

The PROFESSIONAL PHOTOGRAPHER

Formerly Abel's Photographic Weekly

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Official Journal The Photographers' Association of America

Vol. 56 No. 1401

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September 5, 19





*But Mother Isn't the Only One
Who Appreciates Fine Quality . . .*

Youngsters are trooping to school now . . . little youngsters, and big ones . . . they pass your studio every day . . . and they stop to look at your displays.

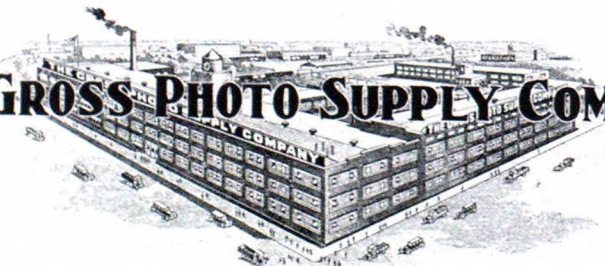
Just kids? . . . Of course, but they can be keenly discriminating. And they are apt to direct their parents to your studio . . . that is, if they decide that they like your pictures.

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It may be developed by inspection under safelight.

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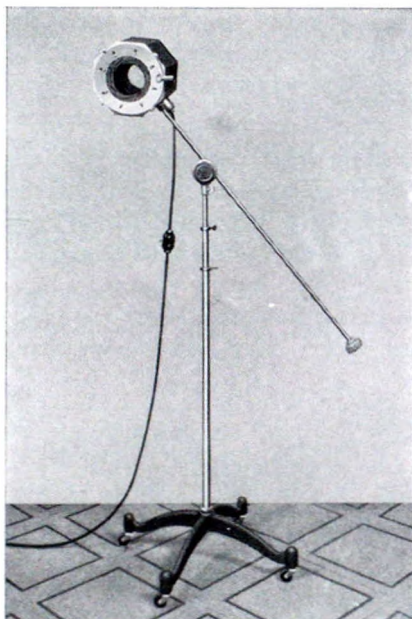
It is equipped with a highly polished reflector instead of a condensing lens. The light may be controlled in a graduated volume easily and quickly with the iris diaphragm which may be adjusted to any size opening from $4\frac{1}{2}$ " to $\frac{3}{4}$ ".

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Washington—Campbell Photo Service,
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Chicago—Kaufmann & Fabry Co.,
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Chicago—Stadler Photographing Co.,
1322 S. Wabash Ave.
Springfield—N. E. Nilsson, Capitol Engraving Co., Commercial Photo. Dept. Box 374.

INDIANA

Indianapolis—W. H. Bass Photo Company,
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KENTUCKY

Louisville—Caulfield & Shook, Inc.,
Bernheim Bldg., 638-40 S. 4th St.

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New Orleans—Chas. L. Franck,
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Worcester—E. B. Luce, 405 Main St.

MICHIGAN

Grand Rapids—The West-Dempster Co.
209-19 Front Ave., N. W.

NEW JERSEY

Jersey City—Erna Commercial Photo Co.,
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NEW YORK

Buffalo—Hauser Bob, 11 W. Tupper St.
New York City—Apeda Studio, Inc.,
212 W. 48th St.
Poughkeepsie—Frank B. Howard,
234 Main St.
Utica—Russell T. Rhoades & Co.,
102 Liberty St.

OHIO

Cincinnati—Rombach & Groene,
812-814 W. 4th St.
Cleveland—Euclid Commercial Studio,
6810 Euclid Ave.
Dayton—Dayton Process Engravers, Inc.,
5th St., at Perry.

PENNSYLVANIA

Erie—Kelly Studios, 1026 Peach St.
Philadelphia—Berry & Homer, 604 Arch St.
Pittsburgh—Trinity Court Studios,
313 6th Ave.

SOUTH CAROLINA

Columbia—Sargeant Photo Co., 1528 Main St.

WISCONSIN

Milwaukee—Pohlman & Rogahn Co.,
1925 N. 3rd St.

THE publication of a ten-year-old picture is not complimentary to any man. Whose fault is it that a photograph of recent date is not available? His own, of course, but also the fault of the photographer whose patron he should be.

THIS PICTURE IS TEN YEARS OLD

WHOSE
FAULT?



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Charles Abel, A.R.P.S., Editor

Excellent Attendance at 1935 Winona School

● Although it was necessary to cancel this year's commercial course at the Winona School, the Association is happy to announce that the portrait course was highly successful, a total of 72 students being registered. There is no question but that the Association, releasing each year some seventy or more individuals who have, as the result of a solid month of intensive training, not only learned to make creditable portraits but have also absorbed the Association's standards of ethical business methods, is doing a real job in improving the morale of the entire profession. If these students became in the end no more than first-class employees, the Association would be rendering a genuine service, but the records will show that as the years go by most of the students become studio owners. The steady infiltration into the photographic profession of more than a thousand such students over the past thirteen years has done much to counteract those elements which have crept into the business and tended to hurt professional photography. Still more to the point is the fact that these students quite evidently do

not stop growing after they leave the immediate influence of Will H. Towles, Dean of the School. Somehow he seems able to infuse them with his own ideals of always better and better craftsmanship, to the point where today, when the winners are announced in professional salons or convention exhibits, there are almost invariably Winona School graduates among them. If all these students came from the immediate vicinity of Winona, the benefits to the profession would not be nearly so great. To show how far the influence of the School is extended as the students return to their homes, we believe our readers will be interested in the following list of 1935 students, and especially their home towns:

Marguerite Alby, South Bend, Ind.
George Askar, Port Huron, Mich.
R. I. Boone, Dept. of Public Safety,
Charleston, W. Va.
E. Brauneis, Chicago, Ill.
Beatrice Bouldin, Sioux City, Iowa.
E. W. Blew, Whittier, Calif.
Edna Butler, Sterling, Ill.
Doris L. Byfield, Oklahoma City, Okla.
Claude Bate, Phoenix, Ariz.
Joseph M. Boel, Provo, Utah
Crawford Boyd, Fayetteville, N. C.
Carlton D. Brown, Waterville, Maine

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R. Buehman,

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The Cover Picture

● Many readers will remember an article we published not so long ago about the work of Jack Clifford, portrait photographer of Lakewood, Ohio, who has accumulated a quite remarkable collection of character portraits of celebrities. Presidents, explorers, musicians, actors and others equally famous grace the walls of his studio. Now we show on our front cover a portrait by him of General "Billy" Mitchell, which, by the way, is copyrighted.

William Carlson, Morris, Ill.
Duane Coe, St. Louis, Mo.
Carl Cubberly, East Cleveland, Ohio
Frank J. Chenicek, Cadillac, Mich.
William B. Coursen, Jr., Daytona Beach, Fla.

Lucile Divine, Iron Mountain, Mich.
George H. Davis, Unionville, Mo.
Mrs. Mary Daggy, Hamilton, Ohio
Clyde L. Dennis, Skaneateles, N. Y.
A. L. Ellis, Weston, W. Va.
Billie Eberhart, Milledgeville, Ga.
Lawrence Ewing, Hart, Mich.
Amorette Graham, Peoria, Ill.
Betty Goddard, Springfield, Ohio
William B. G. Gillis, Regina, Sask., Canada

John Gill, 7th, Haddonfield, N. J.
A. E. Guionnaud, Palm Beach, Fla.
F. H. Hesch, Harrison Radiator Corp., Lockport, N. Y.

Robert M. Howells, Corvallis, Ore.
R. R. Hutchison, Pullman, Wash.
Marcia Huff, Danville, Ill.
R. H. Hostetler, Des Moines, Iowa.
Lester C. Johnson, Oak Park, Ill.
Jess Johnson, Cadillac, Mich.
Max Jurras, Montpelier, Vt.
Kenneth K. Kuroko, Sacramento, Calif.
Mary Kossuth, Wheeling, W. Va.
Perrin Kennedy, Union, S. C.
Mrs. Roscoe F. Lewis, Jackson, Mich.
Roscoe F. Lewis, Jackson, Mich.
Darwin McDaniel, Jacksonville, Fla.
Garland McCutchen, Gainesville, Fla.
A. W. McLaughlin, Evanston, Ill.
James Randolph MacDonald, Toronto, Ont., Canada

Wendell Moore, Washington, D. C.
Jean G. Merrill, Norwich, Ont., Canada
Jackie Martin, Washington Herald, Washington, D. C.

J. T. Olson, Muskegon, Mich.
W. Foster Orpin, Richmond, Va.
M. W. Payne, Duncan, Okla.
Albert Proffett, Lansing, Mich.
Helen Rhodes, Lynchburg, Va.
James E. Redgren, Menomonie, Wis.
(Holder of scholarship as best student in 1934 course)

Harry Rickers, Worthington, Minn.
Harry S. Stoner, Ephrata, Pa.
Mrs. Louise Thourez Smith, Sarasota, Fla.

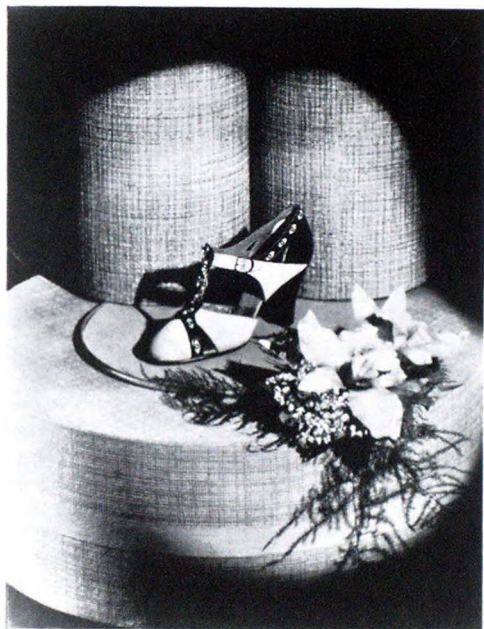
Andrew Stofan, Oberlin, Ohio
Mrs. Olin W. Scott, Richmond, Ind.
Paul H. Seymour, Mears, Mich.
Mrs. Robert Sharyer, Everett, Wash.
Allen C. Shane, Beaver, Pa.
Marvel Thompson, Paxton, Ill.
A. B. Timmerman, Gary, Ind.
Max Tawney, Gallipolis, Ohio
Gerald Toms, South Bend Tribune, South Bend, Ind.

Reinhold O. Werner, South St. Paul, Minn.

Beatrice W. Weekley, Clarksburg, W. Va.

I. Van Imschoot, New Britain, Conn.
Daniel H. Van Pelt, Hamburg, N. Y.
Mrs. Caroline A. Zubrod, Fond du Lac, Wis.

Looking over this list we recognize the names of studio owners, some of them in business for years, who have realized the value of "brushing-up" for a month, to prevent themselves from growing "stale." Again we see the names of sons and daughters of well known photographers, some of them nationally recognized artists who are yet humble enough in their estimate of their own ability to appreciate that a course at Winona will supplement their own teachings and turn out their youngsters with a thoroughly rounded understanding of what professional photography is and should be. Others are employees, whose expenses and tuition have been paid wholly or in part by their employers, unselfishly. And still others, whose names we remember from the letters accompanying their original applications, have scrimped and saved for years to put aside the money to take this course. While the Winona School finances itself from its tuition fees and is in no sense a drain on the Photographers' Association of America, yet it was and is the Association which makes the School possible and every



Readers who wondered at the odd effect in the illustration in one of the recent Hammer Dry Plate advertisements evidently did not realize that it was a reproduction of a negative. Here's a print from that negative to show what it was all about.

member of the Association can feel that here is one activity—if the Association were to continue nothing else—for which he is at least partly responsible and to which he can point with pride.

Pennsylvania Announces State Convention

By Gene Kemp, Chairman Convention Committee, P. P. A. of Pa.

● The first annual convention of the Professional Photographers' Association of Pennsylvania will be held at Harrisburg on October 7 and 8, 1935. It is to be a strictly business and educational session, and one which will be of financial benefit to every photographer who attends. There will be a print exhibit, wherein all prints accepted for hanging will be returned with a seal attached so exhibitors may use them for display in their studios.

Excellent talent has been engaged, including talks on practical methods of producing business and demonstrations by men who have made a financial success of their studios. They will demonstrate their new styles and the type of portrait-

ure which is bringing about their success. There will be a demonstration of the new Johnson Overhead Ventlite indirect lighting system. In the selection of talent, particular attention has been given to the younger element, those who have new and valuable ideas to offer.

We did not succeed in getting our State license law through at this session of the Legislature, however we have not finished the fight by any means and we propose at this convention to pave the way for a successful bill to be presented at the next session. We have built up the largest membership of any State organization and we want to hold it and make it still stronger. We propose at this convention to work out some effective city ordinance, accompanied with a plan for presenting it before every city and borough council in the State for adoption.

We want every photographer in the State present at this meeting, which will prove to be the most profitable two days in the history of Pennsylvania photographers. Prepare now to attend. Watch THE PROFESSIONAL for the complete program in the next issue. Headquarters will be the Penn-Harris Hotel. For other information write to Gene Kemp, 518 N. 2nd St., Harrisburg, Pa.

Minnesota Convention Plans Nearly Complete

● President D. Peterson, of the Minnesota Photographers' Association, asks that we extend a cordial invitation to all photographers to attend their coming convention at the Hotel Lowry, St. Paul, on September 23, 24 and 25 and, while the program is not yet complete, gives us the following high-lights on it. Harry B. Wills, of the Eastman Kodak Company, will present his new feature "Picture Building," and will also speak on his experiences in Europe. John Lavecchia, of Chicago, Ill., president of Chicago Associated Photographers, is going to give a demonstration of portraiture. V. J. Hajny, of the Decorative Background Co., Chicago-Cicero, Ill., will give demonstrations with the airbrush, conduct a retouching clinic and will demonstrate his famous line of backgrounds. Harry Rickers, Worthington, Minn., past president of the Iowa Photo-



Portrait by Maurice Carnes LaClaire, Grand Rapids, Mich.

graphers' Association, will relate his experiences at Winona School and give his impressions of what the School is accomplishing. Four well-known Minnesota photographers will demonstrate their individual methods of making home portraits, with lighting equipment of their own design. An important "Darkroom Talk" will be presented by a representative of the Agfa Ansco Corporation, Binghamton, N. Y. The new Kodacolor film will be shown. There will be an "Idea Exchange Hour" with prizes for the three best ideas presented. Also Mr. Peterson expects a color demonstration of unusual interest, a reception room talk, and a "pep" talk which will make everyone sit up and take notice.

The main business session will be held on the afternoon of the second day and the annual banquet that evening. Special entertainment features are planned for the banquet, a nationally known figure will be the speaker, and later there will be dancing to a fine orchestra. The wives are specially invited and unusual entertainment is promised them. The hotel management has made a special guaranteed rate to all photographers of \$2.50 single and \$3.50 double, with bath or shower in every room. The second day of the convention will be "Dakota Day,"

when a large attendance is expected from both of the Dakotas.

Photographers everywhere are invited to exhibit, in both portrait and commercial classifications. Send three prints, properly mounted but not framed. No name or identification mark on front of picture, but complete name and address on back of each. A "Certificate of Merit" will be issued by the judges for each group passing with the required rating. A special feature this year will be a Miniature exhibit. In this class not more than three miniatures may be submitted by any photographer, and gold, silver and bronze medals will be awarded. Mail all prints and miniatures to Herman Larson, Vice-Pres., Minnesota Photographers' Association, Hotel Lowry, St. Paul, Minn., to reach St. Paul not later than September 21. In addition to the regular exhibit there will be a Loan Collection from the Photographer's Association of America as well as the Brewer Art Exhibit, something out of the ordinary, and a complimentary exhibit of direct color photography by Charles W. Howson, Minneapolis. The registration fee is only \$3.00 which includes one year's membership in the Association.

Kansas Photographers Plan Big Meeting

● The 15th annual meeting of the Southwest Kansas Photographers' Club will take place at the Broadview Hotel, Wichita, on October 13, 14 and 15. Practically it will be a state convention, as all photographers of Kansas and Northern Oklahoma have been invited to attend. On the first day, Sunday afternoon and evening, the time will be devoted to a general social and get-together meeting. The remaining days will be devoted to demonstrations, talks and business meetings. There will be a picture exhibit. An attempt will be made to organize a state association.

Illinois State Convention to be Held in October

● The first annual convention of the Illinois Photographers' Association will be held at the Hotel Jefferson, Peoria, on October 6, 7 and 8, with the start-off being a get-together meeting at 8:00 P. M. on Sunday the 6th. Two solid days of demonstrations and

lectures, including among the high spots Harry Elton of the Eastman Kodak Company and John Lavecchia of Chicago. During the business sessions, the Illinois sales tax and its effect on the photographic business, as well as other vital questions will be discussed by the Association's attorneys. In the print exhibit, open to every photographer, the seal of the Association will be affixed to all prints hung. Rules are that each photographer may submit three prints in each of the following classifications: portraiture, commercial or photo finishing enlargements, and each exhibit must consist of not less than three prints. No picture or

mount larger than 16x20, no cover on mount over the picture, no framed pictures, no glass over pictures, no oil-colored work. The studio name may be on the front of the mount or print. All entries must be delivered to the Rex Studio, 329 S. Adams St., Peoria, Ill., marked "Photographers' Display," not later than October 5, and all exhibits will be returned by express collect. Registration fee for the convention will be \$1.00 for members, whose families will be admitted without charge. Non-members will have to pay \$1.00 registration fee and \$1.00 membership dues. Dues for associate members are 50c.

Twenty Years of Home Portraiture—and What They Have Taught Me

Number Eleven in a Series of Articles by Fred R. Bill

● The Editor has called my attention to the fact that no mention has been made in this series regarding the kind and amount of equipment necessary to do a really good job of home portraiture. In this article I will offer some explanations of the various kinds of apparatus available and a few suggestions on the selection of the essential pieces of such apparatus.

Before investing in any part of an outfit it will be well to study the various methods of working away from a studio. Actually there are two very different methods or "schools" of home portraiture: the contact printing method and the projection printing method. These are widely separated in the kinds of apparatus used and both have zealous adherents who argue the advantages of their chosen system. A word or two about these schools.

As the name indicates the first school follows the long-established and time-tried method of making the negatives the same size as the finished print is to be, and printing that picture in contact with the negative. This is the method used in all professional studios prior to twelve or fifteen years ago and still the favorite of many of the finer craftsmen. For home portraiture it demands that large and heavy cameras be carried about, long-focus lenses be used, and of course large-sized sensitized materials whether films or plates. The quality of result obtainable under this system is the same as that obtained by the same workman in his

studio if he can adapt himself to the unusual conditions found in homes.

The supporters of this method say it produces the highest type and quality of portrait with all the excellence of modeling and reproduction of detail that is possible and that it takes a real craftsman to work successfully. The large cameras are impressive to the customer—they look professional—and cannot be confused with the small favorites of the amateur; the customer's mental reaction to the use of the sizable camera is that the photographer who knows how to use such a big and complicated affair as that must know how to produce pictures of a high quality.

In addition to the disadvantage due to size and weight, answer the opponents, you have the increased cost of the apparatus itself and the much larger material cost for the sensitized material used. Also the larger negatives demand longer exposures, a serious handicap when working under conditions found in homes. As to the quality of portrait that can be produced, they say, there is grave doubt whether that or this system is better: there may be a difference in the kind of quality but who shall say which is better; prints properly made from fine small negatives have excellent modeling and sharpness of detail comparable to contact prints.

The projection method, as you will have assumed from the last paragraph, is really a development of the last fifteen years and has been brought to its present wide popularity

For Your Bookshelves

● **How to Make Enlargements**, by Frank Fraprie & Arthur Hammond. $5\frac{1}{4} \times 7\frac{3}{4}$, 106 pages, 16 illustrations. Paper, 50c postpaid. Order from American Photographic Publishing Co., 428 Newbury St., Boston 17, Mass.

This revised and enlarged edition of this popular handbook brings the total printing up to 40,000, a considerable figure in this country for any book on photography and sufficient in itself to indicate its value. It is a complete textbook on the making of enlargements and even the professional may find much herein that he may be neglecting or have forgotten. Those who deal in amateur supplies should find it a ready seller.

Profitable Photography with the Miniature Camera, by Edwin C. Buxbaum, A. R. P. S. $5\frac{1}{4} \times 7\frac{3}{4}$, 72 pages, 16 illustrations. Paper, \$1.00 postpaid. Order from Box Tree Press, 1811 E. Wood Place, Milwaukee, Wis.

Following a brief discussion of equipment and technique, this book offers fifty suggestions for fields in which the miniature camera can be used with profit, other than journalism which has a chapter of its own. Mr. Buxbaum writes in a chatty and informal style so that the book makes interesting reading, aside from offering a number of good money-making suggestions.

by the efforts of the manufacturers to give the photographer more latitude in the production of his pictures. By making large prints of almost unlimited size from comparatively small negatives the photographer may offer to his customer a wide range of pictures from the same negative at little added expense. Unfortunately it has been the means whereby much sloppy technique has been sold to the public by mass production. However in the hands of a good workman who can produce a negative full of sparkling detail and who knows how to make a print from that negative which will reproduce all that detail even in enlargements of four or five diameters, the projection method can show results comparable to the finest product of the older school. In addition it offers the opportunity to the skilled printer to manipulate his print in such a manner as to bring out the best in the negative and do

it more easily than when printing by contact. He may use only part of the negative and print a bust or three-quarter figure picture from a negative that shows a full figure.

When it comes to purchasing the necessary apparatus the photographer will find that the outlay is much less for a 5×7 camera and the necessary lens than for an 8×10 or 11×14 with the accompanying lenses. The plate- or film-holders cost less and are much easier to carry, and the manipulation in the workrooms is faster. For general home portrait work I suggest one of the better 5×7 view or home-portrait cameras with a lens that will produce a sharp clear negative wide open and a speed of $F/4.5$ or faster and focal length of 9 to 11 inches. With such an outfit it will be possible to make portraits free from distortion if you use a full 5×7 negative, and fine full-figure pictures with great depth if you use $3\frac{1}{2} \times 5$. I would choose a lens that makes a very sharp image, that has good depth of focus and is fast enough so it may be stopped if necessary without increasing the time seriously.

A strong, rigid tripod that will fold into a comparatively small compass but when open may be raised to a height of four and one-half to five feet is most essential; it should be light enough so it can be carried in one hand with the camera fastened to its top and should be so constructed that it is quickly assembled. There are several of these on the market, all about the same price but varying in details of design and construction.

In the matter of lights the variety is almost without limit and the range of prices is such that the photographer may spend as much or as little as he pleases. However it is not, in my opinion, economy to buy the cheaper pieces of equipment for the better class apparatus will last several lifetimes and give service long after the cheaper ones have been thrown out. The development of portable lighting equipment has come very fast in the last few years coincident with the appearance of the Photoflood bulb. The photographer now has a choice of equipment using Mazda bulbs, Photofloods, and carbon arcs, all of which produce a light suitable to photographic use. For the home portraitist, who has to carry his equipment, the lighter and more compact pieces of lighting equipment are more desirable and since he is

working in homes where the wiring is planned to carry rather low amperage he needs a type of light that will not "blow" fuses commonly used on the residence circuits. Because of this fact as well as the element of size I suggest to the man planning to purchase new equipment that he get one of the outfits specially designed to use Photo-flood bulbs; the light produced is almost as

white as that of the carbon arc—a desirable thing when using color sensitive emulsions—while the amount of light is much greater in relation to the amount of current consumed than the other types. When selecting the kind of reflector you want to use be sure to get one that is equipped with some sort of diffusing screen, regardless of the kind of illuminating source.

Eastman's Latest—Kodachrome

The following material on the Kodachrome process was prepared by Dr. C. E. Kenneth Mees, Vice-president of the Eastman Kodak Company in charge of research and development.

(With one illustration by courtesy of the Eastman Kodak Company)

● From the very beginning of photography, experimenters have tried to make photographs in color instead of in monochrome, and numberless processes have been put forward for that purpose. The ideal process would be one in which the color picture would be as easy to take and as certain in result as the monochrome picture is; but until now no color process has approached that ideal.

The new Kodachrome process, so far as the photographer is concerned, not merely approaches but realizes that ideal. It is as easy to take 16-mm. color pictures by the Kodachrome process as it is to take 16-mm. black and white pictures, and the percentage of good results obtained is as high.

All practical processes of color photography depend upon the division of the light into three components, red, green, and blue-violet. Pictures are taken by these three components and are then combined by some method in order to give the finished color picture.

Color processes are divided generally into two classes: the additive processes and the subtractive processes. In the first, the three components are combined by direct addition of colored images; in the second, the three components are combined by printing each negative in a color complementary to that which was used in taking, and these colored prints are then superimposed.

In the classic experiment in which Clerk Maxwell demonstrated the additive process of color photography at the Royal Institution, he showed three pictures of a colored ribbon taken by light of the three primary colors, and he projected positives

from his original negatives in superposition upon a screen, each of the positives being projected through a color filter of the same color as that used in taking the negative. With modern materials and filters, this method will give an excellent reproduction of a colored object. It requires very complicated apparatus, however, and is obviously a clumsy method of obtaining a color picture.

Another type of additive process is that which is termed the "screen-unit process." In this, a screen is used over the whole area of the film, which is composed of very small color units—red, green, and blue. A photograph is taken through the screen and is thus split up into tiny areas, each of them taken through one of the three preliminary filters. On projection, these areas cover the entire picture with little spots of colored light. If a red object be photographed, for instance, the film will be fully exposed behind the red units of the screen but will not be exposed behind the blue and green units, and after reversal, the green and blue units will be blocked out by the black deposit of silver, while the red units will be projected in full brilliancy and will thus produce a red area on the screen corresponding to the red object which was photographed. This process has the advantage that the film can be used in any camera, exposure can be controlled in the ordinary way with a diaphragm, and the film can be projected in any projector.

In the Kodacolor process, which has been very successful for amateur cinematography, the color separation is obtained optically. In the lens of the camera is placed a multiple-color filter composed of

red, green, and blue units; and the tiny lenses embossed on the film make multiple images of these three units on the film emulsion. In projection, the same three filters are placed on the lens and a color picture is obtained on the screen. A multi-color image in the form of microscopic colored strips is projected and reproduces the colors of the original.

Turning to the subtractive process, if the three negatives are printed as images in colored dye—the red negative as a blue-green image, the green negative as a magenta image, and the blue negative as a yellow image—and these three color images are assembled in register on top of each other, a color picture will result.

It will be seen that a red color can be obtained either by the projection of light through a red filter on the screen, as in the additive processes, or by the projection of the light through successive magenta and yellow images, the superposition of the yellow on the magenta producing red. In the same way, a green image can be obtained by putting a blue-green one on top of a yellow one, and a blue-violet image can be obtained by putting a blue-green image on top of a magenta one.

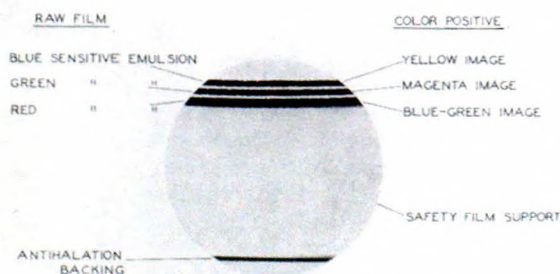
In working the subtractive processes, the three negatives may be taken just as for the additive process, and then positives are printed in some way which enables them to be made of a colored material, the commonest being to make them by printing in bichromated gelatine. By this process, the three negatives can be printed in colored dye, the picture taken through the red filter being printed on

gelatin dyed blue-green, the one taken through the green filter on gelatin dyed magenta, and the one taken through the blue filter on gelatin dyed yellow. If the three are superimposed in register, the resulting transparent color picture will reproduce the colors of the original subject.

Subtractive processes of this kind are being used successfully for the projection of theatrical motion pictures in color, but it is clear that to make one print only by this method, as is required in amateur cinematography, would be extremely expensive, whereas once the three negatives have been obtained and a method of printing them has been worked out, the preparation of a large number of prints is not unduly costly.

The new Kodachrome process is a subtractive process, but the separation of the light into the three components is not accomplished by placing the separate components in juxtaposition. They are separated in depth.

The film for this process is coated no less than five times! Nearest the base, an emulsion is coated which is strongly *red-sensitive*. This is then overcoated with a separating layer of gelatin containing some dye to act as a filter. Above this is coated a *green-sensitive* emulsion. This is overcoated again with another separating layer. Finally, there is applied a top coat which is *blue-sensitive* and which contains a certain amount of yellow dye. The five coatings are so thin that the total thickness of the film is little more than that of ordinary-line Kodak film.



CROSS-SECTION OF KODACHROME FILM

This cross-section of the new Kodachrome film is of course many times enlarged, but shows plainly the complete separation of the three color emulsions and the anti-halation background. Truly a miracle of film coating.

The emulsions are so adjusted that the sensitizers do not wander from the layer in which they are coated, so that the bottom layer remains red-sensitive with very little green sensitivity, the middle layer is green-sensitive and is free from red sensitivity, while the top layer is sensitive only to the blue. When a picture is taken upon such a film, the three components are automatically separated in the depth of the coating. The red component is formed in the red-sensitive emulsion nearest to the base, the green component is formed in the middle layer of emulsion, and the blue component forms the image of the top layer.

In order to obtain a color picture with this film, all that is necessary is to transform each component image of the negative into a positive image consisting of a suitably-colored dye. The image formed in the red-sensitive layer is transformed into a blue-green positive; the image formed in the middle green-sensitive layer, into a magenta positive; and the one in the top blue-sensitive layer, into a yellow positive. This is accomplished by an extremely complex processing system. The images in the three layers are first developed, as with ordinary black and white film, and then by a series of treatments the images in the three layers are transformed into positives formed in the dye. The whole of the silver salts are removed finally, and the image consists of three superimposed dye pictures.

The process is the invention of Leopold Mannes and Leo Godowsky, Jr. These gentlemen are musicians whose names were well known in the musical world when some years ago they commenced the study of color photography as a hobby. As a result of collaboration between them and the Kodak Research Laboratories for a number of years, it was evident that the work could only be brought to a successful conclusion by a full utilization of the research and manufacturing facilities available at Kodak Park. Here, there were available experts of many kinds: organic chemists, emulsion-makers, dye specialists, photographic chemists, and experts in photographic operations—and in 1931, therefore, Mr. Godowsky and Mr. Mannes joined the staff of the Research Laboratories. By the complete cooperation of

the staff of the Laboratories and of the Kodak Park Works, a task which at first appeared impossible was achieved and the Kodachrome process is the result.

The processing, as has been said, is extremely complicated and involves the treatment of the film upon three separate machines. Experience has shown, however, that it can be performed with certainty and that the commercial production of the color pictures presents little more difficulty than the production of black-and-white pictures, although the complex processing treatment and the expensive chemicals used in it naturally increase the cost considerably.

The pictures made by the new process are a revelation. Previously, color in photography has involved sacrifice. More light was needed for taking the photographs; it was difficult to get sufficient depth of focus; some definition was lost; it was only possible to project pictures on a small screen because of the loss of light in projection. In spite of these disadvantages, motion pictures in color have been very much appreciated, but their use has always been limited. The ordinary amateur motion picture has been in black and white, and only when taking conditions were favorable and when projecting conditions were not too exacting could color pictures be used.

When you see Kodachrome pictures on the screen you realize how wonderfully colored the world is. An artist, of course, knows this, but most of us are not artists and we don't realize the subtle colors that occur in everyday scenes—flowers and foliage, and summer landscapes, where bright colors strike the eye. But the new process has been brought to perfection during the winter, and it has taught me to look for the purple-brown of the winter woodland, and the blue of the ice and of the shadows in the snow; so that I have realized, as everyone will soon realize, that it is only in color that we can make any adequate representation of the world around us.

With the coming of the new process, amateur motion pictures will be in color. There is no need any longer for us to pretend that the world is in monochrome and to represent the glorious colored world in which we live by a gray ghost on a

screen.

* * *

We may perhaps anticipate a few questions with regard to the practical working of the process.

The exposure required is somewhat more than that of the ordinary panchromatic film used for making black-and-white pictures. We recommend that the next larger stop be used than that which would be used for black and white. Thus, whereas pictures in sunlight are ordinarily taken on panchromatic film at F/11, for Kodachrome film we recommend F/8.

For ordinary pictures, no filters or other attachments are required in the camera; but we are providing two camera filters for special purposes. One of these is used when it is required to photograph objects at a great distance, objects which in ordinary photography would be obscured by haze. The filter, in fact, plays the same part as the yellow filter used with panchromatic film; but it would, of course, be impossible to use a yellow filter, that would affect the colors. The filter used absorbs ultra-violet light only. If no such filter is used at great distances, objects will appear too blue, owing to the scattered ultra-violet light, which will record on the film as if it were blue light. Occasionally, this haze-cutting filter is useful for objects at a medium distance. For instance, when there is snow on the ground the air seems to be full of scattered blue light and the picture will be a little too blue unless the ultra-violet light is absorbed.

A filter is desirable if pictures are taken by artificial light, since otherwise the pictures will appear altogether too yellow or red. This filter is of a light blue color adjusted to compensate for the yellowness of the artificial light source.

At the present time, and probably through 1935, the processing will be done only at Kodak Park. We are, however, building the necessary machines and later on will be prepared to process the film at our stations throughout the world.

Up to the present we have not been able to arrange to make duplicates. It is not improbable that eventually we shall succeed in making duplicates; but this requires a good deal of special study, and we have not yet had time to work it out.

We are also not yet prepared to supply Kodachrome film in other sizes than 16 mm.—not because it is impossible to do this but because up to the present we have only been able to construct the necessary processing machinery and to work out the methods for the 16-mm. film.

The introduction of the new Kodachrome process seems to me likely to mark a great step in the history of photography. What developments may follow that initial introduction I shall not attempt to prophesy, but to me the possibilities of the new process appear very great.

'Tis Here, Maybe

● We have received a copy of the latest catalogue issued by Willoughby's, 110 W. 32nd St., New York City, 35 interesting pages of photographic accessories. If you want a copy, ask for Catalogue #735 and mention THE PROFESSIONAL.

The Kofski Studios, Richmond, Ind., specializing in commercial photography and photo finishing for some years, announce the reopening of their portrait studio, photographs to be taken by appointment only.

We are sorry to learn at this late date of the death of M. J. Tritz, photographer in the same location at Waterloo, Iowa, for the last 42 years, who passed away on March 4, 1935 after an illness of one year. Miss Della M. Tritz, his daughter, who has been with the studio for some time, is continuing the business.

We were extremely sorry to learn from Mamie Gerhard, of the Gerhard Sisters Studio, St. Louis, Mo., when we saw her at the convention, that her husband, Dr. Hawley, died on July 17. Miss Gerhard had spent considerable time away from the studio recently taking care of her husband. We know her many friends will join us in extending sincerest sympathy.

O. O. McIntyre, newspaper columnist, tells this one: "One of those brisk young men with a camera who photographs approaching pedestrians and passes out numbered cards that reclaim the finished print at the studio, snapped a prim Victorian lady near the Murray Hill Hotel. She was startl-

ed at first, but then minced up and inquired: "Which tabloid will it be in, sonny?"

J. W. Edwards, 79-year-old photographer of Clinton, Ohio, died at his home there on June 18 after a brief illness. He had operated a studio in Wadsworth, Ohio, for a number of years before moving to Clinton.

Edward Wiber, photographer in Belleville, Ill., where he owned the Zahn Studios, died on July 14 in his studio as the result of a cerebral hemorrhage.

Frank M. Barnes, one-time photographer in Waynetown, Ind., died at the home of his daughter in Minneapolis, Minn., on June 23.

Irvin W. Powell, founder of the Powell Studio in Kankakee, Ill., which has been operated by his son Lyman since 1918, died at his home in that city on June 17, at the age of 70.

Raymond D. Schneider, of the well-known Peoria Fo-Dax Photo Co., Peoria, Ill., died at his home in that city on July 13.

In a recent court test, an ordinance in Grand Island, Nebr., was thrown out in court as being unconstitutional on the basis of interference with interstate commerce. Again we refer our readers to the proposed new form of ordinance which we published in our June 5 issue, copies of which are available at 25c each while they last.

Photographers all over the Middle West will remember Z. T. Briggs, former president and founder of the Z. T. Briggs Photo Supply Company, Kansas City, Mo., which became one of the Eastman Kodak Stores in 1929, and will regret with us to know that he passed away early on the morning of August 13 at the Cottage Hospital in Santa Barbara, Calif. From a small business which he started while a student at Midland College, Atchison, Kans., he built up one of the largest photo supply houses in the United States. Only 55 at the time of his death, for some years he had been living in Los Angeles, Calif. Funeral services were held in Atchison, where he was buried, on August 19.

Clip This for Your Advertising File

● As a rule we are unimpressed with poetry in advertising. Too frequently the rhymes are poor and the scanning worse. Here, however, is a bit of verse which we feel certain caught the attention of every reader. It was used in an advertisement of the Lainson Studios, Denver, Colo., operated by Peter J. Berkeley, and filled all the space below a circular group of two boys, who happen to be Mitchell and Bobbie Berkeley. Unfortunately the printing of the halftone is not such as to reproduce well, so we are quoting the verse only. Whether Mr. Berkeley, Miss Kennedy, his receptionist or some other member of the studio wrote the lines, we do not know, as no credit is given, but we extend our compliments to the unknown author. Other photographers may want to use it, and as it is not copyrighted, we see no objection.

Today he is proud of his freckles,
Tomorrow they'll fade and be gone.
His little snub nose
Will grow straight, I suppose,
As the years hurry on—and on.

When summery days are all over
And you're sending him back to his books,
Have you thought how he'll grow?
Two inches or so!
In a year how he'll change in his looks!

And so, to remember those freckles;
To recall how he looked—the young pup—
Before starting his trip
Back to school—take a tip,
"A photograph never grows up."

An ordinance recently passed in Ponca City, Okla., provides that photographers must pay a license fee of \$250.00 for the first year and \$5.00 per year thereafter. Of the amount, \$195.00 will be refunded by the city after the photographer has remained in business for 365 days. If a present photographer sells his business, the purchaser must pay the \$250.00 fee, of which \$195.00 will be refunded after the purchaser has remained in business 90

days. Solicitors must pay \$2.00 a day or \$10.00 a month and if premiums are offered, the fee rises to \$25.00 a day or \$200.00 a month.

M. E. Jones, for several years with the Firestone Tire & Rubber Company, of St. Louis, Mo., has been appointed sales manager for the Hammer Dry Plate Company of that city.

Luther B. Elliot, president and treasurer of the Elliot Advertising Service, Inc., Rochester, N. Y., died recently in that city, at the age of 68. At one time he was advertising manager of the Bausch & Lomb Optical Company of Rochester.

Miss Lula Tyus, prominent photographer of Birmingham, Ala., died on July 11. She was one of the outstanding women photographers of the South. Members of the Photographers' Club of Birmingham were among the honorary pallbearers.

The Art Craft Studio, Cartersville, Ga., owned by H. D. Owens, was completely destroyed by fire on July 28. Mr. Owens had insurance covering about one-third of the loss.

L. W. St. Clair, Brady, Texas, who, when not busy at photography, repairs violins, had a real break recently. He bought an old violin, rather reluctantly at the time, for \$15.00, only to find later that it was a genuine Ungar, worth about \$1,000.00.

Well, they give photographs away with tooth-paste now! One large firm is doing this in New York City, offering free action photographs to all passersby. They work with street cameramen, who make the shot, and then hand the subject a card stating that "the candid cameraman has just taken your picture in action—you'll want this picture . . . mail the coupon with one Blank Toothpaste carton."

Sam Robinson, specialist in wedding photography in Cleveland, Ohio for the past 25 years, father of Theodore, Paul, Ralph, Richard and Ruth, and husband of Edythe Sard Robinson, died recently as the result of a burst blood vessel caused by a fall. His family will continue the business.

Oscar C. Reiter, prominent photographic pictorialist of Pittsburgh, Pa., and former president of the photographic section of the Academy of Science and Art of Pittsburgh (which conducts the famed Pittsburgh Salon) died suddenly on Sunday, August 18, in hospital in that city.

The proposed convention of the Associated Photographers of Southern California, scheduled for August 23 and 24 at San Diego, has been called off, according to a letter just received from Evan Davis of San Bernardino. As he writes: "Some of our committee worked hard to try and put it over, but because of general conditions and too with some because of the failure of the Code it was hard to get many photographers interested. We also found it hard to get good speakers who would be of interest to all. If we could have had some of the national convention speakers, that would have drawn interest, but the expense made it out of the question for us."

On August 3, the 63rd anniversary of Carl Frey's starting in as a photographer, the *Utica* (N. Y.) *Daily Press* gave him an excellent story, with a portrait of himself taken in 1873 by L. C. Mundy, with whom he went into partnership at that time, and another showing him as the dignified gentleman he appears today. Sixty-two years of business in one community is a record seldom attained by any photographer. Congratulations to Carl Frey, and may he add many more years to the record.

Kee Coleman, well known photographer of San Francisco, Calif., and Miss Claire Brown were married on July 30 in Reno, Nev.

Howard D. Beach, 429 Virginia St., Buffalo, N. Y., past president of the P. A. of A., and inventor of the Beach Multi-Focal lens being manufactured and sold by the Wollensak Optical Co., Rochester, N. Y., has developed another new principle in optics. He now offers the Beach Auxiliary lens which will, among other things, double the depth of focus and at the same time double the speed of any lens. The Beach Auxiliary is placed in front of any lens and fastened by three set screws. For detailed information, write Mr. Beach.



More Than Fine Grain

PANATOMIC Film, constantly gaining in favor with commercial, pictorial, and press photographers, has many desirable qualities in addition to color sensitivity and fineness of grain. It has a long scale, develops rapidly, and produces ideal negatives by artificial light, or daylight, for either contact printing or enlarging. It also makes excellent positives for enlarged negatives. Eastman Safety Panatomic Film is supplied in all standard cut film sizes. You will like Panatomic results. Eastman Kodak Company, Rochester, N. Y.

EASTMAN SAFETY PANATOMIC FILM

Where To Find It

When your dealer can't supply you - try these firms

BACKGROUNDS

Ross L. Fitch Studio, Three Rivers, Mich.

CAMERAS BUILT TO ORDER

L. F. Deardorff & Sons, 11 S. Des Plaines St., Chicago, Ill.

CIRKUT ENLARGEMENTS

Morton & Co., 515 Market St., San Francisco, Calif.

COPY WORK FOR THE TRADE

Success Portrait Co., 1301 McCallie Ave., Chattanooga, Tenn.

LENSES GROUND AND REPOLISHED

L. F. Deardorff & Sons, 11 S. Des Plaines St., Chicago, Ill.

MIRROR MACHINES AND PARTS

Gibson Photo Jewelry Co., Inc., 833 McDonald Ave., Brooklyn, N. Y.

OPAQUE

Acheson Ink Company, Inc., 142 Skillen St., Buffalo, N. Y.

Artists Supply Co., 7610 Decker Ave., Cleveland, Ohio.

PHOTOFLASH SYNCHRONIZERS

S. Mendelsohn, 202 E. 44th St., New York City

PIECE WORK RETOUCHERS

E. P. & E. L. McCarthy, Box 127, Franklin, N. H.

business that creates the basis for valuation and not the amount of business that can be done in a certain location. After all, there are certain fixed charges in a studio business and the location of that business determines what they are to a great extent. The rent may be high; it may be necessary to employ more people in the studio at a given location than the amount of business warrants, but if the business is moved to another location it means building up a new clientele and the business has no original value any more.

Outside of an agreed round sum that one party may offer to another for a business, the usual elements that enter into valuation are the appraised value of the equipment, plus an agreed amount that any outstanding accounts will produce in the ordinary course of collection, plus any improvements based on the unexpired period of the studio lease; less any outstanding bills against the studio if such are not fully paid up at the time of sale or purchase. These are the basic values, and unless there is an element of good will evidenced in the past operations of the studio there is no merit in thinking that the price

Ask Us!

Determining the Value of a Studio. I wish to determine the value of a studio business. How may this be done? What percentage of a year's gross business does the value represent? Good will, of course, has little value because the photographic business is of such a personal nature. What percentage of a year's gross business is it safe to pay for rent? I would also like percentages for overhead, wages, supplies, advertising, etc.—A.W.B., Lyons, N. Y.

Answer by Mr. Dring: Your question asks how to determine the value of a studio business and then goes on to discredit the elements that enter into such a valuation. The value of a studio and the value of a studio business are two different quantities. The only things that make a business have any value at all are the intangible items such as good will, which you think has no value in a photographic studio. The ability to do a certain volume of business is of little value to a prospective purchaser unless there is evidence that it can be done at a reasonable profit, and it is the element of profit in a

RETOUCHING AND COLORING

PORTRAIT AND LANDSCAPE artist will do oil coloring of photographs. This work is of the finer sort, partly done by brush. Satisfaction guaranteed. Will do sample order of 1-8x10 print for 50c. For best results send sepia prints. Regular prices quoted upon request. Roselle Bon Saye, 3411 Wisconsin Ave., N. W., Washington, D. C. 9-5-1c

MISCELLANEOUS

CARL ZEISS 12 inch Tessar F/4.5, \$100.00—12 inch B & L Tessar \$85.00—14 inch Carl Zeiss Tessar F/4.5, \$125.00—16 1/2 inch Carl Zeiss Tessar F/4.5, \$150.00—16 1/2 inch Schneider Xenar F/4.5, \$120.00—16 1/2 inch Ross Xpres \$175.00. All like new. Joseph Smith 735 Fulton St., Brooklyn, N. Y. 8-20-2

FOR SALE—One home portrait Graflex camera, size 5x7 with F/4.5 Anastigmat lenses and leather case, slightly used. Present replacement cost \$325.00. Will take \$150.00. I.T.I.O. Company, Bartlesville, Oklahoma. 9-5-3c

DALLMEYER'S PORTRAIT Lenses: 3A - 4A - 5A - 3B - 5D - 6D and 7D, and a great number of all makes portrait lenses being offered at low prices. Joseph Smith, 735 Fulton St., Brooklyn, N. Y. 8-20-2

GOERZ LENSES 9 1/2 inch Dagor in Compound shutter, equal new \$65.00—9 1/2 inch in barrel equal new \$55.00—14 inch like new in barrel \$110.00—19 inch Imported \$125.00—24 inch Ross Goerz double anastigmat F/7, \$150.00; Cooke Portrait F/4.5—12 1/2 inch like new latest \$125.00; Cooke 13 inch portrait anastigmat F/4.5, \$100.00. Joseph Smith, 735 Fulton St., Brooklyn, N. Y. 8-20-2

WANTED To buy, if in good condition, a Multiple camera, a Calles or any automatic enlarger, and a Pako printer. Price must be reasonable. Stovall Studio, Dodge City, Kansas. 9-5-1

SAVE MONEY, time, patience on Kodak work by using Ideal Film Tanks. Cost little—work fine. Fit any dark room. Write A. P. Davis, 15 Edwards St., Binghamton, N. Y. 9-5-2c



From a Velour Black Print
Negative: X-F Pan Special.

Defender

PHOTOGRAPHIC PRODUCTS

TO keep abreast of modern trends in photography; to originate; to give variety . . . that idea prevails in every step in the production of Defender sensitized material and dominates the character, quality and diversity of the product. Defender Products answer every need in photographic portraiture; in the commercial, industrial or illustrative branches; in photo-finishing and in amateur picture-making. You can make your selection with confidence when the dealer tells you . . . "IT'S A DEFENDER PRODUCT."

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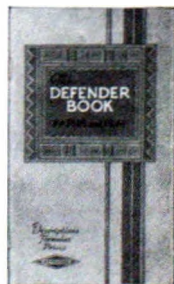
FILM

Commercial • Commercial Panchromatic • DuPac
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DEFENDER PHOTO SUPPLY CO., Inc.
ROCHESTER, NEW YORK



Ask Us!

We are always ready—through the staff of contributing editors to our two magazines—to help photographers over their rough places. The men and women of national reputation named below will gladly answer your questions. There is no charge, but each inquiry must be accompanied by two 3c stamps. Answers will be forwarded direct by mail as quickly as we can write the proper persons and get back a reply. Those of general interest will be published, initials only being used and even those omitted on request of the writer. Letters should be addressed to the proper editor in our care. In case you don't know which editor to address, or if your problem is not covered in this list, write the ASK US! Department anyway and we will get the information for you somewhere. We answer questions on literally hundreds of subjects in addition to those listed.

Portrait Photography:

COMPOSITION IN PORTRAITURE—Nicholas Haz.
COST FINDING—Louis Dring.
HOME PORTRAITURE—Fred R. Bill.
RECEPTION ROOM PROBLEMS—Mrs. Helen Lewis Fetzner.
WHITE BACKGROUNDS—Fred R. Bill.

Commercial & Industrial Photography:

AERIAL—Arthur P. Bancroft.
ARCHITECTURAL—Harold H. Costain.
BANQUETS—John E. Ertler.
CIRKUT WORK—John E. Ertler.
COLORING GLOSSY PRINTS—M. M. Hampton.
COMMERCIAL PRICES—H. C. McMullan.
COST FINDING—Harvey Sutcliffe.
FURNITURE—"Jim" Thompson.
GENERAL WORK—H. C. McMullan.
NEWS and PRESS WORK—John E. Ertler.
PHOTOMICROGRAPHY—Charles H. Shipman.

Photo Finishing:

LARGE PLANTS—David S. Merriam.

Miscellaneous:

ACCOUNTING SYSTEMS—Louis Dring.
AIRBRUSHES and AIRBRUSH EFFECTS—J. A. Paasche.
BROMOIL—Charles H. Shipman.
COLORING IN OILS—Mrs. Hugh Carver.
COLORING WITH WATER COLORS—M. M. Hampton.
DARK ROOM DIFFICULTIES—Charles H. Shipman.
DESENSITIZING—John G. Marshall.
FLASH POWDERS AND FLARES—John G. Marshall.
GENERAL TECHNICAL PROBLEMS—W. H. Leman.
LEGAL PROBLEMS—Leo. T. Parker, Attorney-at-Law.
LENSES—Charles H. Shipman.
MOUNTING and ADHESIVES—Nat Heiman.
STUDIO DECORATION—Fred R. Bill.
WINDOW DISPLAY and DECORATION—Don Wallace.

CHARLES ABEL INCORPORATED

525 Caxton Building

Cleveland, Ohio

will include anything other than the above. In other words, you are either buying or selling chattels at the market price, or you are buying or selling an established business which has additional values above those of the chattels. Consider just the question of the lease, which we will say for argument has two years to run. The present owner may have made improvements in the premises for which he wants to be reimbursed in the sale price, but the purchaser must realize that what he pays for such improvements must be retired over the two-year period, and the lease may contain a clause requiring

the lessee to return the premises in the same condition to the lessor at the termination of the lease as when the lease was signed, making it obligatory on the lessee to spend a considerable sum even at the termination of the lease, so that the value of the studio must take all of these things into consideration.

If the business in question is a going business, the basis of valuation would be upon the inventory value as mentioned before, plus a good will or business valuation of one or two years' net profits as agreed upon by the parties, and this valuation would be influenced to a great extent by the lease. All business is of a personal nature, and the only element in business which creates a value above the market price of the chattels used in the business is the invested personal value that must reflect itself in some way even when a business changes hands. There will be some loss in this value, but certainly some of it will be retained to the benefit of the new owner, so that the decision on the part of the purchaser becomes one of: "How much of this personal value can I retain?"

How much it is safe to pay for rent is determined partly by what the prospects are for business in any location. Low rent may mean that considerably more must be paid for advertising and salaries than would be necessary in a self-advertised location where the rent is considerably higher. The following percentages taken from a representative studio may help you:

Sales	100%
Cost of Sales (including materials and supplies, direct labor, studio expense and depreciation on equipment)	49%
Gross Profit	51%
Selling Expense (salaries, advertising, etc.)	15%
Administrative Expense (salaries, office expense, rent, taxes, insurance, heat, light, telephone, etc.)	32% 47%
Net Profit	4%

This studio had a yearly business of \$35,000.00, and the net profit is figured after paying the studio owner a fair salary which is included in the administrative expense. Considering that depreciation and other expenses were all properly accrued and charged against operations, the result is good.

Mallinckrodt

Back of your Camera & Skill -
Dependable
Chemicals

The advertisement features a collection of Mallinckrodt chemical products arranged on a surface. The products include several large metal cans labeled 'CHROME ALUM', 'ALUM', and 'CARBONATE', and various glass bottles labeled 'ACID ACETIC', 'ACID ACETIC GLACIAL', 'PYRO CRYSTALS', 'SULPHITE', 'PICTOL', and 'HYDROQUINONE'. Some bottles are marked 'POISON'. In the background, a silhouette of an industrial city skyline with a prominent water tower is visible against a light sky. The Mallinckrodt logo is written in a large, stylized script at the top left, and a slogan is written in a similar script across the bottom right of the product display.

Mallinckrodt

CHEMICAL WORKS

SECOND AND MALLINCKRODT STS. ♦ ST. LOUIS

NEW YORK ■ PHILADELPHIA ■ CHICAGO ■ TORONTO ■ MONTREAL

Classified Advertising

Cash must accompany order. Advertisements not accompanied by remittance will be returned. No display permitted. First two words in capitals without extra charge. If additional words are to be set in capitals, the price is double the rates quoted below. Unless advertisements are typewritten or printed plainly, we cannot be responsible for inaccuracies.

Situation Wanted: 2c per word. No advertisement less than 50c per insertion.

Help Wanted: 3c per word. No advertisement less than \$1.00 per insertion.

Retouching, Coloring, Studios For Rent, Studios Wanted, Miscellaneous: 4c per word. No advertisement less than \$1.25 per insertion.

Studios For Sale: 6c per word. No advertisement less than \$1.50 per insertion.

Answers in Our Care: When box numbers are wanted, add five words to your total, and then an additional 25c for each insertion to cover cost of clerical work and forwarding. Advertisements requesting or offering to send samples will not be given box numbers.

Confidential Service: There are times when a reader wishes to answer a box number but does not wish to reveal his own identity without knowing that of the advertiser. In such cases, answer the box number as usual, and send with your reply a separate letter giving the names of any persons to whom you would not wish to write. If the advertiser happens to be one of those persons your letter will be destroyed and not forwarded. Naturally we cannot return the letter or we would be exposing the name of the advertiser.

When Printed: Advertisements received on or before the 10th of the month are published in the issue of the 20th; from the 10th to the 26th, they are published the 5th of the following month.

Deposit System: When selling goods to, or purchasing from strangers, you can avoid risk of loss by using our Deposit System. If using this system, the words "Deposit System" must be included in your advertisement. The buyer writes the seller that he wishes the goods sent for examination and at the same time sends his check for the amount to us, made out to Charles Abel Incorporated, 525 Caxton Bldg., Cleveland, Ohio. When we receive the money we advise both parties, and the seller does not send the goods until so advised by us. If the buyer is satisfied he writes to us within three days after receipt of the goods, whereupon we send the money, less a commission of 1% (minimum 50c) to the seller. If the buyer does not approve the goods, his deposit is not returned until the seller advises that goods have been received in condition as sent. When so advised, we then return the deposit to the buyer less only the minimum commission of 50c. Transportation charges are paid by the buyer, but in event of no sale, and subject to there being no different agreement between the parties, each pays charges one way. Seller takes risk of loss or damage in transit. Any disputes must be settled between the parties concerned, in which case we hold the deposit pending settlement and advice from both parties. Charles Abel Incorporated accepts no responsibility other than that of holding the deposit until each transaction is completed to the satisfaction of both parties. **GOODS MUST ALWAYS BE SHIPPED DIRECT TO THE BUYER AND NOT TO US.**

Will pay highest cash prices for printing machines, enlargers, studio cameras, and lenses. New and used equipment bought, sold and exchanged. Send for our latest bargain book. Mid-West Photo Supply Company, 30 East Randolph Street, Chicago, Illinois.

LONG WEARING rubber aprons, 38 inches long, maroon color. Special 2 for \$1.65 postpaid. Neumeyer Photo Service, Neumeyer Bldg., Brillion, Wis.

IF YOU want a lens please write me, stating requirements. I have the largest and most varied selection, almost every known make and size in stock, and my prices are the lowest. Joseph Smith, 735 Fulton St., Brooklyn, N. Y.

HELIAR LENSES: 9½ inch \$55.00—12 inch \$85.00—12 inch F/3.5 \$90.00—14 inch \$110.00. All new Heliar 16½ inch fine condition \$120.00. 10x12 B & L Tessar 1c—\$90.00. 11x14 ditto \$125.00. Everything sent on approval. Good lenses taken in exchange. Joseph Smith, 735 Fulton St., Brooklyn, N. Y.

FOR SALE—Complete studio equipment. Very reasonable. For particulars, write S. K. Toomire, 130 Elgin Ct., S. E., Grand Rapids, Mich.

HELP WANTED

The insertion of an advertisement under "Help Wanted" carries with it the obligation on the part of the employer to answer every response to his advertisement, if only with a postcard, and to return samples of work, etc., promptly. The publishers will appreciate being advised when employers fail to accord this courtesy to employees.

WANTED GOOD RETOUCHER and all around assistant for a studio that produces quality portraits and fine commercial work. Steady position. Write at once giving all details and salary expected. Metro Studios, Macon, Ga.

PHOTO FINISHER—All around man, married, with long experience and plant managerial ability. Rapid on Pako and enlarging. Year round position. Unless you are an exceptional man do not apply. State age, experience, salary desired and send recent photograph in first letter. Address K-4 care this journal.

YOUNG MEN OR WOMEN, ages 25 to 35, to take charge of branch studios in East. Must be good operators and efficient managers. Send latest photograph of self and state salary expected. Address G-7 care this journal.

AN OPPORTUNITY exists in this vicinity for a home portrait unit serving surrounding territory, through the best established portrait studio in the West. Car plus equipment necessary. Can help finance. Correspond Peter Berkeley, Lainson Studio, Brown Palace Hotel, Denver, Colorado.

HAVE STEADY POSITION for all around man, experienced in all branches of studio work. Write fully to The Agler Studio, Van Wert, Ohio.

EXCELLENT OPPORTUNITY for the following: operator of proven ability to make modern high-grade portraits, especially good with children, in the studio or at home; a receptionist, capable of managing a branch studio; a good retoucher and etcher. All specialists in their particular line of work. Address C-1 care this journal.

SITUATION WANTED

The insertion of an advertisement under "Situation Wanted" carries with it the obligation on the part of the employee to answer every letter he receives in response to his advertisement for a position, if only with a postcard. The publishers will appreciate being advised when employees fail to accord this courtesy to employers.

OPERATOR—13 years all around experience, would like an opportunity rather than just a meal ticket. Address P-4 care this journal.

WANTED POSITION as retoucher, colorist and receptionist. Ada Hollis, Box 45-A, Marion, Louisiana.

LADY WILL act as assistant or receptionist and furnish 10-A Century camera and lens to reliable photographer, for \$20.00 per week. Address L-4 care this journal.

WANTED PERMANENT position. Retoucher, receptionist, colorist, operator. Can help with finishing. A-1 references. Anata Smith, General Delivery, Monroe, La.

STUDIO FOR SALE

WELL ESTABLISHED studio in Michigan town of 7,000. 65,000 people in trade territory. Inventories about \$3,000. Sale price—inventory. Fall business will pay for studio. Write C-3 care this journal.

GROUND FLOOR studio in the best little town in the State. Well equipped for portrait and photo finishing, doing good business. Low overhead. No competition. Established 15 years. Large surrounding district to draw from. Cash required. The Bell Studio, Enumclaw, Washington.



(Enlargement)

Photo by James D. Foley



(Contact Print)

IT'S John O'Donohue. And instantly you feel that here's a personality—a man whose character you can appraise accurately. Enlargements on Haloid Projecto Paper carry that sought-for delineation of actual humanity. In all respects they are true contact prints—only larger in area.

Do you wonder that sitters buy liberally? Order this Trial Offer today— $\frac{1}{2}$ gross Haloid Projecto Double Weight, only \$4.

^ ^ ^

THE HALOID COMPANY

7 HALOID ST., ROCHESTER, N. Y.

BRANCHES: New York Office: 225 Fifth Ave.
Chicago Office: 608 So. Dearborn St. Los Angeles
Agent, A. H. Muhl, 643 S. Olive St. San Francisco
Agent, A. H. Muhl, 222 Kearny St.

HALOID



Projecto

LENSES

SAVE MONEY ON LENSES
Get our prices before you buy.
Lenses for still, movie or projection.
Tell us what you want.
Our prices will please you.

PHOTOGRAPHIC LENS CO.
132 W. 42nd Street NEW YORK CITY

**Everything
in Lenses
New and Re-
conditioned**

**Bought,
Sold and
Exchanged**

BACKGROUNDS

by DECORATIVE BACKGROUND Co.

4814 W. 25th Place
Chicago-Cicero, Ill.
are "Business-Getters"

FOR SALE—Portrait, commercial, photo finishing and framing business. Centrally located in business district. Town of twenty-five thousand inhabitants. Pittsburgh district. An attractive cash proposition. Address F-4 care this journal. 9-5-1c

FOR SALE—Paying camera shop and photo finishing plant. Retail business only, on east coast Florida, city of 20,000. Shop and plant is in connection with largest gift and art shop in county. Interests in other State. Price \$2,000 cash. Address W-2 care this journal. 9-5-2

OLDEST ESTABLISHED studio in best college town in Ohio. Located on principal business street half block from main campus gateway. Money maker for hustler. Living apartments—low rent. For particulars address C-2 care this journal. 9-5-1c

A WELL ESTABLISHED, high class studio doing portrait and fashions. Best location in Detroit, Mich. Low rent. Bids under \$1500.00 need not apply. Address O-1 care of this journal. 9-5-1c

FOR SALE—Studio fully equipped to 11x14. Retiring, old age. A bargain. For particulars, write Foley's Studio, Alliance, Ohio. 9-5-1c

FOR SALE—Ground floor studio in college town of 5,000 in eastern South Dakota. Established 44 years. Trading area of 50 miles in all directions. Death of owner reason for selling. Oylo's Studio, Brookings, S. Dak. 9-5-1c

For sale, ONLY STUDIO in town of three thousand, located in good farming community, large territory, complete equipment, portrait and Kodak. New building; main street location, ground floor. Haering Studio, Springfield, Minnesota. 9-5-1c

Professional Dealers Who Want Your Trade

AKRON, OHIO—Metzger Photo Supply Co., 1091 South Main St.; 39 East Mill St.

ATLANTA GA.—Eastman Kodak Stores, Inc., 183 Peachtree Street.

BALTIMORE, MD.—Eastman Kodak Stores, Inc., 309 North Charles Street.

BALTIMORE, MD.—Maryland Photo Stock Co., 219 North Liberty Street.

BOSTON, MASS.—Ralph Harris & Co., 30 Bromfield Street.

BOSTON, MASS.—Eastman Kodak Stores, Inc., 38 Bromfield Street.

BUFFALO, N. Y.—J. F. Adams, Inc., 459 Washington Street.

CHICAGO, ILL.—Burke & James, 223-225 West Madison Street.

CHICAGO, ILL.—Eastman Kodak Stores, 133 North Wabash Avenue.

CHICAGO, ILL.—Norman-Willets Co., 318 West Washington Street.

CINCINNATI, OHIO—Eastman Kodak Stores, Inc., 27 West Fourth Street.

CINCINNATI, OHIO—The Huber Art Co., 124 W. 7th Street.

CLEVELAND, OHIO—The Dodd Company, 1025 Huron Road.

CLEVELAND, OHIO—Eastman Kodak Stores, Inc., 806 Huron Road.

DALLAS—TEXAS—Eastman Kodak Stores, Inc., 1504 Young Street.

DENVER, COLO.—Eastman Kodak Stores, Inc., 626 16th Street.

INDIANAPOLIS, IND.—The H. Lieber Company, 24 W. Washington Street.

JACKSONVILLE, FLA.—Eastman Kodak Stores, Inc., 129 West Adams Street.

KANSAS CITY, MO.—Eastman Kodak Stores, Inc., 1010 Walnut Street.

LOS ANGELES, CALIF.—Eastman Kodak Stores, Inc., 643 South Hill Street.

MEMPHIS, TENN.—The Memphis Photo Supply Co., 6 N. Main Street.

MILWAUKEE, WIS.—Eastman Kodak Stores, Inc., 737 North Milwaukee Street.

MINNEAPOLIS, MINN.—Eastman Kodak Stores, Inc., 114 South 5th Street.

NEW ORLEANS, LA.—Eastman Kodak Stores, Inc., 213 Baronne Street.

NEW YORK CITY—Eastman Kodak Stores, Inc., Madison Avenue at 45th Street; 235 West 23rd Street; 745 Fifth Avenue.

NEW YORK CITY—Medo Photo Supply Corporation, 323-325 West 37th Street.

NEW YORK CITY—George Murphy, Inc., 57 East 9th Street.

NEW YORK CITY—New York Camera Exchange, 109 Fulton Street.

NEW YORK CITY—Willoughby, Inc., 110 W. 32nd Street.

PHILADELPHIA, PA.—Eastman Kodak Stores, Inc., 1020 Chestnut Street.

PITTSBURGH, PA.—Eastman Kodak Stores, Inc., 606 Wood Street.

PORTLAND, ORE.—Eastman Kodak Stores, Inc., 709 South West Washington Street.

ST. LOUIS MO.—Eastman Kodak Stores, Inc., 1009 Olive Street.

ST. LOUIS, MO.—W. Schiller & Co., Inc., 6 South Broadway.

SAN ANTONIO, TEXAS—Southwest Photo Supplies, 120 Bonham Street.

SAN FRANCISCO, CALIF.—Eastman Kodak Stores, Inc., 216 Post Street.

SAN FRANCISCO, CALIF.—Hirsch & Kaye, 239 Grant Avenue.

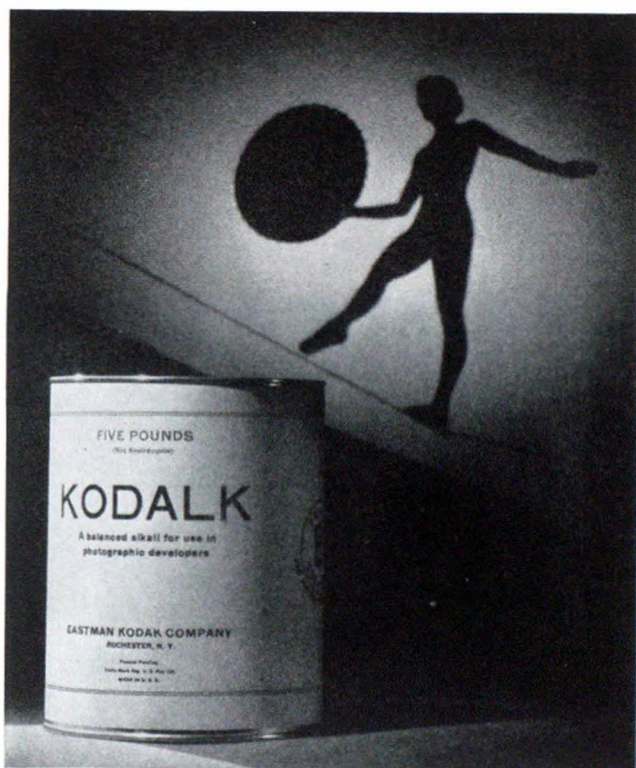
SEATTLE, WASH.—Eastman Kodak Stores, Inc., 1415 Fourth Avenue.

SYRACUSE, N. Y.—Francis Hendricks Co., Inc., 339 South Warren Street.

TOLEDO, OHIO—George L. Kohne, 602 Summit Street.

WASHINGTON, D. C.—Eastman Kodak Stores, Inc., 607 Fourteenth Street, N. W.

WINNIPEG, MAN.—Eastman Kodak Stores, Ltd., 287 Portage Avenue, also Calgary, Alta.



PROTECT YOUR RESULTS



THE chemicals you use have a direct bearing on the quality of your photographic results. That is why Eastman Tested Chemicals are made, tested, and recommended for your use. Use them and 90% of your darkroom troubles will disappear. Eastman Kodak Company, Rochester, N. Y.

Specify

EASTMAN TESTED CHEMICALS



Smart Photography

THE material you use doesn't make your portraits smart, but it can help you to put smartness into them. Short exposures enable you to catch the tilt of a head or poise of a figure—the flash of expression or the characteristic gesture that gives the portrait smartness.

Eastman Super Sensitive and Portrait Panchromatic Films have ideal qualities for informal portraiture—the type of photography that demands materials having both speed and quality. Eastman Kodak Company, Rochester, N. Y.

EASTMAN

SUPER SENSITIVE AND PORTRAIT PANCHROMATIC FILMS