as to shade and the like; and, once this approximation has been arrived at, it should not be viewed as a set formula that never can be improved on. Aside from the advice from those who are experts in the intricacies of make-up, the player needs the consultation of his cinematographer. After all, it is how he is going to photograph in a given picture that counts. It is a practical matter, not a theoretical one. And we believe that the actor will always find the cinematographer more than ready, willing and able to give the necessary cooperation.

¶ It seems evident that a person, who is not a star or a feature player who is the center of attention in productions, cannot adhere inflexibly to one shade of make-up in every picture in which he or she is cast. Take, for instance, the case of a blonde actress who appears as a second lead in a film in which a brunette is the star. Naturally, all lightings and photographic treatment are keyed to the star—a brunette. It may well happen that in these scenes wherein the brunette star and the blonde second lead appear together, the latter will suffer from

the fact that that which makes the former appear to best advantage scarcely is the right prescription for the latter. The thing to do, then, would seem to be for the secondary player to adapt her make-up to conform with the altered conditions at hand. No doubt she may have found, in past films, that one shade, when she appears alone or under less extreme conditions, presents her very favorably, but it should be borne in mind that the star in such a situation is the standard and that all others who appear with her should "point" their efforts, cinematographically, toward this criterion.

¶ Of course with those producers and directors who use panchromatic film where no make-up is applied, the problem does not assert itself. The natural colorings and shadings of the actors take care of themselves. However, make-up cannot be entirely eliminated—first, for character; and second, to cover up blemishes, or the lines of age bothering those players who still bask in the juvenile class.

¶ The time for taking inventory for more consistent make-up is at hand.

Honors for Arnold

TO JOHN ARNOLD, A.S.C., goes the honor of having been the chief cinematographer on Metro-Goldwyn-Mayer's "The Big Parade," which, during the past month, was awarded the *Photoplay* medal as the best picture made during the past year. While big things were expected of "The Big Parade," the production schedule did not allow for the time and deliberation that is conducive to superior cinematography. With no hesitancy of shooting, Arnold turned out a photographic subject that truly recorded and interpreted King Vidor's direction, Laurence Stallings's story and the acting of the incomparable cast.

Cinematographic Subject

FILM RIGHTS to "War Birds," the heroic non-fiction serial which was recently concluded in *Liberty*, have been purchased by Metro-Goldwyn-Mayer, it is reported. Like "Wings," now being photographed at San Antonio, this story presents an opportunity for extremely novel cinematographic treatment. To those who regard "War Birds" as probably the most forceful serial to run in a national magazine in recent years, it is a matter of hope that this subject may be presented atmospherically, not only in photography, but in all its phases—even to the point of making the hero one who personifies the spirit of the 24-year-old fighting flyer, rather than a "big name" actor who is creaking with the advance of age.

Official Action Requested *on* Credit Title Situation

()

(The following letter on the subject of cutting titles is self-explanatory, and was sent by Daniel B. Clark, president of the American Society of Cinematographers, to Eli Whitney Collins, president of the Motion Picture Theater Owners of America.)

Nov. 16, 1926.

Mr. Eli Whitney Collins, President,
Motion Picture Theater Owners of America,
New York City.

Dear Mr. Collins:

For some time past, our attention has been called to the practice of exhibitors in various theaters in different parts of the country in cutting credit titles from prints shown by them. These eliminations have included the names of the cinematographers; hence our interest.

Since they are a basic and one of the most important factors in the making of a motion picture, the cinematographers feel that, as a reward for their artistic and practical efforts, they have the right to have their names remain on the credit titles. That the producers and distributors themselves are of the same opinion is indicated in the fact that these names were prominently placed there in the first place. With the cinematographer thus recognized by those who produce motion pictures, we are not approaching the situation from the angle that the exhibitor is not vested with the authority to arbitrarily cut away these credit titles. Rather we would, officially through you, appeal to the exhibitors' sense of fair play to leave these titles intact. The only logical argument that has ever been advanced in defense of the practice is that the procedure is necessary to save time; yet when it is realized that but a few seconds are gained, such an argument obviously is fallacious.

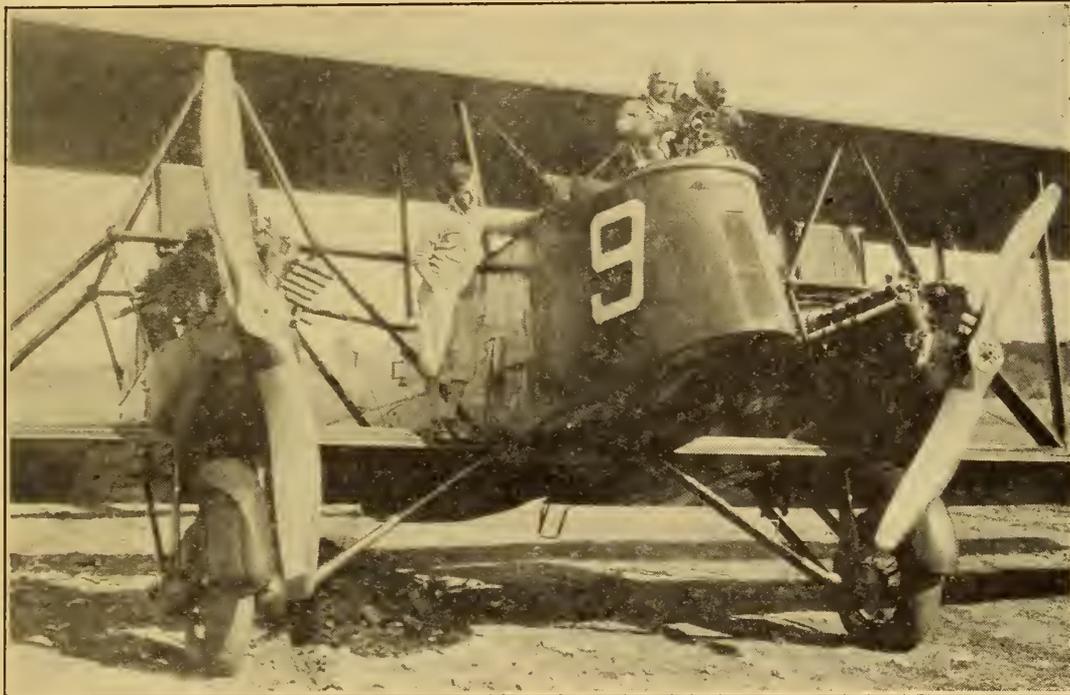
We have contributed so much to the general progress of films, and we have worked so long and hard in doing so, that we feel that we are justified in asking the exhibitors to preserve this screen recognition which, we believe you will agree, we richly merit.

Trusting that you will receive this in the spirit in which it is rendered,

Sincerely yours,

(Signed) DANIEL B. CLARK,
President, American Society of Cinematographers.

Air Is Dared to Get Bombing Shot By E. Burton Steene, Thrilling Akeley Scene Made from Dangerous "Setup" in Bomber for "Wings" A.S.C.



Harry Perry, A.S.C., (at camera), chief cinematographer, and William Wellman (left), director, on "Wings," being produced by Paramount on an elaborate cinematographic scale at San Antonio, Texas.

In 1921 I was in Berlin and photographed, while there, an air picture the scenes of which were laid during the World War, and concerned Germany's supposed supremacy in the air at that time. The picture was intended for national release only and was not shown in any other country than Germany and her possessions. I was making a trip through Central Europe, and by the merest chance signed up with the concern organized to make the picture, which took but five weeks in the making. I did all the aerial work. The big thrill of the picture was a scene showing a large French ship brought down in flames, and until that time the most thrilling shot I had ever made from the air, although I have been flying since 1912 and have worked with Lincoln Beachy, Art Smith, General Chas. F. Lee, R. A. F. and many others. Beachy was killed at the S. F. fair in 1915 and Art Smith was killed at Weston-Super-Mere, England.

after he had gone through the war. His ship fell 200 feet while taking a ride one calm and peaceful afternoon.

Great Thrill Comes

The greatest thrill of my life, however, has been while doing my present work with Paramount's "Wings." Akeley cameras are always given the most difficult "set ups" when anything big is to be done. Not content with airplanes and balloons being crashed to the earth, a whole French village is wiped out by bombs released from a giant Martin bomber, painted and revamped to simulate an enormous Gotha bomber. Chief Cinematographer Harry Perry, A.S.C., assigned me and my Akeley to the bomb compartment containing twelve 100-pound bombs of T.N.T. I was hoisted and squeezed in the remaining space in the "bombay" as the bomb compartment is called. My camera was mounted in such a position that

it was shooting straight down. Army regulations require every person going aloft to wear a regulation pack carrying an emergency parachute, one of which I wore. We made several practice flights and dropped dummy bombs over the village to get the range. I soon found that the parachute pack was too cumbersome and interfered with the proper handling of my camera. I then was forced to secure a model of 'chute that hung on the front, instead of the back; this gave me a trifle more room, as I was shooting from a kneeling position, at an altitude of less than 600 feet.

Three Eyemos

In addition to my Akeley, I had three Eyemo automatic cameras shooting down, one operated by Art Lane, an assistant, and the other two by an electrical device. The call then came "This is the picture." Everything seemed safe and snug perhaps to those on the ground but with 1200 pounds of T.N.T. six inches away in a space so small that I could scarcely move my legs in my kneeling position, suppose something went wrong and we had to make a forced landing or perhaps crash with these twelve 100-pound missiles, primed to go off in contact!

Captain S. R. Stribling was pilot. Twice we circled the village, convoyed by two Fokker ships, while two Martin bombers and three smaller planes were at an altitude of about 1200 feet with cameras mounted on them to show the three invading planes below bombing the village.

From Above

Harry Perry, Faxon Dean and Paul Perry, all A.S.C. members, covered these shots from the bombers above.

On the first two trips Captain Stribling dropped a "dud" to get the range. A thin rope was fastened to my left arm which led to Captain Stribling's cockpit through the interior of the bomber from which he released the bombs. A signal of two sharp pulls was the word to tell me the bombs would be released within fifteen seconds and to start cranking. I could see nothing fore or aft, only a hole in the "bombay" directly in front of me, 2 by 4 feet. I could not see what was coming, hence the signal. Naturally the scene would be a short one as the ship was doing 90 miles and I must get the explosions of all the bombs as they hit the village.

Intense Interest

By this time, I was so interested in making a successful shot that I forgot all about the T.N.T. and everything going on. I had to keep my eye glued to the finder eyepiece—the slightest jar would knock my eye away from it and a foot or two of film lost was not to be considered. Captain Stribling gave the two yanks. The moment had come! Looking through the finder, it was my job to grind and pick up the bombs as they dropped an inch or two from my cranking arm, keep them in the center of the picture until each one exploded. There was dynamite planted in the village to augment the explosions. Down they went all in a row; they slipped out of the compartment like grease for I did not hear or see them until I picked them up in my finder.

Sure Shooting

It was a wonderful sight to see these death-dealing messengers speeding down—the terrible explosions took place right on schedule, due to the unerring eye and hand of Captain Stribling.

I do not know how far the concussion lifted the ship, but for several seconds it shook and trembled with each explosion until I thought it might possibly be out of control which of course it was not. The sensation of being rocked and thrown about in the air in a giant bomber a scant 600 feet above the ground while dropping 1200 pounds of T.N.T. is a thrill not often given to a man. In my cramped quarters it would have been very difficult if not impossible to get away with my parachute, but my confidence in the pilot kept me in repose.

Destruction Complete

The village was totally wrecked by this German invader and the scene was a great success and will be incorporated in the picture "*Wings*," along with the thrilling shots of the three ships, bomber and two escorts, from above. There were nine planes; it must have been a beautiful sight but I for one did not see it, until the rushes were shown. All I saw was straight below. It will be a long time before I could get a thrill that this stunt gave me. It took about an hour to do the stunt. I was confined so tightly in my cramped quarters that I had to be lifted out as my legs were totally numb below the knees.

Duplication of Motion Picture Negatives

Fine Grain and High Resolving Power Are among Requirements for Material Used. *By J. G. Capstaff and M. W. Seymour** High Maximum Contrast Not Desired for Duplicating Emulsion; Many Defects Involved.

The making of a first class duplicate negative calls for greater skill and makes greater demands upon the materials than appears at first sight.

A perfect duplicate negative would be one which would give prints identical in every respect with those obtainable from the original. This means that the duplicate negative should have perfect tone reproduction and definition or sharpness and should appear no more grainy than the original. The essential requirements thus placed on the printing material are: sufficient latitude to reproduce correctly scale of tones likely to be met with in an original negative; extremely high resolving power; and fine grain. To these must be added the practical requirement of sufficient speed for contact printing. It may be said that no one emulsion excels in all of these characteristics. If an emulsion has the finest possible grain it cannot also possess the greatest latitude obtainable combined with the maximum speed, and so on.

Particular Purpose

Each type of emulsion is made for a particular purpose and consequently has the qualities most essential for that purpose even at the expense of other desirable, but less important qualities.

Motion picture negative film is especially designed for use in the camera. It has high speed to permit taking pictures when the light is not brilliant, great latitude to cover errors in exposure, and a medium value for its maximum contrast. It also has sufficiently high resolving power and fine grain to serve its intended purpose. Although it is an excellent negative material, it is not the best for making duplicates. Positive film, on the other hand, is intended for making prints for projection; it has latitude to cover the range of tones in a normal negative and the speed necessary for contact printing. It also has fine grain, high resolving power, and sufficiently high contrast

to give good prints from flat negatives. The best duplicating material, however, should have even higher resolving power and a lower maximum contrast. The reasons for this will now be considered.

The Negative

A motion picture negative under the microscope is seen to be made up of black silver particles with clear interstices between. Whereas the function of the printing emulsion is to image these particles and interstices, no emulsion made has high enough resolving power to do so perfectly. The image of the granular structure always appears more ill-designed and coarse than the original, with the result that the picture when enlarged on the projection screen appears more grainy than the negative from which it was printed. The increase in graininess is not serious in positive prints from original negatives, but unfortunately it can become painfully evident in prints from duplicate negatives, because in the operation of making a master positive, then a negative from this, and finally a positive print, the grain structure is coarsened three times. It is essential then that if the graininess of the screen picture is to be kept at a minimum, the emulsion used in making both the master positive and the duplicate negative should have the highest possible resolving power.

No High Contrast

It is desirable that a duplicating emulsion should not have a high maximum contrast, not only because high contrast is unnecessary, but because of development defects that occur when development is not carried to completion, as would be the case were a high contrast emulsion used for duplicating.

The defects produced with low development are termed the "Eberhard" effect and the "Mackie" line. Eberhard, a Danish astronomer, showed that the density of small exposed areas in a film differed from that of large areas which had received the same exposure, and that the inequality was greatest when development was incomplete. He found that under these conditions a small ex-

*Research Laboratory of the Eastman Kodak Company; this paper was read before the recent meeting of the Society of Motion Picture Engineers.

Amateur Cinematography

Simple Hints to Aid the Amateur

By Hamilton Riddell

Proper Cataloging Prevents Confusion and Assembles Sub- jects under Kindred Heads

WHEN buying a motion picture outfit by all means purchase a suitable screen. Few amateurs realize how important a screen is for the successful projection of their movies, and are satisfied to project their pictures on a curtain, wall, or what not; this means of showing films is very poor and most times unsatisfactory. A proper motion picture screen increases the brilliancy of a projected film, has no annoying mass of creases, and properly "frames" your projected pictures.

Home-Made Screens

Many amateurs attempt to make their own screens, and of course this is possible; but it is far better to buy a screen, for you have the assurance of a perfect reflecting surface which is an art to duplicate. There are many good screens on the market, and in various sizes so that it is easy to find the one that is most suited to your special use and size of projected picture. Count it a good investment, and buy a screen; you will be surprised and pleased with the results it will give you.

PROPER MAILING

MAILING your exposed roll of film should have your proper attention. The writer has seen many rolls of film sent to the finishing laboratories packed most carelessly. It can not be too emphatically stated that the exposed roll of film must be encased within the metal container supplied with the film when purchased. Next, put the metal container in the little yellow carton, and print your name and address on it. Be sure that such notation is legible, as it's the one and only means for the laboratory to identify your film; naturally you should be as interested in this detail as the laboratory; that is, if you care anything about seeing your film again.

Utilizing Box

The writer has found that the cardboard box, in which developed films are returned from the laboratory, may serve quite well as an additional container for sending your film to the laboratory to be developed. Place the yellow carton in the cardboard box after having removed the old address label and cancelled stamp; then paste a new label on the card-

board box, properly addressed to the nearest finishing laboratory, and securely tie the box with the string.

Do not seal the box in any way as this is against postal regulations for parcel post packages. Only when sending your film by first class mail is it permissible to seal the package.

By packing your film in the manner described above you can rest assured that it will reach the finishing laboratory in good condition. If you are sending many films to be developed, a rubber stamp with your name and address can be bought for a nominal sum; this stamp is very handy for marking the yellow carton which contains your films. It is quicker and guarantees that the laboratory will always be able to identify your films.

CATALOGING PERSONAL FILMS

AS YOU obtain your personal movies, you will no doubt have films of many varied and interesting subjects. When you have six or more 100-foot rolls of film, it is time to catalog them according to subject.

Family Subjects

You will have many pictures of the family that you may not always care to show to all your friends as they are not altogether interesting to others as yourself and family. So you can start with reel number one, and only include your family pictures on it. This reel will soon grow from one to many, as the years go by, and you will, by so cataloging them, have all your family pictures together.

Pictures which you have taken while on a trip are always interesting to all your friends and are more suited to general showing; so it is well to include them under a separate projection reel. All the pictures you take of your friends can usually be so cataloged as to go on another separate projection reel. These are only suggestions, and the amateur can, and will, vary them in cataloging his films. Hence, when it's "Family Night" at your own show, you have all your personal family pictures to show, all together on their respective projection reels; or if it's "Friends' Night," you have your general pictures of your trips and movie experiences which they are bound to enjoy.

A Professional's Notes for Amateurs

Part II
By Jos. A. Dubray,
A.S.C.

Fundamentals and Principles
of Lens Construction Given
Lucid Explanation

Although light travels with an extreme velocity, human ingenuity has accomplished the seemingly impossible feat of measuring this velocity to a great degree of accuracy.

It would be inconsistent with the scope of these articles to enter into a detailed description of the means by which such measurements have been secured.

Suffice to say that:

Romer measured the velocity of light through astronomical observation of the respective positions of the earth and the first satellite of the planet Jupiter at six months' intervals.

Foucault used a very ingenious laboratory apparatus less than 14 feet long, through which a small beam of sunlight was submitted to a series of total and partial reflections and rotary deviation, which enabled him to derive a formula giving the velocity of light at a figure somewhat less but astoundingly near the results obtained by astronomical observation.

Fizeau obtained his results through terrestrial observation between two points situated at nearly 30,000 feet from each other.

A method similar to Fizeau's has been recently used in the mountains of California by Professor A. Michelson of the University of Chicago.

The following table gives some of the results obtained:

by	In the Year	Velocity per Second in Vacuo.	
		Miles	Kilometers
ROMER	1675	190,000	304,000
FIZEAU	1849	196,000	313,600
FOUCAULT	1850-1862	185,157	296,257
MICHELSON	1880	187,443	299,908
YOUNG & FORBES	1882	188,314	301,382
NEWCOMB	1882	187,413	299,860
CORNU	1900	187,750	300,400
MICHELSON	1926	186,300	298,080

These are not all the complete data available on the results obtained in the solution of this captivating problem.

We have chosen these, taking in consideration the precedence of effort, and the name of the scientist.

These results obtained by different means, in a lapse of time covering a period of 251 years, have a truly amazing significance if we consider the slight differences in the figures obtained in such a delicate undertaking.

WE shall now consider the behavior of a ray of light, incident to the smooth and highly polished surface of an opaque body; that is to say, a ray of light emanated by a luminous body, and falling upon such a surface.

A very small portion of this light is *absorbed* immediately at the surface of the body or at a small distance from it, and is extinguished.

Another portion of the incident light is *scattered*, or irregularly reflected in all directions.

This scattered light is the light that renders visible objects that are not luminous. If this phenomena did not occur, our world would be a strange one, engulfed in total darkness, broken by intense patches of light, emanated by the luminous bodies or regularly reflected under the formal condition which we will presently expound.

It is the scattering of the light that strikes the upper layers of the earth's atmosphere before sunrise and after sunset, that produces the well known phenomena of twilight.

Remains that portion of light, which is regularly reflected, according to well established laws.

We may note here the difference between the expressions of *theory* and *laws*. A *theory* is an accepted, but not thoroughly proven statement. In other words, a theory is the best explanation found by man of the causes producing certain phenomena.

The supposed existence of the ether and of Huyghens light-waves, upon which the undulating theory of light is based, are not absolutely proven, but only serve to explain most of the phenomena produced by light. They leave a field open for investigation and supposition from which new theories arise, such as the electro-magnetic theory of light announced by Clark and Maxwell, and the electron theory of Lorentz.

In opposition to a theory, is a *law*, which is an immutable proven fact, accepted beyond discussion, because in all cases in which the *law* has been applied to practical uses it has completely agreed with the facts derived from observation.

Scientific Author Has Wide Experience



Writer of Articles for
American Cinematographer
Is Authority in Profession

In writing "A Professional's Notes for the Amateur," the second installment of which appears in this issue of the *American Cinematographer*, Joseph A. Dubray, A.S.C., draws from a wealth of cinematographic experience that extends over a period of years during which time he has enjoyed an enviable reputation as a cinematographer of the first magnitude.

Panchromatic Expert

Dubray is especially known among the profession for his pioneer work in the field of panchromatic film, having been one of the first to investigate this type of stock which is coming into an extremely wide vogue. In fact, the A.S.C. member is looked to as an authority in this line of work, in which he, now as heretofore, is conducting exhaustive experiments.

Many well-known cinematographers of today "broke in" the profession under the tutelage of Dubray, so that he is eminently fitted to write such an educational series as is appearing under his by-line in the current issues of this publication.

Scientific Study

Dubray's camera career was preceded by a thorough education in various institutions on the Continent, where he specialized in scientific studies. He was born in France and educated at the School of Chemistry at Milano, Italy, of which place of learning he is an alumnus.



Jos. A. Dubray, A.S.C.

He was initiated in the photographic profession in his father's portrait gallery in France. Here he, at an early date, began specializing in ortho and panchromatic work, making reproductions of classics which eventually found their way into the celebrated galleries of France, Italy, Spain, Belgium and Holland. Other phases of scientific photography gained his attention, and he devoted a great deal of time to X-ray, microphotography and spectrophotography.

Film Work

His primary experience with motion photography was as early as 1898; in the following year, he attained his first commercial results. After several years of freelancing, he became affiliated with Pathe-Freres. With this organization he served un-

til 1910, at which pioneer date he was given the signal of honor of being assigned to go to the United States to organize and take charge of the photographic department of the Pathe studios at Jersey City.

Dubray continued this connection until 1913 when the call of freelancing again caused him to visit Cuba, Mexico and the West Indies for travel and scenic material. Coming back to the United States, he joined the Wharton Studios at Ithaca, N. Y., and remained there until 1914 when, immediately at the outbreak of hostilities, he answered the call to fight for the tri-color and was at once off for the field of battle in France. In June, 1918, he was assigned to the Fifth Division of the A.E.F., as interpreter, and served in this capacity until the conflict closed.

Back to Camera

Following the armistice he hastened to New York to resume his cinematographic career. He became identified with Famous Players-Lasky with whom he served for several months, at the end of which time he came to Southern California to be chief cinematographer for Louis Gasnier. He photographed many of that director's efforts, including "Kismet." Then came a long engagement over a period of four years with Robertson-Cole, after which he again took to freelancing in which he at the present is still engaged.

Dubray is an accomplished linguist. Besides English, he speaks fluently, among other tongues, French, Spanish and Italian.

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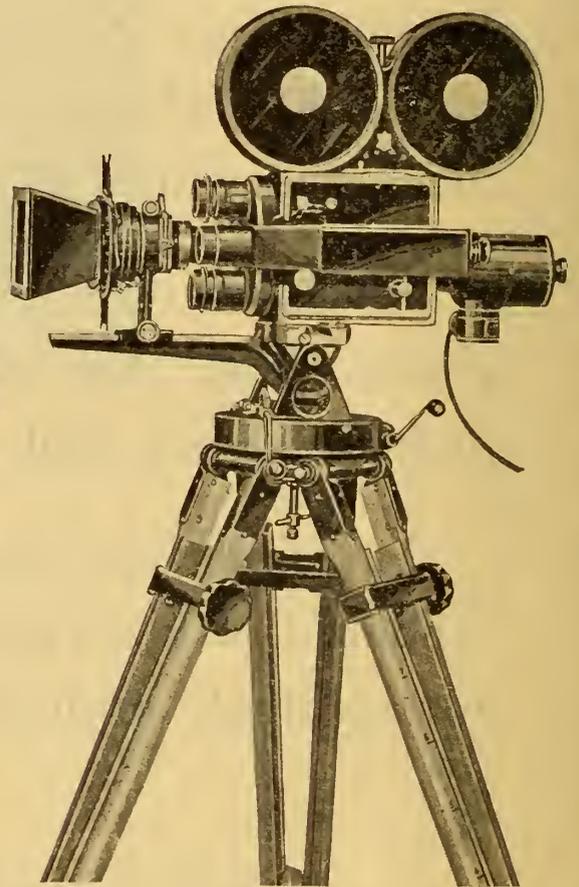
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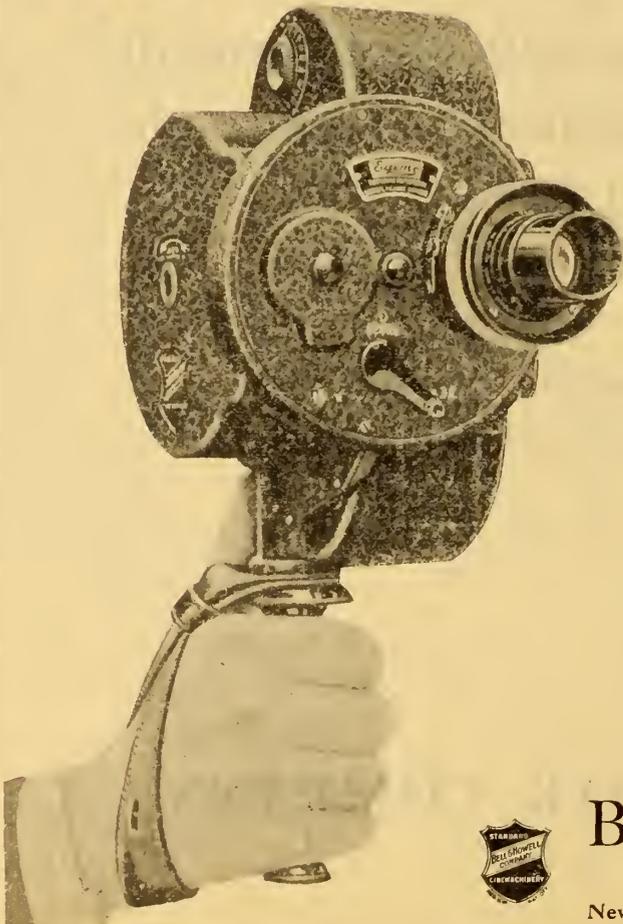
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Motion and the Art of Cinematography

By Slavko Vorkapich

Conclusion of Savant's
Lecture Expounding Rev-
olutionary Ideas on Films

(Continued from Last Month)

The next day, if you still have the ambition to study motions, take a similar ride and try to grasp all those motions, seeming and actual, at once, as a whole, as a continuity simultaneous and successive. Then go to Henry's, or to some other cafe, where they will let you sit for a while and watch people's motions.

As you approach the door, you will see in it a transparent reflection of yourself, and the cars and people passing back of you, and at the same time the people and the waitresses inside the cafe. As you enter, and, while closing the door, if you turn around, you will get just a flash of the boulevard once more, then, turning back again, you will perceive a confused picture of the whole cafe. It will be out of focus for a moment. You will experience a feeling of strangeness, no matter how familiar the cafe is to you, because the arrangement of the people is always novel and unexpected; then you will perhaps look for a familiar face, and if you see one, you will focus on it more sharply (notice that even in focussing there is a very subtle motion taking place). While you are going or being led to your table, the counter is changing its perspective, as well as the rest of the room. You swing around the table and take your seat: the room turns around, then almost establishes its balance. While you read the menu, the middle parts of the people and waitresses pass beyond the farther edge of your table, out of focus, of course. A waitress stops, you raise your head and look at hers, against the ceiling. Give your order and now watch other people's motions. There is a chap, sitting opposite you, swinging on one side (inverse pendulum motion) so as to reach more comfortably for money or something in his trouser-pocket. Just at that moment, another "interesting type" is reaching for his hat, getting up and going in the opposite direction, describing a pattern of motion symmetrical but varied in relation to the swing just mentioned. Somebody is pouring cream in his coffee; somebody is shaking the salt-shaker, the former motion being more harmonious, the latter more rhythmical, "staccato." Somebody is letting the pages of the telephone directory flow from under his thumb, then lifting up the receiver and dialing the number. The electric fan is trying to

please everybody with its double motion: a fast vertical revolution and a slow horizontal swing.

Now, there are three fellows coming in and approaching the round table in the center. There is something about their movements which tells you that they have sinned against prohibition. You cannot imagine how the cafe looks to them, unless you have committed the same crime. But watch their motions. They are broad, generous and at least 25 per cent slower than the average, all of which makes them more artistic. Watch them: how lovingly and loiteringly they stir their coffee, how many variations they are able to add to the plain theme of cutting the steak, how dreamily and tentatively the fork approaches its destination. There is a flourish of an orchestra-leader's movements in their attempts to strike a match. And the heavenward swing of their heads when they blow out a generous puff of smoke! All this is enough to make you realize that the whole world is nothing but an immense cacophony of motions.

It is up to you now, if you are an artist, to make a symphony out of it.

And, by the way, I should prefer to see the scenarios look more like musical scores, with their *andantes*, *largos*, *lentos*, *prestos*, etc., than like the present apparent police-records: No. 234; Long-shot of Mr. X coming through a french window, (one can almost see the cross that "marks the spot where the body fell"). So much for the physical motions.

For the study of motions that appear in our thoughts, the following practice should be advised:

Mind's Eye

After you have observed, studied, grasped, digested and mastered all these external motions, turn to those of your imagination. In a preferably dark room, relax completely and close your eyes. Visualize a blank screen somewhere in front of your mind's eye. Now let your subconscious mind, your imagination play absolutely freely, but use your will only to compel your fantasy's improvisations to project themselves upon that screen; at the same time watch very carefully whatever appears, no matter how nonsensical it may seem. Now, this practice of letting your imagination



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dream absolutely freely and at the same time keeping your projecting will and your attention awake, requires a very fine mental coordination, but with practice it can be achieved. I must repeat: Let your imagination run riot, no matter how absurd its whims may appear; do not try to impose upon them some conventional continuity. Only this way you will come to see original and amazing things and you will learn that your subconscious mind is a greater artist than your conscious mind, trained perhaps for years. Someone said that in our dreams every one of us is a Shakespeare.

One cannot predict what you may see on your mental screen. It all depends on your individuality, on your fundamental make-up. It is easy to point out happenings in the external reality; but the realm of dreams, that internal and higher reality, is so much more varied and unlimited; it is the very source of the original artistic creation. But you will notice one thing common to all of us: those mental pictures *move perpetually*, they do not stop for the fraction of a second; they appear suddenly or grow and take shape gradually out of an insignificant something; they transform, metamorphose; they dissolve out and into something else; they gradually fade out or suddenly explode; they reappear but with variations, and so on. Indeed, the wealth of moving pictures that appear in these conscious dreams is immense.

(The above suggestions should not be taken as recipes how to make street-scenes, cafe-scenes, dream-scenes, etc.; they should merely lead to the training of observation. Original artistic creation cannot be taught).

Language of Motions

So far, we have made only one step in our investigation. But this first step was the most important, because we discovered the fundamental principle of the cinema-art: *its language must be, first of all, a language of motions.*

We have solved the problem optically only. But a real work of art does not please the eye alone. Besides that, it must mean something;

it must *express* something of deep human interest.

That leads us to the problem of expression of thoughts and emotions by means of the cinema. But to investigate this and the psychological value and meaning of different motions would take us more than one evening like this. For tonight, we shall pass, in a very sketchy manner, one or two points of the problem.

Today's Titles

To my way of thinking, the titles, as they are used today, are a sign of cinematic impotence. It might sound radical but it seems logical, nevertheless, to state that, as soon as a picture needs a title, and if a cinematic substitute could not be found, the subject is not good screen material.

A thought, a feeling should always be expressed in motion pictures. Those white, glaring letters have no cinematographic value. They are cold and lifeless. And it is a shame to notice that, after a very good tempo and rhythm have been imparted to a scene they are suddenly killed by a static title.

To Peer in Soul

I also believe that, very often, it is not enough to have an actor express a thought or an emotion by his mimicry alone. A way should be found to picturize his thoughts and his feelings. Figuratively speaking, the camera should be able to look within a man's soul.

When we achieve the mastery of our tools and find a way to express our joys and sorrows, our dreams and visions in an eloquent, cinematic manner, then only the cinema will have the right to claim its place among other arts.

The attainment of this goal depends mainly on you, my friends, because cinematography is primarily *the art of the cinematographer*.

The future belongs to those among you, who can handle the camera with spirit and inspiration and who can put a living thought and a vibrant feeling between the lens and the screen. The future belongs to this new type of artist: *the creative cinematographer*.

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Congress of Cinematography and Projection Suggested

President of American Society of Cinematographers Advocates Great Conferences.

By Daniel B. Clark, A.S.C.

Believes Way Found to Eliminate Inconsistency of Cinema Exhibitions.

How many times hasn't the cinematographer sat in the studio or laboratory projection room and viewed a print that projected perfectly, only to see later, when the film is exhibited in a theatre, a heart-breaking example of bad screening?

How many times hasn't one viewed a superlative exhibition of one print at one theatre and a miserable showing of the same print at a second house?

These examples have forced themselves on all identified with the making or projection of motion pictures. Whether the fault has lain with the photography, the projection methods employed, the throw, the light source, or any of a half dozen other possible causes is always difficult to ascertain.

Variance

This much is certain: the print that often is the best for one type of house is the worst for another type. In the case of important first-run theatres, special prints, to meet existing conditions, often are made. But such a procedure clearly is impractical for every theatre in which a motion picture is shown. On the other hand, the patron in the smallest house surely is no less entitled to a decent exhibition than the audience in the most magnificent theatre in the land.

Outstanding

This condition is another of those of vital concern to all those connected with the making, distribution or the presentation of motion pictures. In fact, by some it is regarded as the outstanding practical problem of the day. When one goes through the exhibitors' reports on a certain picture in the theatre owners' trade journals, and finds the photography raised to the sky by one exhibitor and panned to the dust by another, some indication is pre-

sented of how different a grade of print may appear under changed circumstances.

Uniformity

It is impossible for the laboratories to make a print to meet the requirements of every theatre which shows a particular production. But it should not be impossible for a standard of various types of prints to be adopted, and, in turn a uniform system of projection to be established, the total result of which would be to make a certain picture appear the same on the screen of the meanest theatre in the smallest hamlet as it did on the screen of the finest house in New York.

I do not mean to revolutionize equipment or anything of the sort. *The problem is not one of destruction of existing apparatus or of vested capital.* I believe that by the intelligent use of the tools that we already have on hand, we can approach a uniformity of screen presentation that will surprise even ourselves.

United Effort

This is not a problem of any one person or any one group of persons in the motion picture profession. It is of concern to all of us. Therefore, the writer looks with favor on the calling of a *Congress of Cinematography and Projection*, at which this thing can be reasoned out. At this congress, there should be representatives not only of the cinematographers, but of practical projectionists, projection engineers, studio and commercial laboratories, lens makers, projection equipment manufacturers, light source makers, directors, producers and all others who are concerned.

This suggestion is but briefly expressed in the foregoing. Many other details will suggest themselves to those who are interested. In all, such an undertaking, in which we all pool our efforts, will culminate, it is my conviction, in unbelievably good results for the profession—not only artistically but financially.

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*Application for Patent Filed
on Lens Stated to Work at F 1.4*

Application for letters patent on a lens working at F 1.4 has been filed by C. C. Minor, Hollywood lens manufacturer.

Mr. Minor's work on the new lens follows principles contained in U. S. Patent No. 1,360,667, issued to him on November 30, 1920.

“The plan,” the preamble to Mr. Minor's present application reads, “of splitting one of the two convex lenses forming part of the combination of a Cooke lens system, has met with marked success, as exemplified by several new types incorporating such optical principles.

“The purpose and object,” the preamble claims, “of this present application for letters patent is to entirely overcome the obstacles inherent in the construction of a system of four elements, whereby color correction is attained to a degree that both the primary and secondary spectrum errors are reduced to

such a minimum that the claim of apochromat is wholly deserved.

“The qualities of performance,” it is further claimed by the preamble, “for this new and improved objective are those of an anastigmatically flattened field, freed from coma, flare, etc. To this end objectives have been produced capable of performance at the enormous aperture of F 1.4.”

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Magnitude of Los Angeles' motion picture industry is brought out in a report in the Los Angeles Times from the Eastman Kodak Company, to the effect that during 1926 approximately 11,180 cases of unexposed motion-picture film, valued at \$5,200,000, will have arrived at Los Angeles Harbor, via the Panama Canal.

The water method of shipment has been found vastly cheaper and far safer than rail shipment, in that insurance on the commodity is much easier obtained, it was said.

Weekly shipments of film to this port, according to the announcement, average 215 cases. The footage for the 1926 total will amount to 268,520,000 feet, or enough to twice girdle the globe with the celluloid strips.

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Advertisers Now List Films as Important Item in Budgets

That use of the motion picture screen is an effective and profitable medium of advertising is coming into wider recognition constantly among advertisers and is claiming more attention as they make up their publicity budgets from year to year, was the consensus among members of the Screen Advertisers' Association at their recent mid-year meeting at Kansas City, presided over by A. V. Cauger, head of the United Film Ad Service of that city, in the absence of President Douglas D. Rothacker of Chicago, who was absent on account of illness.

Among the speakers during the three-day session were: Paul Kendall, advertising manager of the Long-Bell Lumber Company, Kansas City; Harvey Roemer, general sales manager of the Bell & Howell Company, Chicago; James P. Simpson, Dallas; George A. Blair, Eastman Kodak Company, Rochester; Sumter Calvert, Capital Projector Company, Chicago; H. E. Hollister, Pyramid Film Company, Dayton; Lou Holland, Kansas City, and Robert A. Warfel, executive secretary of The Advertising Commission, New York.

As a result of the meeting, the officers and a committee have under consideration the development of plans for presenting the message of screen advertising to the advertising clubs of the country in co-operation with which the Screen Association is affiliated as a department of the Advertising Commission.

There is a probability that the screen Association will conduct its annual meeting as a part of the convention of the International Advertising Association at Denver next June and give up the idea of holding a separate meeting in February, as heretofore, although decision was deferred pending consultation with President Rothacker. Several members of the association feel that more effective results would follow the holding of a meeting with the big convention, and are advocating that a meeting be arranged at the time and also that the Screen Association set up an elaborate exhibit and demonstration at Denver.

Mr. Gauger, who was host to the convention and provided much entertainment, caused the issuance of a convention publication under the name of “The Reel Dope.”

DUPLICATION of MOTION PICTURE NEGATIVES

(Continued from Page 9)

posed area surrounded by an area of less exposure developed up denser than it should, while small areas surrounded by areas having greater exposure developed up with less density than they should. The explanation of the phenomena is simple. In the first case, the developer acting on the small exposed area diffuses into the surrounding gelatin as it becomes exhausted, and fresh developer diffuses into the spot from all sides thus accelerating development. In the other case, when the small area has had less exposure than its environment, the opposite conditions hold, development of the small area being actually restrained by the reaction products diffusing into it from all sides. If development is stopped at an early stage, the defect is quite pronounced. If, however, development is continued until the image has reached maximum contrast, fresh developer has time to soak into the film from the outside and the irregularity is smoothed out.

The "Mackie" line has a similar explanation to the "Eberhard" effect and is really a manifestation of the latter on a scale that is easily discernable in the projected picture as a sort of halo surrounding the images of dark objects against light toned backgrounds.

To Be Avoided

It is particularly desirable to avoid these defects in the duplicating process because, like graininess, they are cumulative, and they are largely responsible for the "duped" appearance of prints made from duplicate motion picture negatives prepared on a high contrast emulsion.

Attempts have been made to find a developer or developing conditions that would permit development to a low degree of contrast without producing the defects but with no success. Apparently, the only way to eliminate the fault is to use an emulsion which when nearly fully developed will give the contrast or gamma required.

Inasmuch as motion picture negative and positive films do not completely satisfy the rigorous demands made on a duplicating material, efforts were made to produce something more suitable. It was found that the charac-

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teristics of an emulsion are greatly changed if a dye that absorbs the wave lengths of light to which the emulsion is sensitive is mixed with the gelatin. In the case of an ordinary emulsion certain yellow dyes have this property. The addition of the dye has the effect of increasing the resolving power by reducing irradiation or scatter, greatly extending the latitude, and lowering the maximum contrast of the emulsion. By so "doctoring" a very fine grained emulsion, a film was produced which possessed in a marked degree every desired property with the possible exception of speed. The speed, unfortunately, is rather low, being only about one-twentieth that of regular positive film. However, by using a suitable condenser system, sufficient illumination to print from dense negatives at the usual step printer rate can easily be obtained. It is practicable also to do projection printing with condenser illumination.

The dye used is a water soluble yellow that washes out during the processing operations and leaves a normal appearing black and white film. The emulsion keeps extremely well and can be handled in the usual positive safelight.

The use of this film, known as "Eastman Duplicating Film," for both master positive and duplicate negative, insures excellent tone reproduction, freedom from development defects, and a minimum of graininess.

Timing

The first step in the actual process of making the duplicate is the timing of the original negative for printing. The exposure for each scene should be such as to clearly record the details in the highlights. The exposure should not be much greater, however, than that necessary to secure the lightest detail; otherwise, the graininess of the final print will be accentuated. After the original has been timed, it should be carefully cleaned to remove all traces of dirt from any scratches that may be present on the gelatin or support. Chamois skin moistened with carbon tetrachloride may be used for the purpose.

(Continued Next Month)

(Continued from Page 11)

LAWS OF REFLECTION

THE law ruling the regular reflection of light is as follows:

"The angle that the incident ray makes with the normal to the reflecting surface at the point of incidence, is equal to the angle that the reflected ray makes with the same normal; and the incident and the reflected rays are coplanar."

For short, let us say that *the angle of reflection is equal to the angle of incidence and both rays are lying on the same plane.*

This being true, we can easily trace geometrically the path of an incident and its corresponding reflected rays.

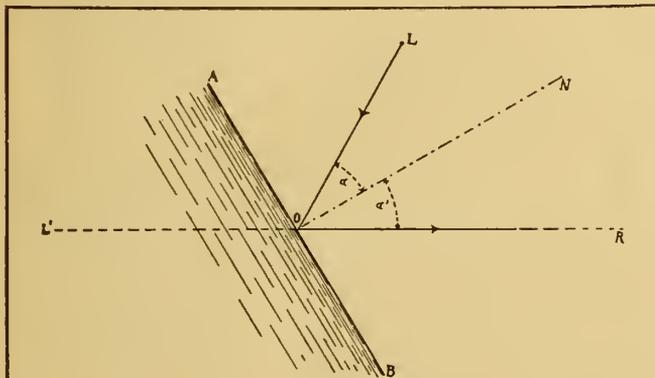


FIGURE 2

- A B Equals Reflecting Surface.
- L Equals Luminous Point.
- L O Equals Incident Ray.
- O N Equals Normal to A B at Point O.
- O R Equals Reflected Ray
- L' Equals Virtual Image of Point L.
- a Equals Angle of Incidence.
- a' Equals Angle of Reflection.
- a Equals a'.

Let A B (Fig. 2) be the section of the reflecting surface of an opaque body, a mirror for instance, and let the plane of the paper be the plane in which lies the incident ray L O, emanated by the luminous point L, and let O be the point at which the incident ray falls upon the surface.

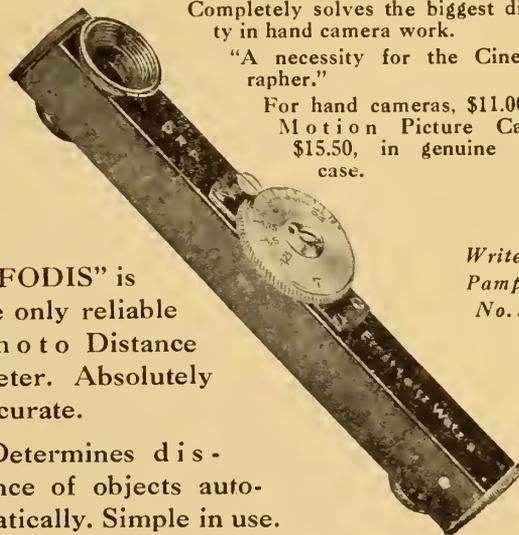
Let O N be the normal to A B at the point O, that is to say, the line perpendicular to A B at O.

The reflected ray will follow a path O R, forming with O N, an angle N O R, equal to the angle L O N.

For the sake of simplicity, let us call the angle L O N by the letter *a* (alpha) and let the angle N O R be called *a'*. simply, *a* equals *a'*.

We will then have: *angle of incidence equals angle of reflection*; or L O N equals N O R, or simply, *a* equals *a'*.

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The reflected ray will also be found to lie on the same plane as the incident ray, in the figure, this plane being, as we said, the plane of the paper.

If $A B$ is the surface of a mirror, and we place our eye at the point R , we will see an image of the point L , situated at L' , behind the mirror, on the prolongation of the ray $O R$, and at a distance from O , equal to the distance $L O$.

HUYGHENS CONSTRUCTION OF REFLECTED RAYS ACCORDING TO HIS "UNDULATORY THEORY"

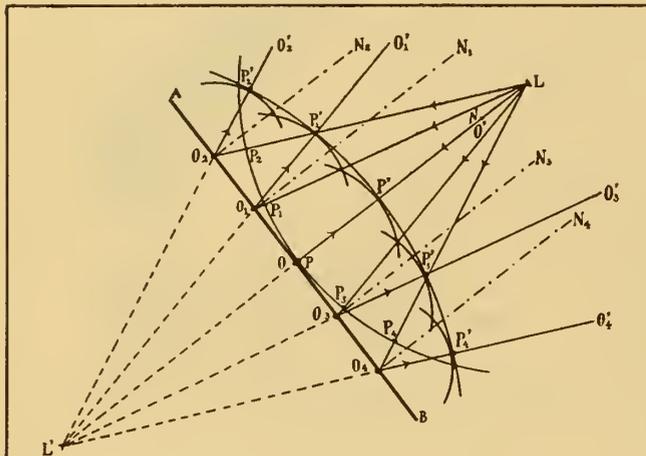


FIGURE 3

- $A B$ Equals Reflecting Surface.
- L Equals Luminous Body.
- L' Equals Image of Luminous Body.
- $L O; L O^1; L O^2; L O^3; L O^4$ Equals Incident Rays.
- $P^2 P^1$ Equals Incident Wave Front.
- $O O'; O^1 O^1'; O^2 O^2'; O^3 O^3'; O^4 O^4'$ Equal Reflected Rays.
- $P'^2 P'^4$ Equals Reflected Wave Front.
- $O N; O N^1; O N^2; O N^3; O N^4$ Equals Normals to Reflecting Surface.

LET $A B$ be the reflecting surface and L the luminous body, emanating rays in all directions, among which we select the rays $L O; L O^1; L O^2; L O^3; L O^4$, falling on the reflecting surface.

As all these rays travel with the same velocity, at the time the ray $L O$ will have reached the point P of the reflecting surface, the ray $L O^2$ will have reached the point P^2 and the rays $L O^1; L O^3; L O^4$ will have reached the respective points $P^1; P^3; P^4$, forming a wave front $P^2 P^4$.

At the same instant the ray $L O$ strikes the reflecting surface, the point P becomes the center of a disturbance, creating a wave which bounces away from the surface. The incident ray is thus reflected back upon its own path,

in the direction $O L$, while the ray $L P^2$, for instance, will have to continue to O^2 , from whence it is reflected in the direction $O^2 O'^2$, forming with the normal $N^2 O^2$ an angle equal to the angle of incidence $L O^2 N^2$.

At the same instant in which the reflected ray $O L$ reaches the point P' , the reflected ray $O^2 O'^2$ will reach the point P'^2 , because light travels with the same velocity, and the distances $L O$ plus $O P'$ and $L O^2$ plus $O P'^2$ are equal.

Following the same construction for all the other rays we find the reflected light to form a wave front $P'^1 P'^4$, whose center of curvature is at L' , behind the reflecting surface, at the intersection of the prolongation of the reflected rays and at a distance $L' P$ from the reflecting surface, equal to the distance $L P$, which is the distance of the luminous point to the reflecting surface.

IT is obvious that a luminous object, such as any incandescent portion of matter emits its own luminous rays. A non-luminous body is rendered visible by the rays it reflects. Each and every point of a non-luminous body becomes the center of disturbance in the luminous ether at the particular point, and the reflected ray behaves as if it was originated at that very point of the body.

In other words, the non-luminous body acts as a luminous one as long as it is stricken by incident light, and the intensity of its acquired luminous power is controlled by the intensity of the incident light from the luminous body, and by its own composition.

Now, let us suppose that we place a well defined object in front of, and at a certain distance from a plane mirror M , as illustrated in

(Continued on Page 25)

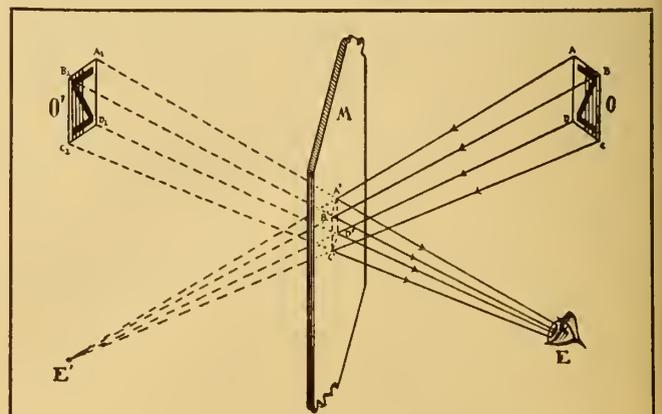


FIGURE 4

- O Equals Object.
- M Equals Reflecting Surface.
- O' Equals Virtual Image of Object O .

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(Continued from Page 24)

Let the object be a card O, whose surface is perfectly defined by the lines AB; BC; CD and DA.

The path of the rays emitted by the points A; B; C and D strike the surface M, at the points A'; B'; C' and D' and their reflection A'E; B'E; C'E and D'E is easily found, according to the laws of reflection.

The image of the object O will then appear on the prolongation of the reflected rays at O' to an eye placed at the point E, and at a distance from M equal to the distance of the object O from the reflecting surface.

In other words, the image of O will appear at O' at the same distance as if the object was viewed from a point E', its view unincumbered by the mirror.

The image O' will then appear of the *same size* as O, it will be *erect*, but *reversed* as to sides.

It is evident that the construction of the incident and reflected rays can be traced from each and every point of the surface of the object and the complete image of O will then be found to be formed at O'.

Such an image has no real existence, and can not therefore be collected on a screen. It only appears to the eye, as being formed at O', and is called "*virtual*".

INTENSITY OF REFLECTION LIGHT

IT is obvious that, as the incident light is partially absorbed and partially scattered, the intensity of the reflected light is *less* than the intensity of the incident light.

The intensity of reflected light is also dependent upon the smoothness and degree of polish of the reflecting surface, upon the obliquity of the incident ray, and upon the nature of the reflective surface.

Surfaces of different nature affect the intensity of the reflected light, even if their degrees of smoothness and polish and the obliquity of the rays are the same.

It is of common occurrence to observe that the highly reflecting silvered surface of a mirror reflects more light than an equally smooth surface of a sheet of white paper.

Less commonly observed, but easily veri-

fied, is the influence exerted by the obliquity of the incident ray.

If we stand on the shore of a large body of water, such as a tranquil lake, we can readily observe that at high noon, when the sun is approximately at the zenith of the lake surface, we can look at the water without being disturbed by any glaring reflection. As the sun nears the horizon, we will notice that a sufficient amount of sunlight is reflected by the water, so as to bother the sensitiveness of our eye. This will happen when the incident and reflected rays form equal angles with the normal to the water surface. The more the sun continues to approach the horizon, the greater is the obliquity of the incident ray and the greater becomes the intensity of the reflected ray, to such an extent that if the eye is placed at the proper angle, the glare effects it almost to the same extent as if the sun was looked at directly.

The smoothness of the reflecting surface is obviously an important factor when a maximum of reflected light is desired. The roughness of a surface is formed by a conglomeration of small surfaces facing the incident light under different angles. In viewing such a surface, our eye will only be struck by the reflected rays striking the surfaces whose position is such that they answer the laws of reflection. Only a portion of the surface will thus respond to these requirements, and the intensity of the reflected light is then diminished in proportion to the degree of roughness of the surface.

The infinite number of conditions in which light can be reflected render impractical an average calculation of the intensity of reflected light. As a reference, taking the incident ray perpendicular to the reflecting surface, it has been found that:

Mercury reflects $3/4$ of the incident light;

Silver reflects $3/5$ of the incident light when its surface is smooth and highly polished;

Glass reflects $1/25$ of the incident light;

Water reflects $1/50$ of the incident light.

LET us note here, that in the study of light, when mention is made of a mirror, a distinction must be made between the well known object of everyday use and an optical mirror.

In optics the reflecting surface alone is called a mirror, while in a glass mirror the glass is merely the support and the protection to the silver coating which is the real optical mirror.

In fact, in a glass mirror the front surface of glass and the silver coating are two distinct reflecting surfaces and this is proven by the following experiment.

Place a lighted match in front of a glass mirror and look at it obliquely. Two very distinct images of the match are seen; one reflected from the silver coating, and the other from the front surface of the glass. Furthermore each one of these images become a luminous object in respect to either one of the two reflecting surfaces, and other images of the match are seen which would multiply to an infinite number were it not for the absorption and scattering of light that takes place at each reflection. These images are seen to gradually diminish in intensity, until the eye is not any more affected by their luminosity.

ONE of the uses made of reflected light by the photographer is to reflect the light of a luminous body in order to more strongly illuminate the object he desires to photograph.

Of this order are the various kind of reflectors used by the cinematographer in outdoor work, and the white surfaces of the interior of the art lamps and backing the mercury tubes in studio photography.

Reflection of light is applied in the Graflex type of cameras, in which the image formed by the photographic objective is reflected by a 45° inclined mirror, to a focusing ground glass.

An interesting application of reflected light is the prismatic reflection and side reversal of the image formed on the focusing ground glass and the prismatic reflection and side reversal of the rays emanated by the subject, before entering the photographic objective. This reversal of the image is extensively used in the photography of object destined to be reproduced in printing, in the half-tone color process.

(TO BE CONTINUED NEXT MONTH)



JOHN C. FLINN
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W. S. HOLMAN
SECRETARY

Metropolitan Pictures Corporation
OF CALIFORNIA
Metropolitan Studios
1040 LAS PALMAS AVENUE
Hollywood
(HO 1431)

Mr. H. F. Boeger,
Mitchell Camera Corporation,
Hollywood, Calif.

December
18th
1925

Dear Sir:

Ten years ago when I was directing Triangle pictures, we thought the motion picture camera in use at that time were as perfected as they would ever be. We knew, however, that the motion picture was only beginning.

I think the greatest tribute that could be paid the Mitchell camera lies in the fact that it has kept pace with the remarkable advancement of the industry. There are too many "Triangle days" cameras still on the market today.

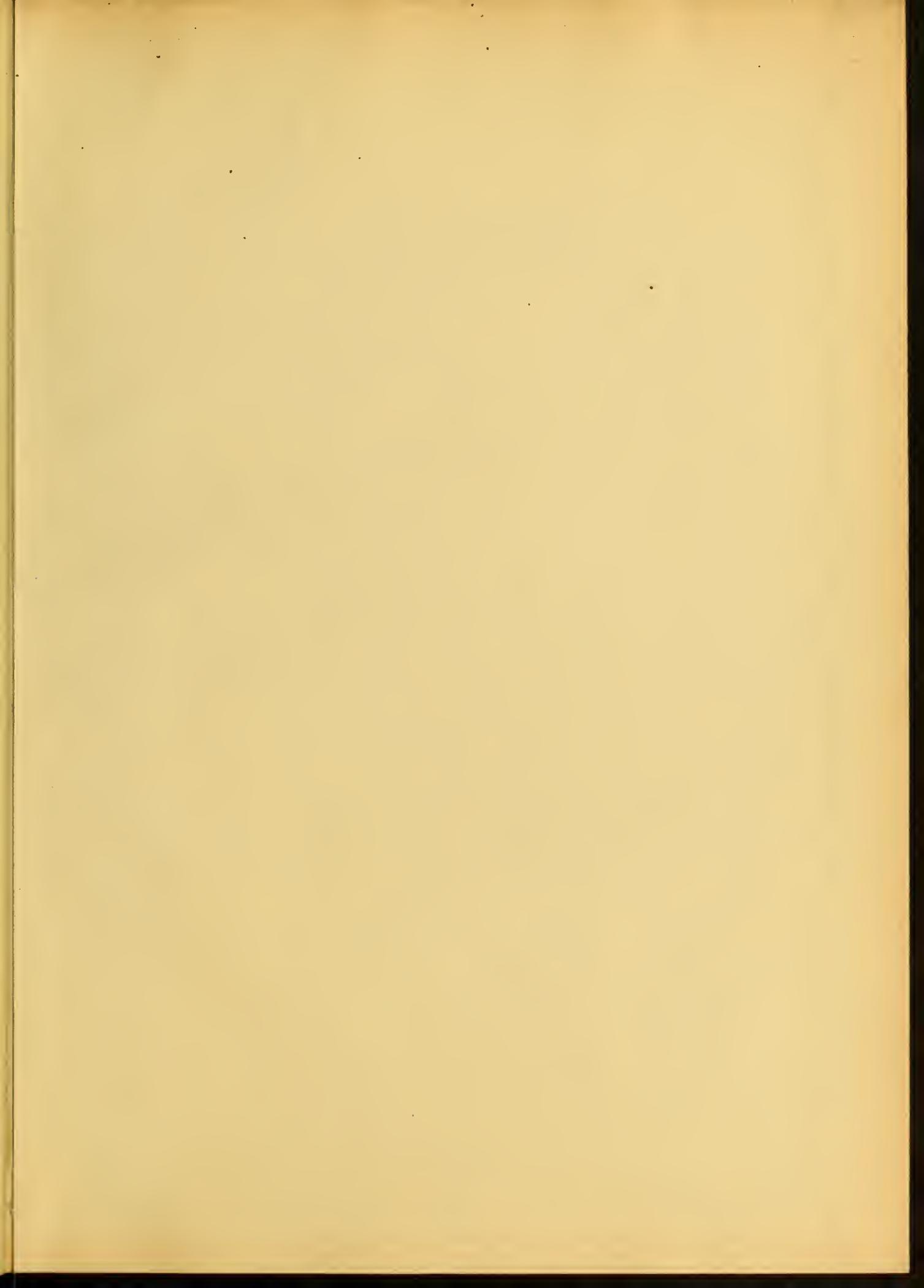
When Georges Benoit was assigned to the cinematography of "The Danger Girl", Priscilla Dean's first Metropolitan Picture, which I have just finished directing, I knew that photographic superiority was assured. Although I had never worked with Mr. Benoit before, I saw that he used a Mitchell camera.

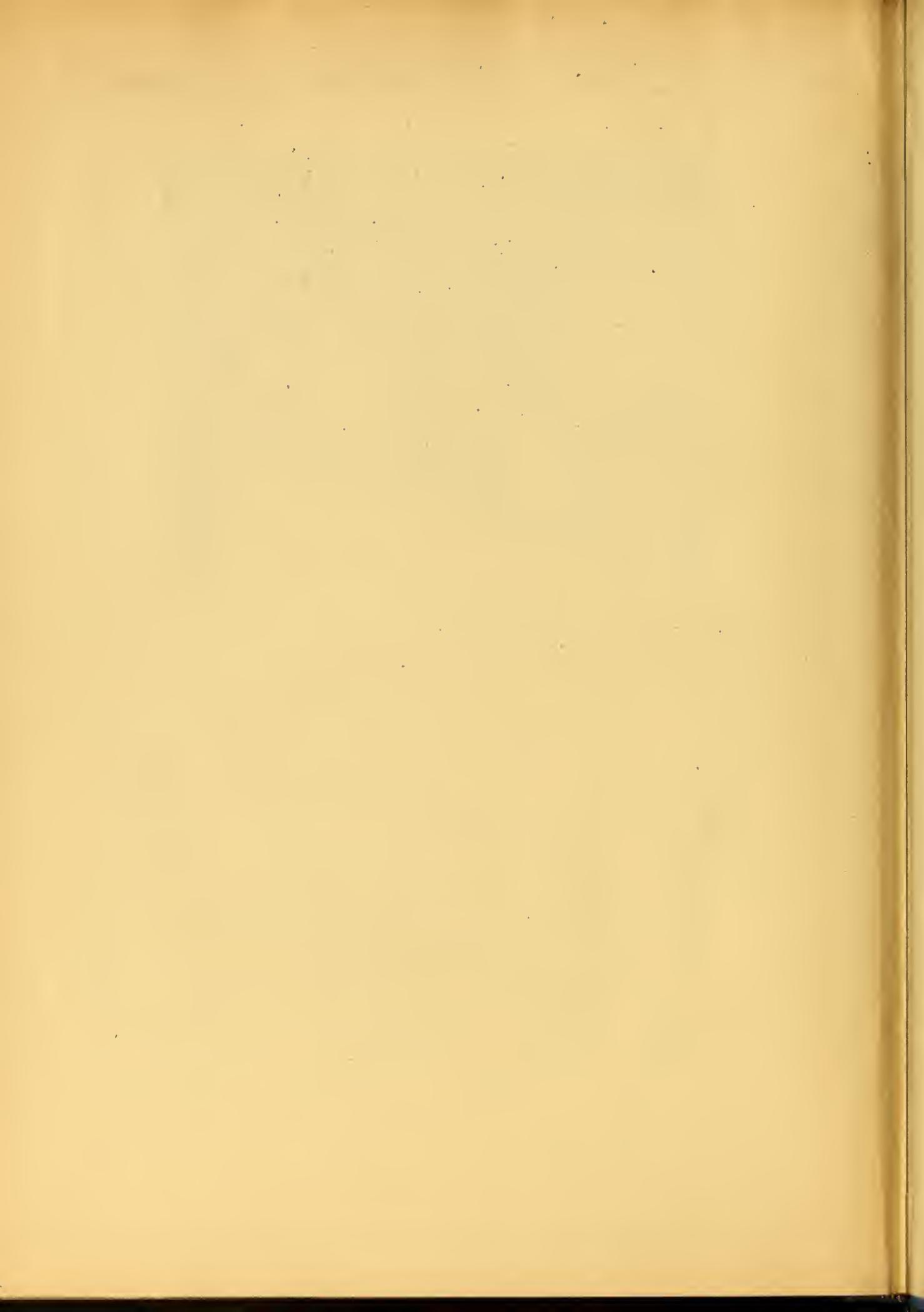
With best wishes, I am

Very truly yours,

Edward G. Dillon

ED/G





The Museum of Modern Art



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