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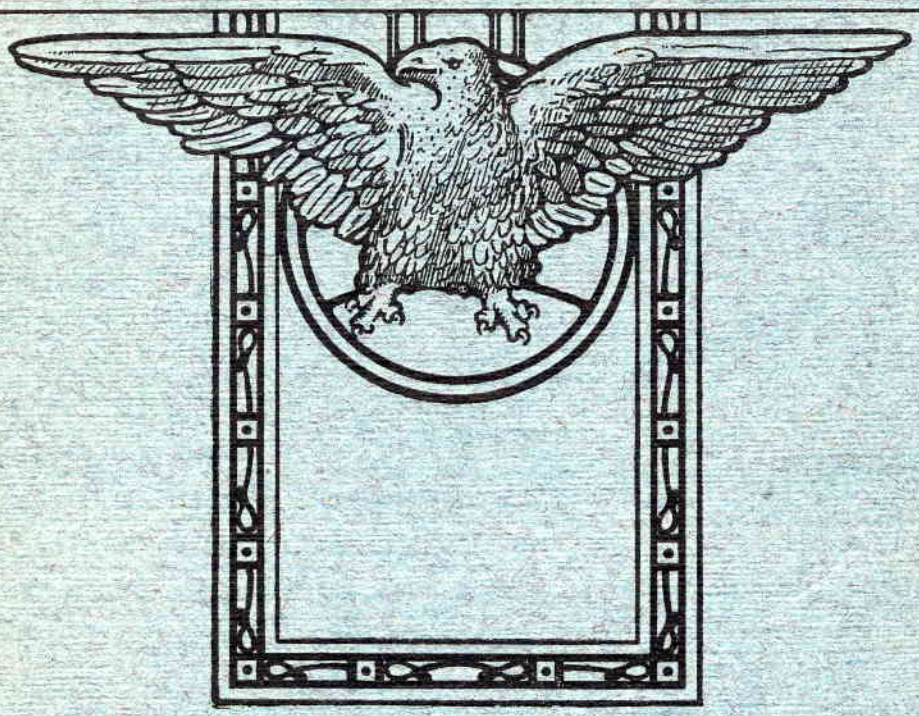

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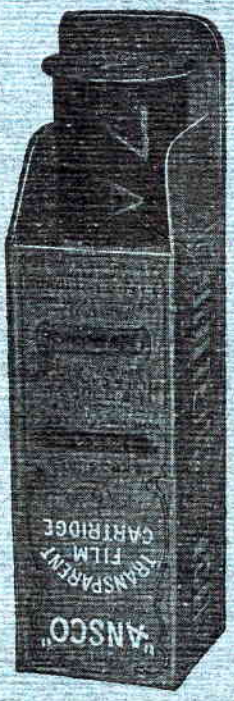

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Published monthly by the American Photographic Publishing Company, 221 Columbus Avenue, Boston, Mass.
SINGLE COPIES 15 CENTS YEARLY SUBSCRIPTION $1.50 TO CANADA $1.85 TO FOREIGN COUNTRIES $2.25

MANAGING EDITOR: FRANK R. FRAPRIE, S. M., F. R. P. S. ASSOCIATE EDITOR: F. C. BEACH, PH. B.

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Entered as second-class matter, March 16, 1908, at the Postoffice at Boston, Mass.

WHOLE NO. 283 JANUARY, 1913 VOL. VII., NO. 1

PRINCIPAL ILLUSTRATIONS

ARTICLES AND DEPARTMENTS

The Sparrell Print, Boston

AMERICAN PHOTOGRAPHY

VOL. VII. JANUARY, 1913 No. 1

WINDOW PORTRAIT L. J. BUCKLEY

EXHIBITION OF PHOTOGRAPHS AT THE MONTROSS ART GALLERIES, NEW YORK

EDWARD R. DICKSON

IF one were to accept the decision that photography is but a mechanical process, its adoption by artists as their medium of expression necessarily requires an explanation far more insistent than the mere lament of the piqued that it is not art.

The amateur who is void of art feeling in his abundant exposures unsuccessfully strives for a degree of self-expression. While his numerical efforts may necessarily become mechanical, these efforts are indicative of a consciousness of the unattainable, and are therefore convincing points that those who have given photography artistic distinction are guided by a definite concentration of feeling and thought — a requisite essentially more potent than the exercise of mechanical activities incident to promiscuous snapshooting.

However this may be, photography does not stand at the door of art a suppliant for admission. In the dignity of conscious worth it will continue to yield its secrets to those who approach it intelligently and sincerely and with a positive appreciation of its worthiness to express their personality.

The capacity to see and to feel beautiful things is an essential. The ability to harness the fleeting light, to describe emotions too subtle for words, is the problem of the artist photographer to-day, and when he attains such successes he has gone beyond the ken of mere chemical associations.

By reason of its chemical dependency it is said that photography is a mechanical process and cannot therefore be art. May one ask if the action of chemicals upon copper plate reduces etching to a mechanical process also? One would hardly think of disassociating its chemical obligations, despite the fact that a popular etcher, in the limitation of his knowledge of photography undoubtedly, speaks of a picture as being "as uninteresting as a photograph."

Those who are striving to let photography serve as the inspiration of some phase of life and the stamp of some form of beauty are blending science and art in a confluence of these two great potentialities. As Alvin Langdon Coburn aptly writes, "It is the marriage of Science and Art."

Obviously, therefore, the work of the artist photographer must be largely a work of loftier insight, of exalted construction, of more profound and beautiful expression than the excursions of the novice in quest of holiday records.

Those who are clinging to the importance of distracting details in their compositions and persisting that elimination of these renders them unbeautiful are not by any means insisting upon beauty as a determining quality, but on beauty of a particular kind, and as soon as their knowledge ceases to be parochial, and their concentration becomes developed, we shall begin to feel that beauty may be found where simplicity abounds.

The making of photographic pictures into an absolute instrument of expression is the aim of the pictorialist. The importance of this, so far as one's artistic attitude is concerned, is not simply a representation of a recognized model, but the excellence which makes a form expressive of beauty or power, of ingrained emotions.

The foundation of photography must unquestionably rest on selection. Subjects increase in interest as they yield themselves to the play of sunlight, as they fill the space on our ground glass, and as they are reduced to a degree sufficient to enable us to find enjoyment in selection made in a realizing sense of what we desire to express or to design in a prescribed area. The pictorial worker feels undoubtedly the thrill of delight in composing and selecting his work before exposure. Indeed, the finished work hardly represents the inner satisfaction the photographer must feel during the process of choice and arrangement. It is here that he encounters the beauti-

THE SOUTH WIND
WILLIAM B. DWYER
Montross Gallery Exhibition

ful significance of proper selection, fidelity to which renders the aftermath of negative tinkering a remote and forgotten period. In other words, at the time of exposure, can one disregard unity and hope to gather such unrelated fragments by more or less skilled darkroom manipulations?

Restricted by his camera in portraying only that which is seen, the photographer's task is to face reality in its sternness, to harness the variant light in an effort to involve and suggest temperament and artistic instinct, to use his medium in demonstration of what is fundamental and formative in his nature.

The success of pictorial photography will be measured by the degree which finds it capable of subjection to artistic expression. If it is to continue to receive recognition, it must be that of personality, and the means of its artistic power must be the vitality with which it expresses individuals. It is not necessary to enter into the fullness of this realization by indefinite suggestions or impressions. Nor can this vitality be sustained through representation of shadows by impenetrable darkness. The Stygian Epoch has happily passed, yielding itself to vibrant light, and photography must retain its racial trait by the maintenance of a decisive though none too insistent delineation.

The contributors represented by one hundred and fifty prints at the Montross Art Galleries, 550 Fifth Avenue, New York, have shown that this force must be the characteristic beauty of photography, and that its employment must be accompanied by an appreciation of the sensitiveness of temperament, by fidelity in the preservation of light-values, by a knowledge of the principles contributary to art, and belief in the adequacy of the camera to express various individualities.

These are the substances which have given photography distinctive strength and furnished an unmistakable indication of its development, and the exhibition at the Montross Art Galleries is but indicative of an absorbing personal interest and sincerity on the part of the contributing artists in America who have chosen photography as their medium of expression.

Paul L. Anderson shows his "Path, Sunlit Snow," in which one finds a remarkable degree of success in the rendering of snow quality and excellent composition. He has treated this in so poetic a manner as to call forth unstinted praise for such an accomplishment.

Chas. H. Barnard shows three prints, excellently selected. His "Sunlit Wall" is very delightful and "The Courtyard, New Orleans" is a purposeful choice and a manifest realization of the faculty of expression by means of the camera.

Mrs. Jeanne E. Bennett's "Gossamer" is very interestingly related in its space, and her "Gentleman from South America" is extravagant in richness and is composed with true conception.

Francesca Bostwick exhibits five prints. Her "Canal, Bruges" is a very successful and personal interpretation, and one enjoys the dark note of the chain in repeating the sweep of the bridge.

In Alvin Langdon Coburn's work one finds him represented in the enjoyment of big things, in wonderful vistas of the strange and wild Southwest. His "California Hilltops," perhaps the most forceful among those he exhibits, is a beautiful specimen of discriminating selection and atmospheric attainment. "Giant Palms" is lofty and decorative, bold and beautiful, individually treated. "The Pillar Cumulus" is a sweeping, surging cloud filling the frame admirably. "From the Canyon Rim," "In the High Sierras," "Wawona," "The Temple," and "The Mystic Springs" are expressive of the depth and range and full import of the natural appearance of the Southwest, which he has photographed with a full sense of personality so as to show the significance of his work in the development of photography in America.

Dwight A. Davis shows his feeling for the decorative in his very pleasing "Quiet Pool."

Chas. B. Denny's "Still Life" has been composed with a conscious sense of the compass of space and the use of shadows in filling this. The print seems to be happy in tonal quality and

ORIENTAL DANCER
DR. ARNOLD GENTHE
Montross Gallery Exhibition

photographic perfection. His "White House" is another expression of his feeling for beautiful arrangement and handling of values.

In Wm. B. Dwyer's collection one finds him disporting in characteristic paths. His nudes amply compose, and, while possessing vigor in their treatment, are hardly fundamental and characteristic of photographic technique. In the frailty of its figure and the velocity of the "South Wind," however, we find a permanent impression, comprehensive enough to reveal his strong personality.

In Dr. Arnold Genthe's "Oriental Dancer" we are given, not arrested motion, but a translation of feeling into continuous movement. The figure still dances in endless and imposing modulations, and thereby becomes expressive of the very essence and spirit of dancing. His "Fugi from Lake Hakone" is a decorative bit, convincing in its values and tones.

In "Setting the Table" Louise Halsey has made much out of a domestic scene and her simple motive has given the print force.

Gertrude Kasebier, in her deft handling of groups and figures, excites admiration, and her collection adds to the power and wealth of photography. "Château de la Marte" seems like a brief note of idealization in contradistinction to the well-defined though very enjoyable "Wharf Rats."

Wm. E. Macnaughtan enjoys in singular measure the ability to describe his conception with a glow and splendor. His landscapes, by far too delicate for adequate reproduction, are very impressive, and his exquisite hand-coated platinum prints are illustrations of photographic technique difficult to surpass.

William J. Mullins's little pictures were like violets lifting their heads in a great field and were interestingly composed and presented.

Eva Watson Schutze shows six prints, mainly groups, treated with much feeling and having photographic qualities indeed. Her luminous essays in sunshine are quite enjoyable.

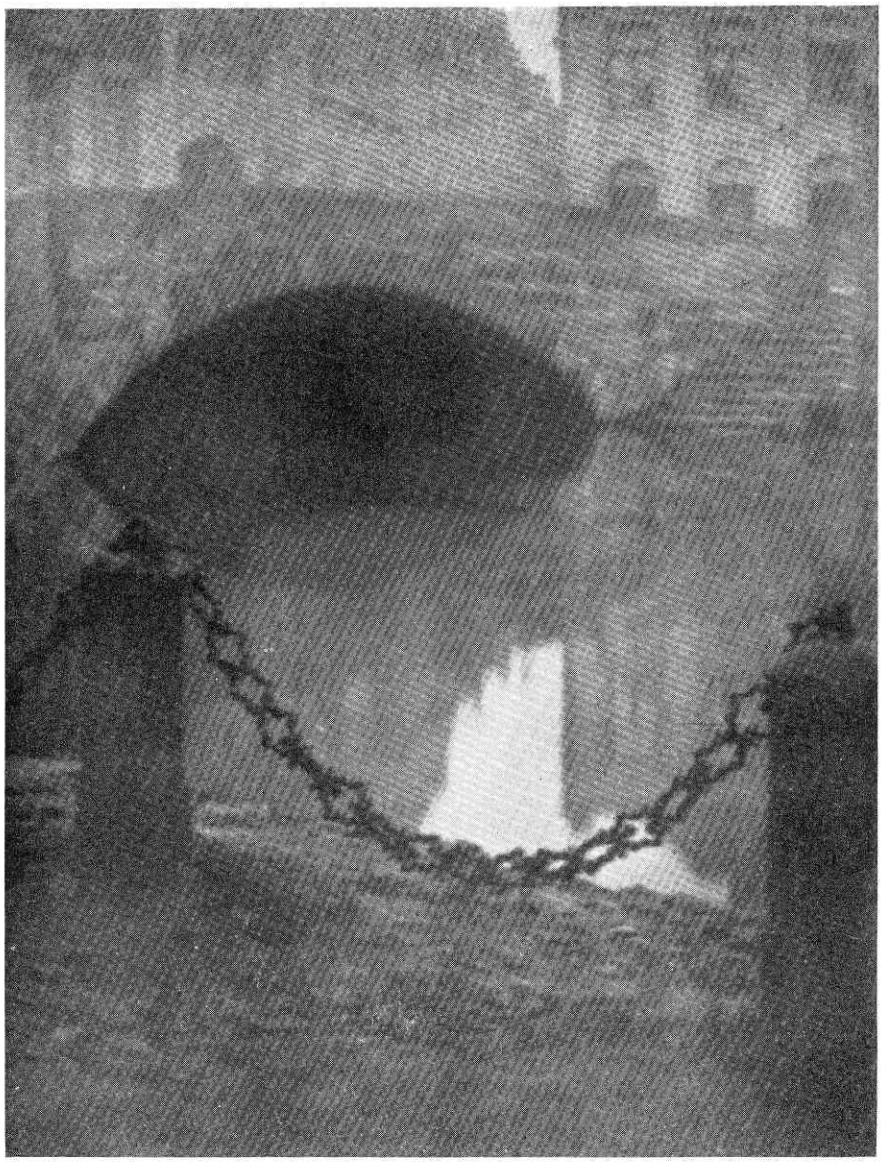
George H. Seeley of Stockbridge shows eight prints, quite decorative in arrangement, and being gum, were markedly different in technique from those of any other exhibitor. With a poetic touch in all he accomplishes, he furnishes us with excellent examples of arrangement and mysterious expression. His pictures, however, do not carry any suggestions or revelation of elements and qualities common to photographic prints. They are very strange indeed.

Karl Struss's "Columbia University, Night," an exquisite platinum print of pure quality, shows a personal and unusual interpretation. With absolute sincerity and from a distinctly new and strong viewpoint, he gives us "Lower New York" in the tumultous sweep and current of modern life, and makes one see the majesty of the western metropolis in sunset garb.

The introduction of the figure, coursing the hill and balancing the tree, in his "Nova Scotia Landscape," is a perception of the relationship which he feels between space-filling and photography. His "Fifth Avenue" is dazzling in gaiety and resplendent in sunshine.

Augustus Thibaudeau's "Becalmed" is discriminatingly chosen and beautifully presented. It stamps him as an artist possessing a deepening interest in the study of life. While his "Pine Tree" may not be as tender in thought, his "Niagara Falls" and portraits are appropriate assimilations of photography and art, and a persuasive influence on the latter.

Clarence H. White contributed eight prints of delightful composition and refined treatment. In contrast to the very large prints of Seeley and Coburn, Mr. White's seemed relatively small but none the less enjoyable. His "Model" revealed itself in a simple motive, the delicacy and beauty of which were quite gratifying, and well expresses his attitude in photography. "At the Window," masterly handled in the harmony of its parts, distinguishes him among his contemporaries in the fullness with which he garners a harvest of pulsing sunlight, his shadows being particularly luminous. "The Bather" shows a remarkable distribution of light on a nude figure.



CANAL, BRUGES
FRANCESCA BOSTWICK
Montross Gallery Exhibition

In gladsome settings, one enjoys "At Breakfast" and "The Mirror," in which he shows his attitude towards the great light and his realization that this must be the shaping influence in the progress of photography. Mr. White undoubtedly possesses a marked sensitiveness to delicate and fleeting interpretations of sunlight. He has composed his "Footbridge" with an appreciative sense for the filling of space, while the portraits of "Mrs. Fox" and "An Artist" are undoubtedly charming interpretations of character. His activities in the conduct and support of photographic exhibitions continue to add to their interest and success.

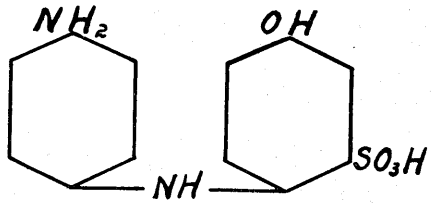
Amy Whittemore's "Convalescent" showed a beautiful treatment of an unusual study and her success is an unfolding of what may be accomplished under similar conditions.

Others who exhibited prints were: Albert Bolenbaugh, Katharine Stanbery Burgess, Victor N. Camp, Sidney Carter, A. D. Chapman, Edward R. Dickson, Spencer Kellogg, Jr., H. H. Moore, W. H. Porterfield, Mary E. Robinson, A. Romano, Eleanor Pitman Smith, Emma Spencer, Edith H. Tracy, Edith R. Wilson.

SULFINOL

E. J. WALL, F. R. P. S.

IN the issue for July, 1912, on page 418, a brief note on the new developer sulfinol was given, and possibly a fuller notice may be of interest. The graphic formula is:



Sulfinol is a very fine, light powder of a greenish-gray color, interspersed with white lumps. It is almost insoluble in water and alcohol, but readily soluble in a solution of an alkali and in alkaline sulphites. With an alkaline carbonate, it forms a light brownish-red solution, which darkens on exposure to air; but the oxidation product is not very soluble and precipitates in the form of fine acicular crystals; there is very little tendency, therefore, for an old developer to stain the gelatine of the plate. A used developer was allowed to stand in a graduate for eight days and again used for development and, although development was very slow, there was no staining of the film.

The formula recommended by the makers is:

Sodium sulphite, anhydrous	20–35 grams
Sodium carbonate, anhydrous	20–30 grams
Sulfinol	10–15 grams
Distilled water	1,000 cubic centimeters

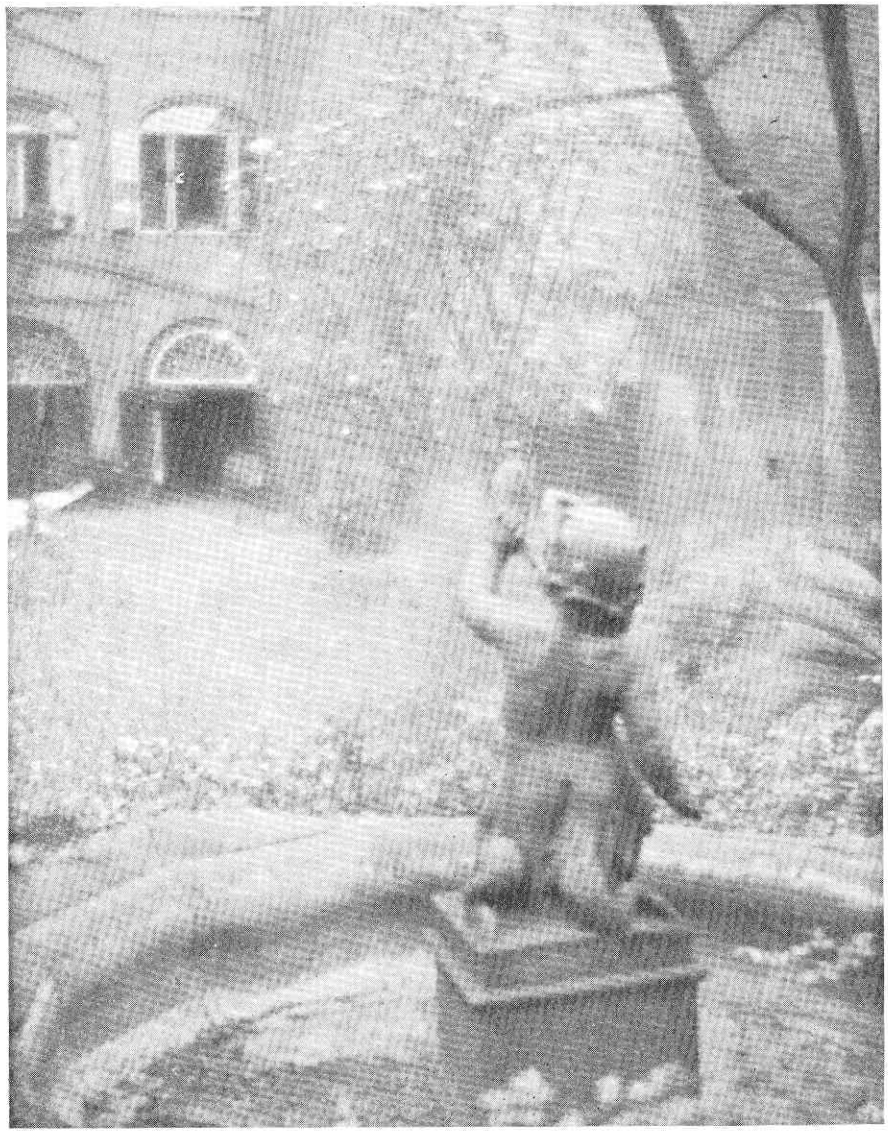
For my experiments I adopted the strongest developer.

The first point to determine was what may be popularly explained as its efficiency, or, as the practical man would say, its power as compared with other developers "to fetch as much out of the plate"; and the results expressed in plate speeds were as follows:

Ferrous oxalate (standard)	72 H. & D.
Sulfinol	95 H. & D.
Metol-hydrochinon	100 H. & D.

The next point to determine was the influence of bromide in the developer, and the results were:

Sulfinol, without bromide	34 H. & D.
Sulfinol, with 0.025% KBr	30 H. & D.
Sulfinol, with 0.05% KBr	22.6 H. & D.
Sulfinol, with 0.10% KBr	11.7 H. & D



THE COURTYARD, NEW ORLEANS
CHARLES H. BARNARD
Montross Gallery Exhibition

It is obvious from this that sulfinol, like hydrochinon, is very sensitive to the action of bromide. It also resembles hydrochinon in possessing a very high temperature coefficient; that is to say, the time which a developer takes to give a definite gamma, or degree of contrast, with a difference of temperature of 10° C (18° F). From investigations by Mees and Sheppard, the temperature coefficient for some developers is as follows:

Ferrous oxalate	1.7
Hydrochinon	2.8
Metol	1.25
Rodinal	1.50

For sulfinol I found the coefficient to be 3.2. This is a very serious matter, because, in practice, it means that, to obtain the same density, the duration of development would have to be multiplied by 3.2 for a drop of 10° in temperature, which is by no means unusual here.

The sulfinol-carbonate developer is, therefore, a slow-working, very clean developer, very sensitive to the action of bromide or to variation in temperature.

Now, as hydrochinon with a caustic alkali has distinctly different characteristics from those of a carbonate solution, it naturally occurred to me to try the effect of replacing the carbonate by caustic soda and using the above strength. 22.65 grams of NaOH were used. With this strength, however, the rapidity of development and the fog produced were so great that for the succeeding experiments an equal quantity of water was added, so that the final composition of the developer was:

Sodium sulphite	17.5 grams
Sodium hydrate	11.325 grams
Sulfinol	7.5 grams
Distilled water	1,000 cubic centimeters

and the efficiency, as compared with the carbonate developer, expressed as above, was:

Sulfinol-carbonate	95 H. & D.
Sulfinol-caustic	120 H. & D.

As regards the influence of bromide, the following gives the action:

Sulfinol-caustic, without bromide	34 H. & D.
Sulfinol-caustic, with 0.025% bromide	32.9 H. & D.
Sulfinol-caustic, with 0.05% bromide	29.6 H. & D.
Sulfinol-caustic, with 0.10% bromide	28.6 H. & D.

It is obvious that bromide has by no means such a strong action as with the carbonate. The temperature coefficient was also found to be 2.7, as against 3.2 with carbonate.

The sulfinol-caustic developer belongs, therefore, to the type of rapid developers, and it gives rather more fog than a normal metol-hydrochinon. For this last reason, another trial was made by reducing the caustic soda still further, and on the assumption that it would be sufficient to use enough NaOH to neutralize the SO_3H radical. Now, it is obvious from the molecular weights that 80 of NaOH would be required to do this, therefore 9.375 grams would be correct for 30 grams. Ten grams were taken, so that the final composition of the developer was:

Sodium sulphite	17.5 grams
Sodium hydrate	5 grams
Sulfinol	7.5 grams
Distilled water	1,000 cubic centimeters

The tests were carried out as before, and it was found that, although the temperature coefficient and the speed of the plate were the same, there was much less fog, as shown in the accompanying table:

	Time of appearance	Fog
Sulfinol-carbonate	25 seconds	0.07
Sulfinol-caustic (strong)	8 seconds	0.16
Sulfinol-caustic (weak)	12 seconds	0.086

The temperature of development was 65° F. and the duration such as to produce the same gamma in each case.

The developer made with caustic soda oxidizes to a dirty purple-brown color, reminding one

LOWER NEW YORK
KARL STRUSS
Montross Gallery Exhibition

of old permanganate of potash solution, but it finally turns deep red, still without any staining of the gelatine.

When used for bromide and development papers, the carbonate developer does not give a black, but a distinct greenish sepia — and this even without any bromide. In this respect I believe sulfinol is quite unique as a paper developer. With the caustic developer, warm blacks are obtained according to the dilution of the developer, with a constant content of bromide.

The peculiar color of the silver image on paper is duplicated to some degree with plates, for the deposit is not black, but a distinct brownish-black. This led me to examine this point more closely, and some negative strips were bleached in ferricyanide and bromide, and fixed, when a distinct and bright orange deposit was left behind. Now, Lumière and Seyewetz have proved that a negative image does not consist of pure metallic silver, but is a solid solution or compound of iodide of silver and metallic silver. Some strips were, therefore, treated with a strong solution of potassium cyanide for twenty-four hours but the colored residue did not dissolve, which rather points to its being an oxidation product of the developer.

ENLARGING WITH A MAGIC LANTERN

A. E. SWOYER

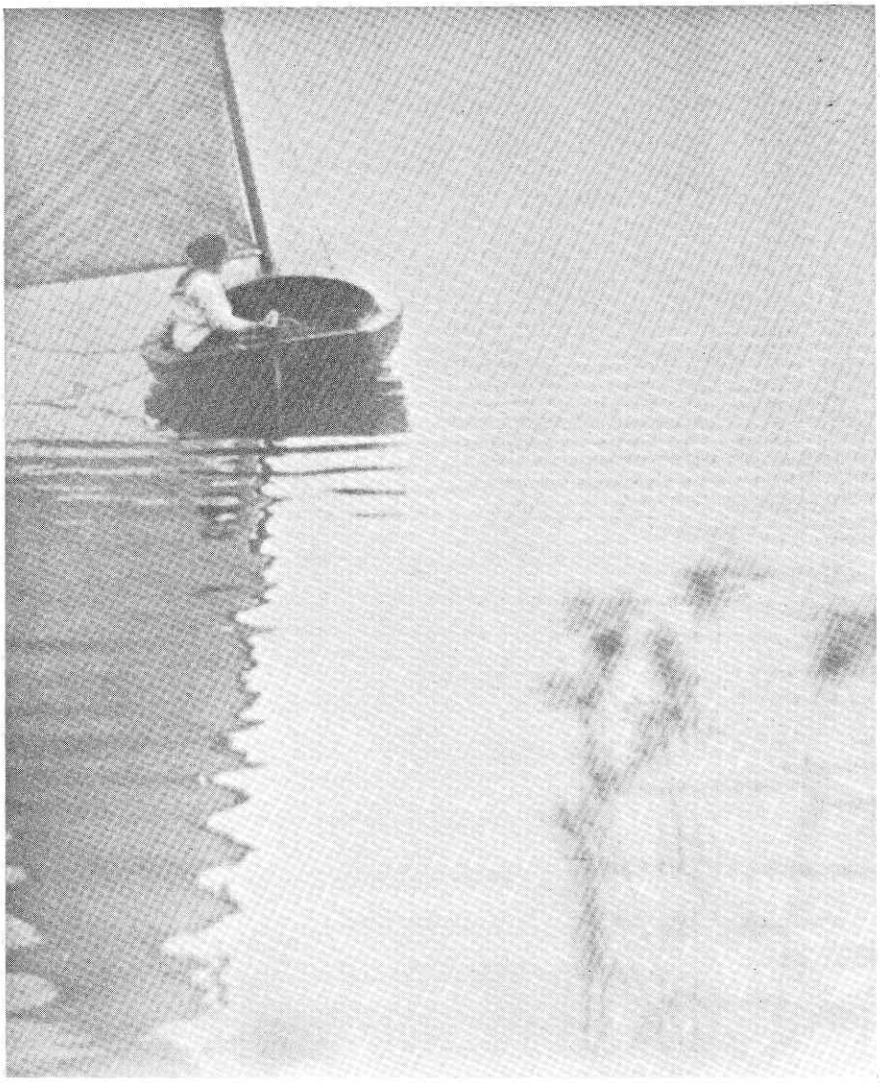
USERS of the tiny cameras with a high-grade lens equipment, such as the Goerz Vest Pocket Tenax, the Number 0 Graphic, the Anastigmat Ensignette, the Hall Pocket Camera, the Bloc-Notes or the Ernemann, can produce negatives of exquisite quality and with detail sufficient to stand an enlargement of many diameters. This may be readily understood when we consider the immense magnification of the tiny motion-picture film when thrown upon a screen for exhibition purposes; yet the lens used for this work is no better than the ones with which some of the instruments mentioned above are fitted. In some cases, in fact, they are identical.

The necessity for enlargement is plain, since a contact print from a negative of minute size has about the same interest and pictorial value as a postage stamp. The question then remains, "How is this to be accomplished?" It is true that the makers of these little cameras, in some cases, supply a specially designed enlarger, but the good ones are expensive and the cheaper types either admit of a very small magnification or are inefficient.

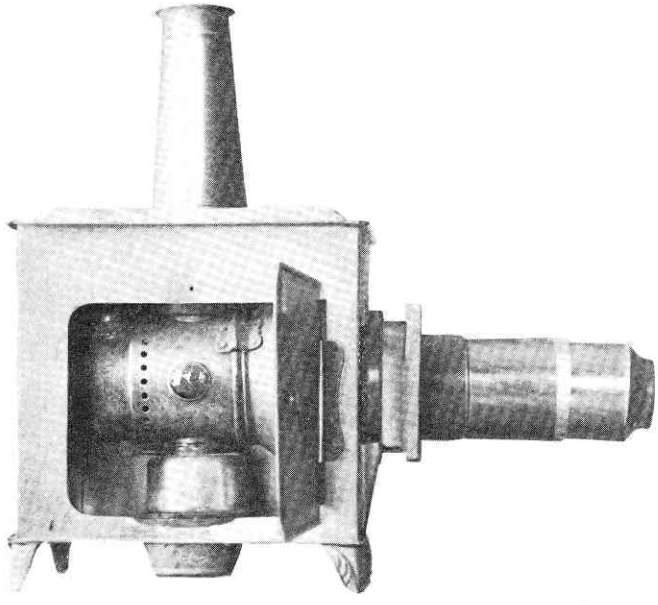
The ideal arrangement, of course, is one in which the fine lens with which the instrument is equipped may be utilized in enlarging; equally, of course, the light must be a powerful one if any considerable degree of magnification is to be attempted. Yet the commercial lanterns of the condenser type are high-priced, while those not using condensing lenses do not give sufficient illumination to meet the above conditions. The writer has found the solution in one of the small magic lanterns which were formerly so common that few indeed are the homes which have none, bundled away somewhere in the attic. If you have none and cannot borrow, any toy shop will supply you for a very few dollars.

A magic lantern of this type is supplied with a condensing lens — the principal item of cost in a high-grade outfit — but as it is only required to cover the small dimensions of a lanternslide, it may be of good quality and still not materially affect the price of the lantern. Otherwise a magic lantern is simply a little brother to the standard types of enlargers. And that is exactly the relationship which the small camera bears to the larger!

As might be suspected from the foregoing, the magic lantern is perfectly suitable as a means for enlarging from the small negatives, for if the condensers are large enough to cover the lantern-plate they will perform the same office for the negative; if the light is strong enough to throw a



BECALMED
AUGUSTUS THIBAUDEAU
Montross Gallery Exhibition

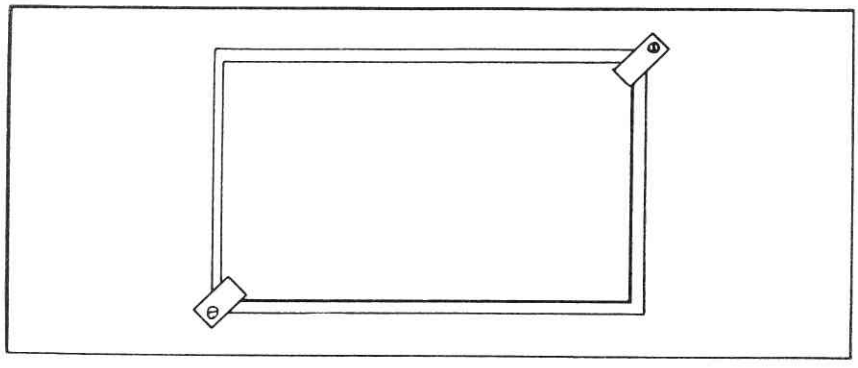


six-foot image with the one, it will without difficulty produce a good-sized enlargement from the other. Some alterations are, however, necessary for perfect working.

In the first place, an arrangement should be made by means of which the high-grade lens of the little camera may be substituted for that of the lantern, and this arrangement will vary with the type of camera. In general, it will be necessary to make a wooden platform of the proper height, with clamps to hold the camera, in order that the back may be removed from the latter so that it may be placed in the proper position against the opening from which the old lens was removed; this is a problem for the individual. If you prefer, you can use the original optical equipment of the lantern, although the results will not be so good; you will also find it necessary to increase the focal capacity by increasing the length of the lens tube.

If your lantern burns oil, you will probably wish to substitute a more powerful illuminant; this may be done with either gas, electricity, or acetylene. The lamp is removed, and the pipe or wires, as the case may be, led in through the opening in the bottom of the lantern; for this work you may have to get the help of a plumber or of an electrician. My own outfit, however, was made to burn acetylene by the substitution of an old bicycle lamp of that type, cutting away the bottom to fit the base of the latter and enlarging the doorway enough to admit it easily. The reflectors and bull's-eye lens of such a lamp magnify the light capacity greatly and make a serviceable outfit, independent of any outside supply; it is so light and small that it takes almost no room, and is, of course, easily portable. The only care necessary in rigging an outfit of this kind is to have the centers of condenser, lantern lens, and negative in a straight line.

A device to hold the negative is the final touch, and the simple scheme shown in the drawing is suggested. This consists of a strip of wood having the same dimension as the slides which the lantern was made to fit; if this is too thin, the metal guides may be bent or cut away. An opening



a trifle smaller than the negative is cut in the center of this piece, and a rebate cut in the edge, of sufficient depth to allow two glass plates to fit into it flush with the surface.

A GENTLEMAN FROM SOUTH AMERICA
MRS. J. E. BENNETT
Montross Gallery Exhibition

PHOTOGRAPHY THROUGH A MICROSCOPE FOR AMATEURS

DR. H. G. WEBB

SOME years ago the author decided, if it were possible, to try to take some photographs of common objects such as the fly's wing, or a small flea, and suchlike things, through the microscope. His success was good, but only after many experiments. Thinking that many other persons with a little of the experimenter's spirit might like to do the same, he ventures to set forth a faithful record of all his manipulations and apparatus.

In the first place, the greatest difficulty is the microscope. In order to get good pictures the would-be worker must be prepared to lay out some cash. The best microscope to secure is the kind used in the medical schools. They are always reliable, and can be picked up for about sixty dollars at a good second-hand shop which deals in these things for medicos. The microscope must have good objectives, preferably those made by a well-known maker. The powers of these should be ⅔ inch and ⅙ inch. The oculars should be Nos. 2 and 4. The substage condenser should be of the Abbé type, and in good condition. At the conclusion of the work, the novice can resell his instrument at a much better price if it is of standard make. The loss should not be more than ten dollars.

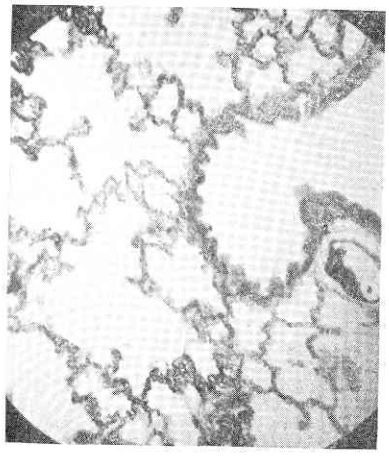
The next item is the camera. Any old make will do. The lens must be removed at once and a brass tube 4 inches long and 2 inches in bore put into its place. The camera should have also a rack-and-pinion adjustment and a good ground-glass focusing screen. A steady stand must now be provided. This consists of a long board of whitewood about an inch thick and just as wide as the base of the camera. Down the center of this board a slot is cut right through the thickness and about half an inch wide and a foot long. This is to enable the camera to move backwards and forwards when the usual screw is passed through the slot and almost tightened. When the position of the camera has been finally adjusted the screw is firmly tightened and the base of the camera is then fast.

The microscope is next arranged directly in front of the camera, with its tube in a horizontal position, and with the eyepiece nearest the extra brass tube just now referred to. If the height of the eyepiece is right the end will fit into the tube. It generally requires adjustment, and for this purpose measurements are taken and a block of wood of the right thickness prepared and screwed to the baseboard just in front of the end of the slot. When the adjustment is completed, the next step is to render the union light-tight. To do this a black cloth is tied round the tube and the end of the barrel of the microscope.

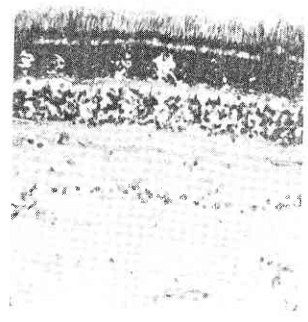
A source of light is now required. This is best found in an acetylene burner of motor-car size, fed by a separate generator. The burner is screwed into the end of a piece of brass tube and a bend is then made at such a spot that the middle of the flame will be at the center of the condenser of the microscope. The burner is then arranged at a distance of 6 inches from the microscope end.

Everything is now ready to make a start. On lighting the gas we find that there is a circle of light on the ground-glass screen. On moving the camera backwards and forwards we arrive at the place where the size of the circle is that of a lantern plate. The process of focusing is now to be proceeded with. For the details of this the reader is referred to any textbook on microscopy that is handy, or can be seen at the nearest public library. A good book is "The Microscope" by Carpenter and Dallinger. When the right-sized circle of light has been sharply focused on the screen, a small cover-glass is fixed on the frosted glass near the edge of the ring by means of Canada balsam, dissolved in xylol. This device enables the worker to focus the

FROM A CALIFORNIA HILLTOP
ALVIN LANGDON COBURN
Montross Gallery Exhibition



LUNG OF RABBIT



HUMAN RETINA
DR. H. G. WEBB

VILLI OF SMALL INTESTINE

picture much more sharply than can be done on the rough screen. The balsam and cover-glass make the "grain" of the picture much finer.

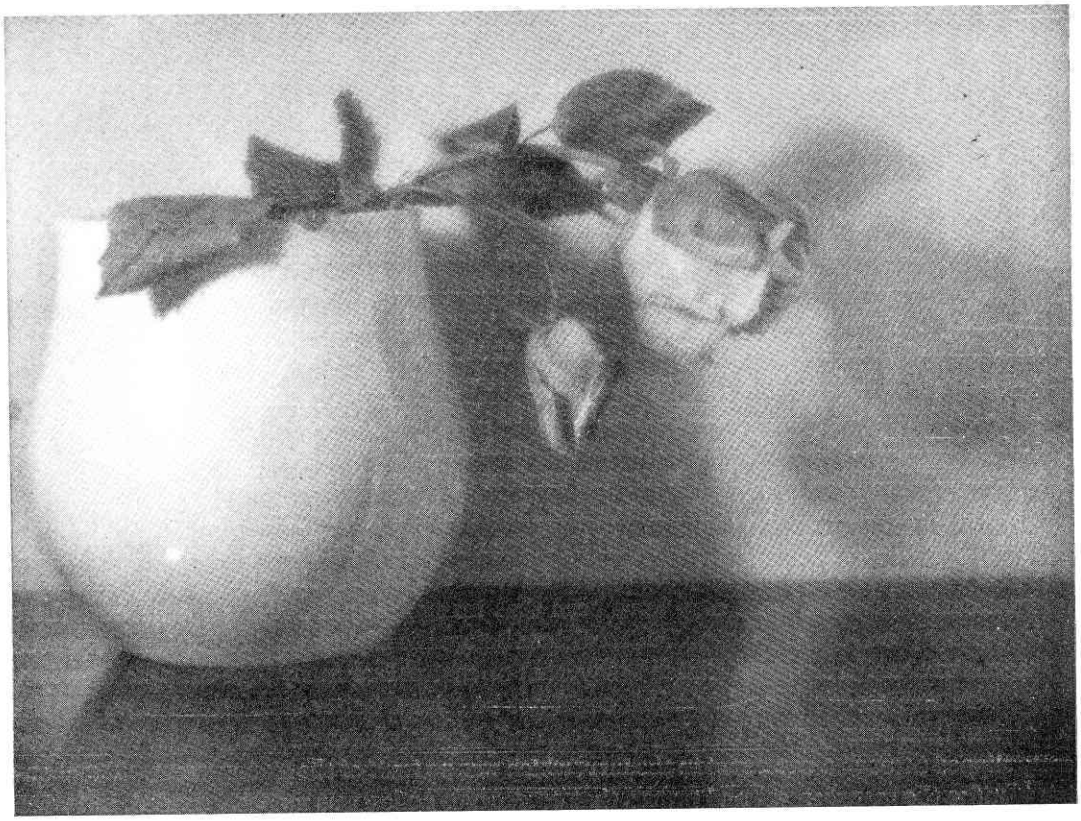
A micro-object is now placed in position on the stage and moved about until the right spot is found. Then it is clamped by the springs on the stage of the microscope. On looking at the screen a blurred picture is seen. This must be carefully focused by means of the coarse adjustment first and then by the fine adjustment and a focusing glass.

The color-filter is the next trouble. Generally speaking, the best result is obtained by using a yellow screen and one of the best makes of backed or double-coated orthochromatic plates. The filter is held between the flame and the condenser. Backing (or the double coating of emulsion) is absolutely necessary, because "halation" is more of a bugbear in this class of work than in any other. The exposure must be judged by trial in the first few cases, by exposing strips for periods of fifteen seconds to five minutes at a time, according to the magnification decided upon.

Development proceeds along normal lines, except that, if anything, the time is prolonged in order to secure detail. The film can subsequently be intensified in the ordinary way, if necessary. In photomicrographic work it is best to use a fixed developer at a standard temperature for a definite time. If the resulting negative is not perfect, expose another plate for a longer or a shorter time.

The magnification is determined accurately, and at once, by means of specially prepared slides. These show a millimeter carefully divided into tenths and hundredths. If put into the place of the object just photographed and the measurement of the size on the glass screen of a known division is made, a simple sum in arithmetic will soon give the magic figures x 500, etc., which we often see beside photographs taken in this way. By using the usual three-color screens we can secure admirable photographs in the real colors. We can arrive at the same result by using the special screen provided for our particular light and the autochrome or other screen color plates on the market.

The author has taken many hundreds of photographs in this way, and they have been used by professors in their books and lectures. One has found its way into the Proceedings of the Royal Society of London. The pastime is very amusing and instructive, besides being profitable. The author has written descriptions around some of his photographs and sold them to the magazines.



STILL LIFE
CHARLES B. DENNY
Montross Gallery Exhibition

THE NINTH AMERICAN SALON

R. L. SLEETH, JR.

THE Ninth American Photographic Salon opened to a large and appreciative gathering on Friday, November 1st, at the Galleries of the Carnegie Institute at Pittsburg. It very closely approaches the standard for which its founders hoped, its various groups of managers have striven, and which the American public expects in an exhibition which is open to all the pictorialists in the country.

The action of the management last year in sending out on the road an exhibition of less than one hundred frames seems to have met the hearty approval of the workers throughout the country, with the result that, though the judging was fully as severe as last year, the contributions were so superior that 156 frames were hung in the Ninth American Salon. Of these fully 140 are of the highest class, there being a few portraits and figure pictures which do not hold their own in an artistic sense with the landscapes, marines and decorations.

Let the fact sink well into your mind that of 156 pictures hung, there are at least 140 on which all will agree that no particular one could be chosen as falling sufficiently below the standard surely to be classed as unworthy to be hung. In some few of the early Salons, when it was an international exhibition, there may have been that many good pictures. In none were there ever so many good American ones. All the Salons before the Eighth would have been improved if reduced one half in numbers, that is to say, that no matter how many high-class pictures were hung there was an equal number which could not be classed better than second rate. In the Ninth less than twenty could be fairly rejected, and these few being all in one class, very apparently slipped through a weak spot in the jury, which was no fault of the management. The showing justifies the management and proves that courageous action was not only needed, but when forthcoming met with appreciation and coöperation. If the policy of discrimination is maintained, there is no doubt as to the future success of the exhibition.

Whether it is that there are at present few organizations capable of gathering together a good collection of pictures from year to year, or that they do not seek organization recognition, the fact remains that the Salon is chiefly made up of contributions from individual workers, there being but four clubs which exhibit as such. Of these Toledo and Pittsburg run a neck-and-neck race for first place. For Toledo, John F. Jones and W. A. Ward are the leaders of a group of ten contributors, who are represented with twenty-two pictures. The collection is a good one and the club has just cause to be proud of it. The work of one or two of the contributors, however, falls considerably below the high standard set by the leaders. Strange to say, insofar as the number of pictures accepted are concerned, the record of the Pittsburg Camera Club is almost identical with that of its Toledo rival. For Toledo, Jones and Ward together contribute ten pictures, and their eight clubmates combined but twelve. For Pittsburg, Wm. H. Phillips and R. L. Sleeth, Jr., contribute ten, and nine clubmates ten more, making a total of twenty. In quality of work, however, some of the lesser contributors push the leaders hard for honors and the entire exhibit is more uniform than that of Toledo.

The other two clubs receiving organization recognition are Portland (Maine) and Wilkes-Barre. The work of the Portland contributors is uniformly good. They are particularly strong on winter landscapes. J. R. Peterson is perhaps the strongest, his "Storm" being almost in a class by itself as a marine. For Wilkes-Barre, strange to say, the two men who contribute the best work also are represented with the poorest. These men are Will D. Brodhum, whose "Springtime" and "The Passing of a Season and a Day" are full of sentiment and fine portrayals of poetic moods of nature, but whose "Nan" is a commonplace portrait; and Wm. H. Evans, who

WHERE THE DEAD LEAF FELL
EDWIN LOKER
Ninth American Salon

entirely original arrangement, in which the Brooklyn bridge appears without dominating the picture. Mr. Robertson is to be congratulated.

There are many other good things which would be worthy of comment. In fact nearly everything in the Exhibition is good. In the parlance of the stage, the show "made a hit" on the opening night at Pittsburg. Its itinerary for the past few years has been confined pretty much to the section of the country which lies between the Allegheny Mountains and the Mississippi River. It is to be hoped that some of the organizations in other parts of the country will this year be progressive enough to widen the scope of its undoubtedly beneficial influence.

GASLIGHT PAPERS

CHARLES T. MALONEY

DURING the past dozen years modern photography has practically supplanted the old sun-printing papers with the so-called gaslight papers. The constant demand for the easiest way has made it a good business proposition for the manufacturer to produce this medium for picture making, which would allow the non-professional to pursue the art of photography in his leisure hours; and the present-day army of amateur photographers would be relatively small were it not for the simplicity and adaptability of gaslight paper. In consequence of being able to produce results by artificial light, the amateur is not dependent upon the eccentricities of daylight, as was the professional formerly. He can spend his off-hours in the field with his camera, and then at home can enjoy many pleasant evenings making prints.

In discussing gaslight papers it will be assumed that the reader has a working knowledge of the camera, the various parts and their uses — as well as their abuse. The proper way to start making a print is to have the right kind of negative. This is essential, for, as in the case of a building, the foundation must, of necessity, be the best. Without this prime requisite, the superimposed structure, no matter what the materials, will be a failure.

The governing principle in obtaining desirable negatives is correct exposure. This fact must constantly be borne in mind, for any plate or film can only be made to yield in the developer what has been impressed upon it during exposure. Therefore, all other things being equal, a negative will be just as good as the exposure is correct.

But what is to be considered the proper negative? This depends entirely upon the results which one desires to produce in the finished product, and with serious workers their number is almost without limit. For the average practical worker the type of negative which is most desirable is that which has plenty of detail in the shadows and at the same time is not too dense in the highlights. The general tendency seems to incline toward overdevelopment, with its resultant overdense negatives. Soft, crisp negatives are too often disregarded in favor of hard, contrasty ones. The correct idea, for average purposes, is not to aim at a negative ranging from clear glass to positive opaqueness, but to seek one well within these limits on both sides of the scale.

Having selected a satisfactory negative, the next thing is the question of making a good picture. First of all, suitable trays must be procured, one for the developer, one for washing, and one for fixing the print. Lastly, an extra large dish, or washing tray, for the completed picture. I have found the composition trays on the market very satisfactory, and they should be selected large enough to give plenty of room for the size print being developed. For the washing tray, before the print goes into the hypo, a somewhat larger tray should be used, so as to allow freedom of motion. The size of the hypo dish, or tray, is governed entirely by the number of prints which will be made in any batch.

JUNE
MARIE E. JENKINS ALLEN
Ninth American Salon

A SPRING AFTERNOON — R. S. KAUFFMAN

Ninth American Salon

For the final washing of the finished photograph a very large dish of considerable depth is necessary, to insure proper circulation of the prints and to prevent them from matting, or sticking together.

The next point to consider is the light by means of which the printing is done. As convenient an arrangement as possible should be selected, but I have found that an ordinary gas jet outside and near the darkroom is very satisfactory. By means of such a light the darkroom door may be left open during development, and the direct rays cannot fall upon the print, and at the same time there is sufficient light to work. The advantage of such an arrangement is that one always has his materials in the same place — which fact saves much carrying of trays and chemicals from one room to another. Everything is ready to begin work and everything can be easily kept in its place. This having a system is productive of cleanliness, which is an absolute necessity in photography.

To make the required exposure, one simply steps to the light for a few seconds and then back to do the developing. Of course, printing by artificial light is not an absolute necessity, for it can also be done by daylight — not direct sunlight; but the variations in the strength of the light are so great that this means of printing is not generally recommended.

The chemicals used in photography should also be given much consideration; but, as the average beginner uses the prepared articles, he must depend upon the honesty of his dealer to furnish him with reliable goods. Any of the developers compounded by responsible firms can be depended upon, and in all probability the one most sold is M.-Q., or metol-hydrochinon. The only thing for the beginner to guard against is the using of too strong a solution. By so doing the print develops so fast as to be beyond control. The solution should be made somewhat more diluted than directions call for, as in this way fewer failures are liable to result. The print can then be watched more closely, as it will develop slower.

ARCADIA W. A. WARD

Ninth American Salon

The M.-Q. solution as a developer keeps well and can be used repeatedly until exhausted. Equal, if not superior, is the E.-Q. (edinol-hydrochinon). The advantages of this developer are that it works somewhat slower, allowing time to control the print, and it seldom requires addition of bromide, which the M.-Q. usually does. Consequently, there is an absence of mottled prints from its use. It keeps just as well, and even when almost exhausted will yield as good results as when first made up.

Although these remarks are intended for the beginner, it is recommended that the more advanced worker compound his own developer, for the sake of economy as well as the unlimitable possibilities of adaption. Special results can thus be easily attained, while, on the other hand, one can prepare a formula which is more suited to one's own needs and individuality. In like manner, the acid hypo, which can be bought on the market, will answer all purposes satisfactorily and is to be recommended instead of plain hypo. On the other hand, this same preparation can also be made at home much cheaper than it can be bought.

Hypo should not be used too long, because, when using it for prints exclusively, it may become exhausted before one is aware of the fact, which introduces the possibility of producing stained prints which lack permanency.

In selecting the paper itself, it is not obligatory to choose the most expensive kinds.

Too many amateurs use hard or contrasty papers, when much better results can be obtained from a medium grade. In this respect I would suggest that such developing papers as Cyko Normal and Defender Triple A be tried, as they seem to run well between the soft, or special, and the hard or contrast grades. For general all-around work they will respond to any kind of negative to a nicety; and, rather than have a large collection of papers, it is far more economical to endeavor to produce negatives of a uniform class and use medium papers. This saves tying up money in different grades of paper, and at the same time teaches one to manipulate a given paper to greater satisfaction.

THE ROOF — H. KREBS

Ninth American Salon

Having the necessary materials on hand, the next step is to proceed with the making of the print itself. Place the negative in the frame, film side up, and place the sensitized paper with the emulsion side in contact. This loading of the printing frame should not be done in the direct rays of the printing light, otherwise the paper will be acted upon. In determining which side of the paper to place next the negative, be governed by the curling of the same. The emulsion side is generally the inside of the curl — however slight it may be — and this is the side to place in contact with the negative.

The frame being properly loaded and ready to expose, the question of how long to hold to the light arises. First of all, it must be said that the printing frame should be held about its diagonal length from the light during the exposure and in a direct line of the rays in order to insure a uniform exposure.

It has been frequently recommended that narrow strips of developing paper be cut and tried out on the negative before exposing the print proper, but I have found it far better to sacrifice one sheet of paper first, for by this means one is able to tell whether sufficient exposure has been given the entire plate.

In making a trial exposure, when using an average negative, it is well to give a first exposure of ten seconds; and then, after developing, it can be quickly seen whether you want the picture twice as strong or half as strong; and in this way, by increasing or decreasing the original exposure, the resultant prints can be made satisfactory.

By following this method the exposure can be easily determined to the exact second, and once the correct exposure has been found for any given negative, subsequent ones are more readily ascertained.

Knowing what the exposure is for the first negative, take the second one and compare the two, making a few mental notes as to their relative appearance with regard to density.

THE WEAVER — L. M. A. ROY

Ninth American Salon

Perhaps the second one is a trifle darker, or it may be thinner. In either case, increase or decrease the exposure in accordance with how much difference you think there is. The finished result depends entirely upon the exposure, so that a little extra time and thought put into this matter by the beginner will never be regretted.

Having made the exposure, take the printing frame to where you will develop and open it up. Take the paper out by the edges very carefully, not allowing the fingers to come into contact with the emulsion side. There is not any visible image on the paper as yet; but the silver, having been acted upon by the light, awaits the developer to bring the picture out.

Have your developing solution in a graduate, or tumbler, and, placing the paper in the tray face up, pour the developer over it with one sweep, making sure to cover all parts of the paper. This method of pouring the solution over the print is far superior to sliding it into the tray already containing the developer, because it reduces the liability of air bells.

Now watch the paper very closely. The image should appear in a very few seconds and be entirely developed in about a minute. If it does not appear readily, you will know at once that you have not given sufficient exposure; while, on the other hand, if it flashes up instantly and darkens all over, it is evident that the exposure has been too long. If the solution used in developing is fresh, it will have to be watched more closely; for it works much faster than those which have been used, and this is the reason for diluting.

Developing papers cannot be forced; that is, it does no good to allow them to remain in the solution a long time hoping for the picture to come out, as nothing will result from such practice but a dirty, mottled effect. If a print is underexposed and does not come along in

reasonable time, better discard it at once and try another, giving more exposure. If you have not the results desired at the end of a minute, you can rest assured that you have not given long enough exposure. The success or failure of your print is determined by the exposure.

While the paper is in the developing solution the tray should be constantly agitated, otherwise an uneven development will take place and spoil the picture.

It must be remembered that as one is not developing in strong light one does not see the photograph the same as one will when finished; consequently it should be carried just a trifle darker than one would think correct, because, when it will be viewed under bright light, it must have sufficient density to offset this light.

Particular care must be exercised in handling the print during development, because at this stage the emulsion is considerably softened up and susceptible to abrasion. When necessary to handle the print, take hold by the edges very lightly.

When the picture has reached the proper stage, take it out of the developer and rinse it quickly in the wash water and place it in the hypo. Instead of using plain water to wash the print prior to placing it in the hypo, it is much better to add a little commercial acetic acid (No. 8, or twenty-five per cent solution), which instantly arrests development and also aids in keeping the hypo acidified. About an ounce to a quart of water is sufficient.

When placing the print in the hypo be sure to agitate it a little, using a glass rod for the purpose, to prevent uneven fixing, which results in yellow stains. The hands must not be allowed to come into contact with the hypo during development, for if the hypo or acetic acid is carried to the developing solution it will spoil.

Prints should be left in the hypo at least fifteen minutes, during which time they should be frequently moved about and not allowed to stick together. If one is making several pictures at a time, it is a good plan to place the first one in the hypo and then proceed to make another one. Each time a new one is added, stir them all up well. When the batch has been finished you can then time fifteen minutes from the last one placed.

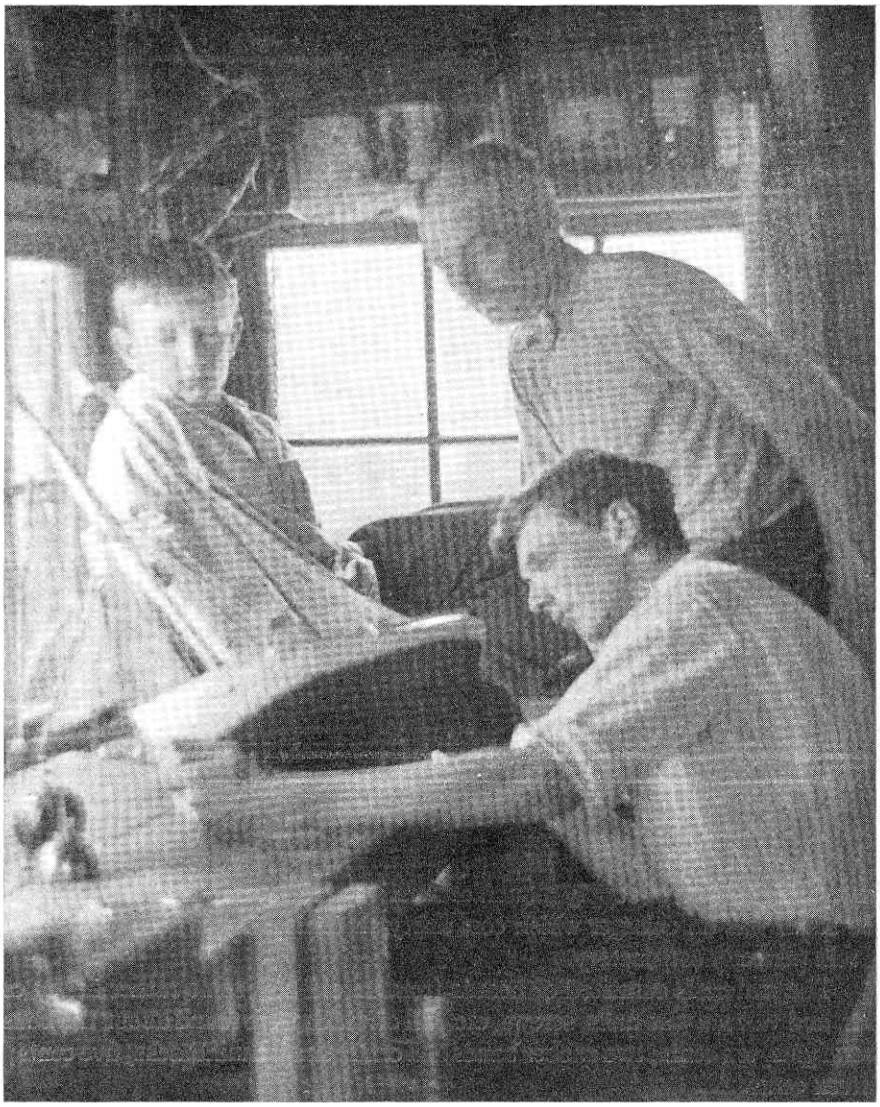
When the prints have finished fixing in the hypo take them out and give each one a thorough washing off under the faucet. This takes off the surplus hypo, whereupon they can all be placed together in a large dish and the water allowed to run on them. It must not strike them strongly, or blisters are liable to result; but should run in a gentle stream, yet in a manner which will not allow them to get all stuck together. By this means a half-hour's washing is quite sufficient, removing (by actual test) all traces of hypo. On the other hand, if, by insufficient washing, all the hypo is not removed, the pictures will fade in time.

After washing, the final step is to dry the prints in a reasonable time. Remove the prints from the water and blot off the surplus, using lintless blotters for the purpose, and then lay the pictures face down on a clean white sheet. This will prevent undue curling.

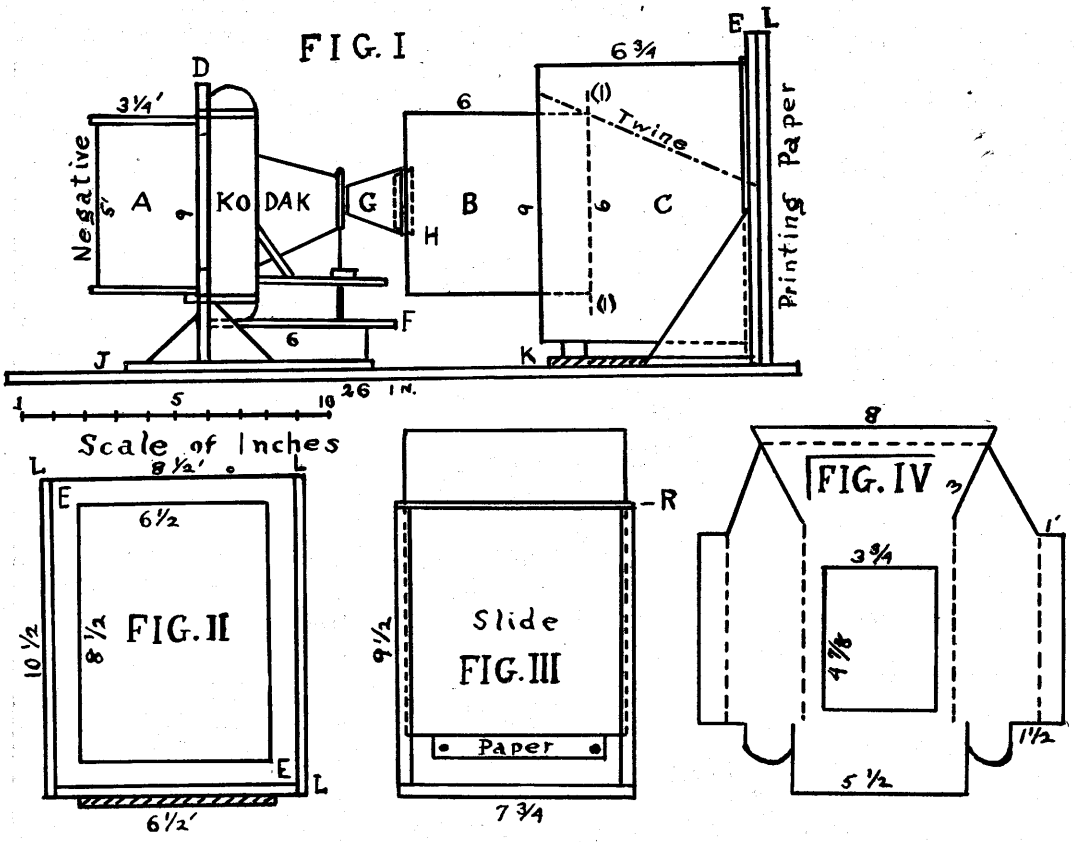
A CONVENIENT PORTABLE ENLARGER

E. C. PIERCE

AFTER I had been taking photographs off and on for about a year, I arrived at the stage where the small 3¼ x 4¼ pictures which my camera made seemed inadequate, and I wanted to enlarge the best of the negatives. At this time I could develop and print, using solutions of my own mixing, with fair success. An enlarging camera seemed quite too costly to one who was interested in the work merely as an amusement, and I resolved to devise a simple portable enlarger to use with gaslight papers. Incidentally, it may encourage some beginner to know that my photographic education has been confined *entirely* to the careful reading of the several excellent magazines and the



THE BOAT BUILDERS
IMOGEN CUNNINGHAM



advertising folders of supply manufacturers. I read several articles on enlarging methods, and the result was an enlarger which cost thirty-six cents. It has been used hundreds of times and is still perfectly satisfactory.

The materials consisted of boards from an old box, some rather heavy cardboard, a cigar box, and various wire nails, screws, etc., all of which were found about the house. The expenses were: glue, ten cents; two rubber bands, six cents; small thumbtacks, five cents; cherry Jap-a-lac, fifteen cents.

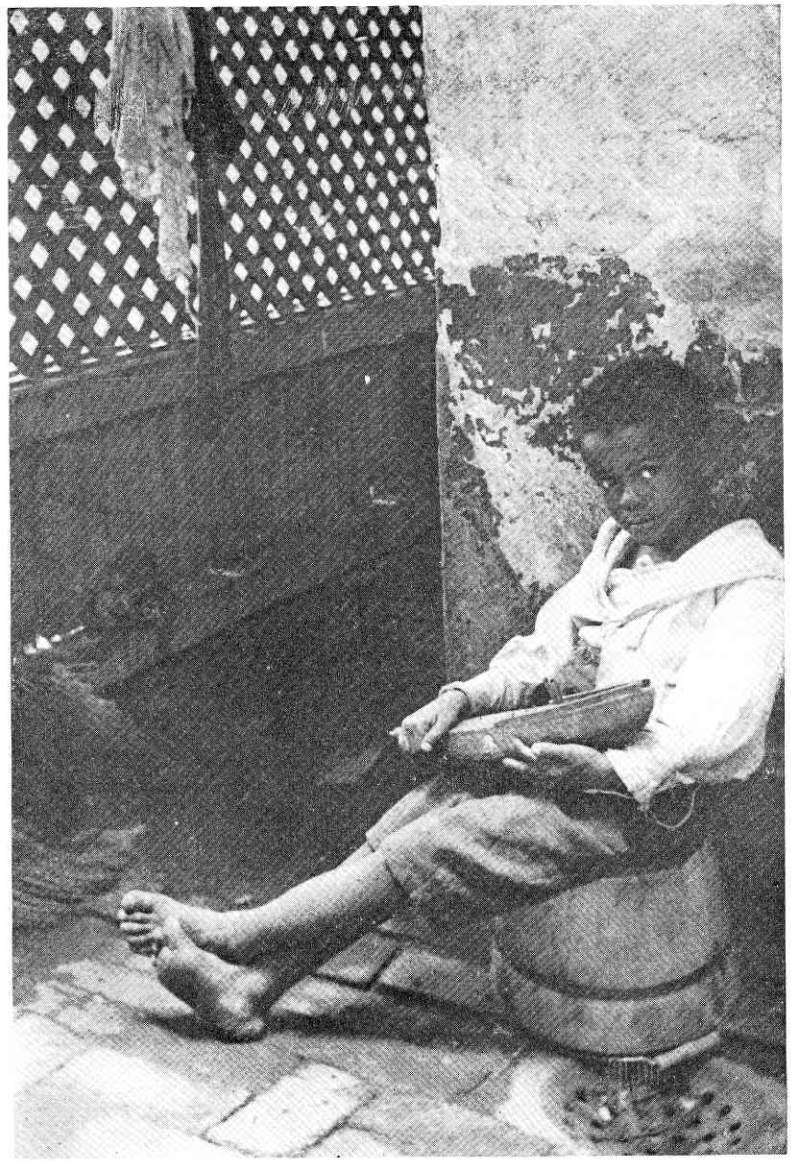
The idea which underlies the enlarger is this: The process of taking the picture is reversed. In other words, the negative is placed at the open back of the camera, the light passes through the negative and through the lens, projecting an enlarged positive image upon the printing paper. The apparatus is merely for the purpose of keeping *all* light from entering the spaces between negative and camera, and camera and printing paper. It also furnishes a means of regulating the size of the enlargement by altering the relative positions of lens and negative.

The following paragraphs with the various diagrams show the details of construction.

Figure 1. Baseboard 26 x 6½ inches and 3-8 inch thick.

A, negative-holder, made of cigar-box wood, 3¼ x 5 x 4, made to take at the open end two pieces of 4 x 5 glass, which hold the film between them. The pieces of glass are bound together at one side with passe-partout binding.

D (9 x 6½) has opening cut (3½ x 4½) opposite box A. This opening must fit exactly the back of the camera, which rests upon F (6 x 4). Two wide rubber bands hold the camera firmly to D.



HIS ONLY TOY
A. F. SNYDER
First Prize, November Competition

J (8 x 6½) may be moved along the baseboard as needed, and held in place by screws; by this the size of the enlargement is regulated and the sharpness of focus also.

B and C, cardboard boxes, B telescoping into C. These must be carefully constructed by glueing the cardboard sides together with ⅛-inch strips of cigar-box wood to strengthen them at all inside angles and edges. The outside edges are covered with strips of black paper to keep out the light. These boxes must be accurately made and the glueing done a piece at a time, allowing each part to dry thoroughly before joining the whole box together. B measures 6¾ x 9 x 7¼; C, 6 x 6 x 5. B fits snugly into the opening in C. On the edges of B that are inside C, glue 1 inch wide strips of black paper to keep the light from striking the printing paper at E.

G, cone-shaped cardboard cap to fit closely over the lens and also over H. The cone and H are black on the inside.

H, also of cardboard, glued into circular opening in the center of box B.

C is fastened to E by twine and has thin strips of wood fitted closely where it joins E.

E (8½ x 10½), with opening (6½ x 8½).

K (8½ x 7), projecting over the width of the baseboard, screwed fast to it (see Figure 2).

L — L, ½-inch strips nailed to E to hold the paper holder in place (Figure 2).

Figure III. Printing paper holder (9½ x 7¾), made of board (7⅛ x 9⅛), with grooved side pieces to take the cardboard slide.

R is of cardboard, with a narrow slit to admit the slide. The holder is covered with brown paper, first covering any cracks with black paper.

The printing paper is fastened in with small thumbtacks. The grooves must be far enough from the back of the holder so that the slide will clear the tacks. The holder is fastened to E with a piece of leather or tape, making it an easy matter to remove the holder before and after the exposure is made.

Figure IV. Pattern for thin cardboard case to fit over the camera, and D to prevent light from entering where they join. Fold on the dotted lines and cut on the solid lines. This case is not a necessity, as a dark focusing cloth wrapped about the apparatus will answer nearly as well.

My enlarger is finished with two coats of cherry Jap-a-lac, which give it a presentable appearance.

Directions for Use. — Place the negative between the two pieces of glass at A (Figure 1), with the film side toward the camera. It is necessary to have a black paper mask fastened between the glasses, to exclude all light except what passes through the film. Tilt the enlarger with the negative end up on a window sill and focus, with the shutter wide open, upon a piece of ground glass or paraffine paper held where the printing paper will come. The window used must give an uninterrupted sky view to insure even printing.

To make a two-times enlargement, the negative should be 7 inches from the lens (mine is of 5-inch focal length), and the printing paper 14 inches from the lens. The distances vary for various lenses, and one should consult a table for enlargements, which is generally given at the end of any good book on photography.

After focusing, close the shutter and change the stop to U. S. 8 or 16, then place the printing paper (in a darkened room) in the holder, fastening it in with thumbtacks. Place the holder in position and remove the slide. Throw a dark cloth over the apparatus and make the required exposure. The average exposure with Normal Cyko, stop 16, is about two minutes. Velox requires a longer time.

This apparatus is intended for use with a No. 3 Folding Pocket Kodak with Goerz lens, but a folding camera of any size might be used in the same manner, providing that the enlarger was made to correspond in size. A print 6½ x 8½ is the largest that this enlarger will make.

IN THE ASHPIT
SAM AVERY
Second Prize, November Competition

MAKING A FOLDING POCKET LENSHOOD

RICHARD F. SNAITH

HAVING a great many pictures to take out of doors — in fact, the majority of my work is out-of-door work — and having to make exposures under all conditions, against the light as well as with it, I got tired of using my hat or the plateholder slide to shade my lens while working against the sun; so I procured a piece of cardboard 11 x 8½ inches. The cardboard was not heavy — about 1-32 inch thick and flexible, so it stands a great deal of bending without breaking. The strips which are used in packing plates are about the right kind of material for this. I made a pattern, as in Fig. 1, and marked from that the piece 11 x 8½, as in Fig. 2. I then cut out Fig. 2 on the outside lines. On the dotted lines I folded it by laying a ruler on the cardboard and bending the board up right angles against the ruler. Bend on all dotted lines the same way. Next fold it up, and you will have a square form 3 inches square at the large end and 1⅔ inches at the small end. After it is folded in position, take four paper clips to hold it in place, using two on each end, making the corners lap. Next, take some of the same material and cut into strips. The width depends on the length of your front lens. In my case I made them ½ inch wide. Use enough of it to build up a circle around your lens about 3-32 inch thick. Glue the layers together and you have a circle which just fits the lens. Care should be taken not to get it too tight, but just so it slips nicely into the small end of the square. This circle is fastened into the small end of the square with two more paper clips. You now have a lenshood which you can put together in a minute and take down and put away in the pocket or in the camera case. It is a good thing to give it a coat of dead-black paint — liquid shoe blacking or drawing ink will do. Be careful not to use a cardboard that has a high finish, as it has a tendency to reflect light into the lens. The dimensions of this hood can be varied to suit your requirements. This was made for a lens 1¾ inches in diameter and about a 60° angle. If a wider angle is used, you will have to give the square more flare at the large end and make it longer in proportion. By tipping this hood down a little on the lens, it will also work as an emergency vignetter.