

1943

An investigation of the use of photography in the public high schools of three hundred enrollment or larger in the midwest

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AN INVESTIGATION OF THE USE OF PHOTOGRAPHY IN THE PUBLIC
HIGH SCHOOLS OF THREE HUNDRED ENROLLMENT OR LARGER
IN THE MIDWEST

A Thesis
Presented to
the Faculty of the Department of Education
Indiana State Teachers College

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts in Education

by
H. Milton Crooke

May 1943

The thesis of H. Milton Crooke,
Contribution of the Graduate School, Indiana State
Teachers College, Number 501, under the title An
Investigation of the use of Photography in the Pub-
lic High Schools of Three Hundred Enrollment or
Larger in the Midwest

is hereby approved as counting toward the completion
of the Master's degree in the amount of 4 hours'
credit.

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TABLE OF CONTENTS

CHAPTER	PAGE
I. THE PROBLEM AND DEFINITIONS OF TERMS USED . . .	1
The problem	1
Statement of the problem	1
Importance of the study	2
Definitions of terms used	4
Forms of photography	4
Processes of photography	4
Study of art	5
Art	5
Composition	5
Principles of art	5
Art appreciation	5
Extra-curricular activities	6
Photographic activities	6
Organization of remainder of the thesis . . .	6
II. SOURCES AND FINDINGS OF DATA	7
Primary sources of data	7
Secondary sources of data	9
Findings of data	9
Information gathered from answers to question 1	9
Information gathered from answers to question 2	11

Information gathered from answers to question 3	13
Information gathered from answers to question 4	17
Information gathered from answers to question 5	18
Secondary sources of data	26
Articles written on various methods of combining art and photography . . .	26
Information gathered on the making of slides	28
Information gathered on ready-made slides	30
Information gathered on films for use in art studies	33
Information gathered on projectors, both slide and film	34
Information gathered on processing material for films and prints	36
Information gathered on cameras and film	36
III. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS . . .	39
Primary sources of data	39
Secondary sources of data	44

Conclusions	45
Recommendations	50
BIBLIOGRAPHY	54
APPENDIX	58

LIST OF TABLES

TABLE	PAGE
I. NUMBER OF QUESTIONNAIRES SENT AND NUMBER OF QUESTIONNAIRES RETURNED	7
II. SCHOOLS USING PHOTOGRAPHY AND FORMS OF USE	10
III. USES, TOTALS AND PERCENTAGES OF USES OF REPRODUCTIONS BY STATES	12
IV. SPONSORSHIP OF CAMERA CLUBS BY STATES, AND TOTALS	14
V. USES OF ACTIVITIES AND NUMBER AND PER CENTS OF TEACHERS SUGGESTING USES	16

CHAPTER I

THE PROBLEM AND DEFINITIONS OF TERMS USED

Photography has been increasing in popularity during the last few years, both as a hobby and as a vocation. With this increase in popularity have come the questions: "Can photography be used in the study of art?" and, "Is photography art?" So far there have been opinions expressed both pro and con on both questions, but no surveys or investigations have been made to substantiate the claims of the persons expressing the opinions. No evidence, in the scholastic field, has been presented to support the contentions of either side.

Another question arises in connection with the first question above: "Can photography aid in the study of art in the public schools? If so, how?" This question is one that will have to be answered sometime in the near future and this study has set up to endeavor to shed some light on the subject above and to provide some facts in answer to the questions arising in relation to the subject.

Statement of the problem. It is the specific purpose of this investigation and study to determine (1) how many high schools of an enrollment of three hundred or larger, in the Midwest, already use some form of photography in the study of art; (2) how many schools of that size use

the processes of photography in the study of art; (3) how many high schools of that size already have photography, or camera clubs in their extra-curricular programs; (4) how many high schools of that size would use the processes of photography in the study of art; (5) what photography can do to aid in the study of art; and (6) teacher attitudes with regard to photography as an art and as a part of art courses in the high schools. All this will be revealed through a questionnaire study.

The difference between "forms of photography" and "processes of photography" as used in steps 1 and 2 in the above paragraph will be explained in the definitions.

Importance of the study. Photography has been in existence since the early years of the sixteenth century, when Leonardo da Vinci drew the first working diagram of a camera and explained how to operate it. Since that time various men, notably Daniella Barbaro, Johann Kepler, Mande Daguerre, Nicephore Niepce, and George Eastman have made important contributions to the refinement of the camera and photography. Such men as David Octavius Hill, Alfred Stieglitz, the grand old man of photography, Leopold Godowsky, Leopold Mannes, and Douglas F. Winnek, to name a few, have given much to the artistic aspects of photography until, at the present time there is in photography much activity, ex-

tensive equipment (expensive or inexpensive, according to the choice of the user), and opportunity for artistic expression by the average person who has neither the ability nor the inclination to become an artist with the brush and palette.

In spite of the importance of photography in the scheme of living today; in a practical sense little has been done to acquaint the general public with artistic photography. However, there are a few instances where an attempt is made to give photography its full credit as an artistic medium:

In the mellowness of its second century photography has been recognized. The Brooklyn Museum has just set up the first permanent photography salon to be established in a U. S. museum, and has issued an official statement that "This activity recognized photography as an art form."¹

A painting, sculpture, or photograph is a work of art if made by an original, creative person.²

The well-known artist, Tom Webb, in a recent magazine article, says:

I feel that the camera is not a mere mechanical instrument. It is a bridge to help us span the way to

¹Anonymous, "Photography Becomes an Art," Minicam Photography, V, 2 (October, 1941) 37.

²Loc. cit.

poetry, drama, and portraiture. We have not begun to scratch the surface of its possibilities.³

Harold Rugg, in a discussion on Alfred Stieglitz

says:

By his portraits Stieglitz showed that a physical instrument, in the hands of an artist, could cut through the infinite details of the surface of human life and civilization and portray its heart. His photographs revealed the same fourth-dimensional quality that was revealed by the creative painters, sculptors, musicians and literary men.⁴

DEFINITIONS OF TERMS USED

Forms of photography. "Forms of photography" was interpreted as meaning the products of photographic activities, these activities being indulged in by either the students, teachers, or photographic processing companies.

Processes of photography. "Processes of photography" was interpreted as meaning the composition, lighting, taking of the picture set-up, development of the film, and printing and enlarging of the resulting negative to obtain an artistic picture. In some instances in this investigation and study, this term will be called "photography."

³Tom Webb, "Snap Men as They Are," Popular Photography, V, 4 (October, 1939) 25.

⁴Harold Rugg, Culture and Education in America, (New York: Harcourt, Brace and Company, 1931) 301.

Study of art. Throughout the report of this investigation the term "study of art" will be interpreted as meaning the procedures used in the teaching and study of art in the art classes of the schools to which questionnaires were sent.

Art. The term "art" will be interpreted as meaning that which satisfies taste or sense of beauty and will include drawing, painting, sketching, shading, tinting, or sculpturing any form or article to gratify that taste or sense of beauty.

Composition. "Composition" will be interpreted as meaning the arrangement of the various objects to be photographed or reproduced in the art classes in the various ways described in the preceding definition. This arrangement of objects in the photograph can be made by arranging the objects themselves, or by shifting the camera to obtain a different point of view of the objects.

Principles of art. In this report "principles of art" will be interpreted as meaning the plan of the picture, its composition or arrangement, rhythm or line movements, pattern or light and shade, balance of objects, and color harmony.

Art appreciation. "Art appreciation" will be in-

terpreted as meaning the study of accepted artistic masterpieces or reproductions of them, to teach the students the basic principles of art.

Extra-curricular activities. In this report the term "extra-curricular activities" will be interpreted to mean those activities taking place in the schools which are outside the regular curricula of the schools and shall include, specifically, school publication work and club work.

Photographic activities. This term will be interpreted as meaning the activities relative to processing of pictures as defined in the definition of photography. These activities will include all actions leading up to and away from the actual processing of the pictures such as research work, costume making, selection of subject, or model, inspection and criticism of the picture.

ORGANIZATION OF REMAINDER OF THE THESIS

The remainder of this study is divided into two chapters. Chapter II reveals the sources and findings of the data, both primary and secondary. Chapter III contains the review, conclusions, and summary. These units cover the data collected.

CHAPTER II

SOURCES AND FINDINGS OF DATA

Primary sources of data. The primary sources of data for this investigation are the returns on a questionnaire sent art teachers in high schools having an enrollment of three hundred or more in the states of Indiana, Wisconsin, Ohio, Iowa, Kentucky, Illinois, and Michigan, and letters sent to teachers of photography in the Chicago evening schools. Of the 580 questionnaires sent 227, or 39 per cent, were returned.

TABLE I

NUMBER OF QUESTIONNAIRES SENT AND
NUMBER AND PERCENTAGES OF QUESTIONNAIRES RETURNED

STATE	TOTAL NUMBER SENT	TOTAL NUMBER RETURNED	PER CENT RETURNED
Indiana	160	72	44.37
Wisconsin	70	31	44.28
Ohio	70	30	42.85
Iowa	70	25	35.71
Kentucky	70	24	34.28
Illinois	70	23	32.85
Michigan	70	22	31.42
Totals, Average Per Cent	580	227	36.96

When this investigation was first considered the writer sent questionnaires to 160 art teachers of high schools of

the recommended size in his native state, Indiana. It was later decided to include in the investigation six other states of the Midwest and the six named in Table I were chosen and questionnaires sent to only 70 high schools of the stated size in those states. This was done to get a fair representation of the schools of those states.

The questionnaire, in the form of a double postcard, contained the following questions which were thought pertinent to the subject at hand:

- (1) Does your art department use photography in some form in the teaching of art? In what way or ways?
- (2) Does your school have a photography club? Describe the nature of the activities of this club.
- (3) Could you use these activities in your art courses? In what way or ways?
- (4) From what department is the sponsor of this club drawn? What is the name of the sponsor?
- (5) Describe any plans you might suggest for incorporating photography in art courses.

The letters to teachers of photography in Chicago evening schools contained only a question based on question 5 in the questionnaire. Of the eight letters sent to these teachers only one, or 12.5 per cent, was answered.

Secondary sources of data. The secondary sources of data for this investigation were books and magazine articles written on various phases of photography, and letters of information and advertising material received from several concerns making and selling visual education aids and photographic supplies.

About fifty books have been read or previewed in an attempt to get information for this investigation and over one hundred editions of several photography magazines have been read or examined for the same purpose.

A list of books and magazine articles written on photography and published for photographers, both amateur and professional, will be included in the bibliography.

FINDINGS OF DATA

INFORMATION GATHERED FROM ANSWERS TO QUESTION 1

In the answers to the first question of the questionnaire it was shown that 39 per cent of the art teachers contacted were interested enough in the subject to return the questionnaire, giving as much information as possible. The states were listed in alphabetical order and information assembled for Table II, giving the various forms in which photography was used in the schools. When this table was com-

piled it was taken into consideration that some of the art teachers in the various schools used one or more of the forms listed.

TABLE II
SCHOOLS USING PHOTOGRAPHY AND FORMS OF USE

STATES	FORMS OF USE			
	Reproductions by companies	Reproductions by students	Slides and films	Photography as defined
Illinois	7	0	1	3
Indiana	21	5	10	5
Iowa	5	0	0	3
Kentucky	3	0	0	0
Ohio	6	0	0	1
Michigan	5	0	0	1
Wisconsin	3	8	2	8
Totals	50	13	23	21

The reproductions by companies and students in this table refer to reproductions of paintings, drawings, sketches, etchings, and other artistic products used for the study of composition, light values, art appreciation, color, landscapes, line, art history, trees, cultural values, detail, design, perspective, mass, sketching, tinting, subject matter, miniatures, figures, break-up of space, flowers, photo-

engravings, translation of black-and-white into color, and drawing. These are listed in order of the frequency in which the teachers placed them in the questionnaires. Of the entire list, composition was by far the most important, followed by art appreciation and light values. The rest of the above list were extremely varied as to importance, some being mentioned only once in all the returns.

Some art teachers use reproductions and actual photographs in the following ways: for recording of art projects, in research work, for recording of activities, as a source of material for poster work, making of Christmas cards, and recording of work done in compositional development. The actual photographic work, in some instances, was done by the students and instructors, and was combined with professional material from reference files to complete some of the work.

Table III, giving the uses of reproductions and the number and per centages of the schools using reproductions, will be shown on page 12 of this report.

INFORMATION GATHERED FROM ANSWERS TO QUESTION 2

In the answers to question 2 in the questionnaire 48.67 per cent of the schools answering have camera or pho-

TABLE III

USES, TOTALS AND PERCENTAGES OF
USES OF REPRODUCTIONS BY STATES¹

USE REPRODUCTIONS FOR STUDY OF	STATES ¹								
	1	2	3	4	5	6	7	8	9
Composition	2	4	2	1	2	3	3	17	7.4
Light values	1	3	1	1	1	2	4	13	5.7
Art appreciation	1	5	1		2	2	2	13	5.7
Color		2	1				1	4	1.7
Tinting		3					1	4	1.7
Sketching	1	2					1	4	1.7
Landscapes		1	1				1	3	1.3
Design	1	1					1	3	1.3
Perspective		2					1	3	1.3
Line		1				1	1	3	1.3
Detail	1	2						3	1.3
Mass		3						3	1.3
Subject matter		2					1	3	1.3
Trees		2						2	.8
Cultural values		1					1	2	.8
Figures							2	2	.8

¹See Appendix

tography clubs as part of their extra-curricular programs. These clubs are sponsored by a variety of departments. By far the largest per cent of the clubs are sponsored by the science departments of the schools, while art departments run a poor second. Sponsorship of the other clubs is distributed among the following departments: administration, commerce, English, geography, history, industrial arts, Latin, mathematics, journalism, and printing. Table IV gives the departments sponsoring camera clubs and the percentages corresponding to the number of instances in which the various departments sponsored the clubs in the schools of each state. Table IV will be given on page 14 of this report.

INFORMATION GATHERED FROM ANSWERS TO QUESTION 3

Forty-eight per cent of the art teachers could use photography, through the activities of a photography club, in their art courses. Although this per cent is almost the same as that of schools having photography clubs, the facts of the case differ to some extent. Forty-four per cent of the teachers who said that they could use the activities of the camera or photography clubs in their art courses were in schools where there were no such clubs. The art teachers that were employed in schools where there were clubs were under a handicap because the greater part of the clubs were

TABLE IV
 SPONSORSHIP OF CAMERA CLUBS
 BY STATES, AND TOTALS

CAMERA CLUBS SPONSORED BY	STATES ²							
	1	2	3	4	5	6	7	8
<u>DEPARTMENT</u>								
Science	7	16	4	4	8	3	12	54
Art	1	8	1		3	1	4	18
Commerce	2	2			1			5
Journalism	1	2			1		1	5
History		2		1			1	4
Administration			1	1			1	3
English		2			1			3
Industrial arts	1	1						2
Mathematics	1	1						2
Printing		2						2
Geography							1	1
Latin		1						1
No report		9			1			10
Totals by states	13	46	6	6	15	4	20	110

²See Appendix

connected with the science departments and not much had been done to bring out the artistic aspects of photography through the art departments.

Thirty-six per cent of the clubs dealt principally with the scientific side of the subject. By the term "scientific," in connection with the problems of the various clubs, is meant the taking, developing, printing and enlarging of pictures. Eighteen per cent of the clubs dealt with extra-curricular activities only. It was found that 10.29 per cent of the clubs actually dealt with some of the artistic aspects of photography which were listed as composition, balance, and lighting problems. The last two activities, extra-curricular and artistic, were in clubs that were sponsored, in almost every case, by science teachers. In only three cases art teachers sponsoring clubs reported that they stressed the artistic fundamentals. The remainder of the art teachers answering gave no information as to the activities of the camera clubs in their schools, if there were such.

Of the teachers replying who could use the activities of the photography clubs in their art courses 78.75 per cent offered suggestions as to how these activities could be used. These uses, and the number and per cents of art teachers suggesting them will be found in Table V.

TABLE V
 USES OF ACTIVITIES AND NUMBER AND PER CENTS
 OF TEACHERS SUGGESTING USES

USES	NUMBER TEACHERS SUGGESTING	PER CENTS OF TEACHERS SUGGESTING
Aid to study of composition	37	43
Aid to study of light and dark	14	16
Aid to study of arrangement of values	8	9
Aid to study of nature	7	8
Aid to study of balance	7	8

Several suggested phases of the study of art, which might be aided by the activities of the camera clubs, cannot be given here as percentages, nor in Table V, because the teachers listed them in their own words and there is no unity of phraseology for the list that follows. Photographic activities were suggested as aids to the study of tone and color gradation, as a basis of criticism and comparison, as an aid to the study of lighting, form, arrangement of space, line rhythm, architecture, and perspective, as a preparation for engraving, as an aid to the study of sketching, coloring, art history, detail, illustration, proportion, human subjects, emphasis, and harmony, as an aid in research, and as the principal operation in the making of Christmas cards and copy work.

Two of the teachers gave as their suggestions that the photographic activities be used purely as a hobby even in the pursuance of art courses. Three teachers reported that they could use the activities of the photography clubs for the art value of photography alone. They did not elaborate the suggestion. One teacher reported that the activities could not be used except where the principles of art might help photography.

Twenty-one and one-fourth per cent of the teachers who replied that they could use the activities of the clubs in their art courses did not put forth any suggestions as to ways or means of utilizing this extra-curricular activity.

Of the two hundred twenty-one teachers who returned the questionnaire, 18.27 per cent reported that they could not use the activities of the photography clubs in their art courses. Thirty-three and fifty-three hundredths per cent of the teachers did not express themselves one way or the other in answer to this question.

INFORMATION GATHERED FROM ANSWERS TO QUESTION 4

All information gathered from the answers to this question were combined with the information related to the second question of the questionnaire. This information will be found on pages 13 and 14 in this report.

INFORMATION GATHERED FROM ANSWERS TO QUESTION 5

When all returns were in, it was found that 71.13 per cent of the teachers answering offered suggestions as to the incorporation of photography in art courses. Twenty-eight and eighty-seven hundredths per cent did not. Included in the last group were eight teachers who confessed that they knew nothing about photography, but thought the possibilities of such a subject in their art courses might be interesting and expressed a desire to know more about the subject. Also included in that per cent were two teachers who definitely did not think that photography had any place in the study of art. One of these teachers gave as an objection the fact that he thought that photography was not a legitimate creative art and the other misinterpreted the question and very definitely stated that she felt that it would be a calamity to give up art instruction and try to leave it all to photography.

In regard to the suggestions for incorporating photography in the study of art, the majority of the teachers confined themselves to one- or two-word phrases describing units of the art courses in which photography might be of assistance. As in the suggestions for uses of activities of photography clubs in art courses, most of the teachers felt that composition was the most important phase of art to be

aided by photography. About 32 per cent of the teachers named this in answer to question 5. The study of light and dark, or "values," came next with 18.47 per cent of the teachers listing it. Twelve per cent thought that the study of design could be aided by the use of photography. Ten and thirty-four hundredths per cent suggested that photography could be used to best advantage as an aid in school publications.

About 10 per cent of the teachers included in their answers the statement that photography could be used as an aid in making records of work done during the year by the students and records for comparison and constructive criticism. Approximately 6.5 per cent urged the use of photography in teaching and studying of art appreciation and art history. Six and three tenths per cent reported that it might be useful in studying architectural detail and design.

Five per cent of the teachers stated that photography could be used as an aid in advertising events of the schools and in commercial art work. About the same number were in favor of using it to aid in the study of color and color harmony. The fact that portrait studies could be aided in this way was suggested by 3.44 per cent of the instructors. A like number favored the study of perspective as that which would derive benefit from photography.

The order in which the above-mentioned phases of the study of art were placed was determined by the frequency in which they appeared on the returns of the questionnaire. There were quite a few miscellaneous phases given in the returns, but none of these were subscribed to be more than 2 per cent of the entire number of teachers answering. Included in this list were the study of still life, unusual point of view, line, dominant theme, rhythm, taste in selection of subject, pen and pencil technique, interior decorating, silhouettes, texture, tone masses, murals, tinting, water color and oil studies, realism, and balance. One of the highest in this category was the making of photographs of nature-study material to be used when field trips were inadvisable. Another was the making of slides for visual education aids, and the list concluded with the making of Christmas cards.

One teacher reported that she thought any phase of art might be aided by the use of photography. The study of photography for the sake of photography was advocated by two teachers in their answers.

There were twenty-one schools already using photography, as defined, in their art courses. However, only two of these schools had courses in photography, offering credit in art. All the other schools merely included it in their

art classes, as projects.

One of the schools offering photography as a subject allowed two meetings per week and gave one credit toward a minor in art. The enrollment in the course was limited to juniors and seniors. The other school offered a course called "The Art and Science of Photography." This was a one-year course, students alternating classes in art and science within each term. The students received one-half year's credit in art and one-half year's credit in science. The artistic phases of the course were taught by the art teacher and the scientific units by the science teacher. This was the only evidence of recognition, in a material way, of photography as an art, or an aid to the study of art.

Eight of the teachers sending returns gave practical suggestions as to ways and means of incorporating photography in their art courses. Some of these were, of necessity, very brief. One teacher recommended a class meeting once a week, with planned outlines for the rest of the week, to submit work for constructive criticism. This plan would be followed for the students to learn elimination of detail, to study patterns, space arrangements, and values of light and dark.

Because the students in one school needed to know how

to plan good groups, how to get good informed shots, how to get special effects and poses, and how to enlarge, reduce, mount, and prepare montages, one teacher recommended a course in photography to include the school yearbook in art work.

Another teacher recommended that the art department be co-ordinated with the chemistry department and that through the two departments the art department get photographs which could be artistic as to subject, light and shadow values, composition, and balance. It was also suggested on this return that these photographs might be used to draw from in the regular art work.

It was recommended on another return that the students photograph the various projects in the art classes so that each class member might have a record of the projects. It was also urged on this return that photography be used extensively in a unit of study on "lighting" in stage craft.

Another teacher suggested that a course in photography, stressing composition, would be a good prerequisite to a course in painting from life.

The sixth teacher recommended that the students photograph various textures, that they photograph interesting subject matter in accordance with art principles to teach that beauty depends upon fine interpretation rather than ex-

terior prettiness, that they photograph subjects to create a greater sensitivity in light and dark patterns.

The other two teachers included in this number were teaching in schools that offered courses in photography, which has already been discussed in this study.

In regard to schools where photography was already in use, one instance was reported where the teacher guided the students in photographing subjects for the school annual publication, using the form of photography known as "table-top photography." For the division pages of the annual, clay figures were modeled, grouped as desired, photographed, and used. This offered problems in composition, values of light and dark, and clay modeling as well.

Another plan was recommended which was already in use in one of the schools. The actual photography work was done by the teacher to teach composition appreciation by making a design analysis of a picture on a slide, showing this separately and then superimposing this design upon a slide of the picture itself to prove more convincingly the organized scheme of the composition. This teacher also recommended the photographing of designs in nature, cross sections of plant form, examples of phyllitaxis, radial symmetry, and bilateral symmetry. According to this teacher such material

would be very convincing in the teaching of design.

Five of the teachers reported that there were students in their art classes who were interested in photography, but from the reports of the teachers, the students do all of the work themselves, receiving no help from the teachers. However, one teacher did report that she helped the students interested in this form of work set up still-life groups for photographs from various angles and that they also experimented with fashion groups with the girls modeling party dresses for the photographs.

Two teachers stated in their returns that photographers in their schools should study art for the help that it might give to photography. One teacher expressed the opinion that art students are interested in photography from an appreciative angle, and not often from the production side; more photography enthusiasts should take basic art courses to help them in composition and the handling of light and dark. The other said that every photographer should understand art principles. He needs to know the "layout" or plan of his "snap," its "composition" or arrangement, line movements or rhythm, "pattern of light and shade" or values, "balance of objects," and "color harmony," taste in selection of subject as well as judgment as to what to snap. Art and science would be the funda-

mentals.

Still another teacher put forth the suggestion that the only necessary plan was to equip an art department with a darkroom and other necessary supplies and equipment. The directions could be obtained by reading the labels on the cans !

In the letter from the instructor of photography in the Chicago evening schools was found another plan for using photography in the study of art. In those classes a practice was introduced which they called "photosketching," which is a combination of photography and art. An ordinary photograph on non-glossy paper was sketched over with soft lead pencils or India ink. The outlines, character lines, eyes and "half-tones" were drawn directly on the photograph. The amount of sketching was viewed by oblique rays of light and when enough had been done, the photograph was bleached chemically, leaving only the pencil or India ink sketch. It was reported that this experiment had been performed by the students in those classes for the past four years, and in every case a reasonable likeness had resulted. Thus, this process had been instrumental in placing art within the reach of all, even the ungifted.

Almost 4 per cent of the teachers returning question-

naires expressed a desire to know more about photography and hoped that some day they might have the opportunity to use photography in their art courses.

SECONDARY SOURCES OF DATA

Articles written on various methods of combining art and photography. An article was found in the magazine "Good Photography"¹ which tells how to reproduce famous paintings with living models. It is written by Tamis Maddick and Mead Herrick and is a result of a project, "Pageant of the Masters" produced at Laguna Beach, California, in 1940. The methods are clearly outlined as to type of model, make-up, costume, props, background, and lighting. In the article these steps are discussed thoroughly and in language that everyone can understand. Illustrations are given of some of the pictures copied in the project. These included Gainsborough's "Blue Boy," Hals' famous painting, "Laughing Cavalier," "Hope," by Watts, Melcher's "Sailor's Sweetheart," Whistler's "My Mother," "The Astronomer," by Stevens, "The Sentinel," by Vedder, Bouguereau's "Charity," Millet's "The Man with the Hoe," also Millet's "Feeding Time." This is an excellent article to be used as reference material if this type of

¹Tamis Maddick, Mead Herrick, "Famous Paintings Reproduced with Living Models," Good Photography, I,4 (1941) 6-13, 140-142.

work were to be done by an art class.

An article entitled "Sketching with the Camera" by Jack Johnson in the magazine "Popular Photography" for September, 1939, tells how artists in America's oldest art colony at Provincetown, Massachusetts, use the camera to aid them in their artistic endeavors. This article is important chiefly for its illustrations which show how the camera was used and what resulted from its use. Richard A. Miller, member of the National Academy, and dean of the Provincetown colony, says: "Intelligent use of the camera is a great help to the artist."² This is another informative article for reference material in an art class where photography might be used.

In "The Nation's Schools" for November, 1941, is found an article called "Featuring Photography." This article is a part of a sixteen-page folio featured by the magazine each month. In this particular issue the folio is written on art departments and includes photography with sculpturing, drawing, craft work, and painting. The article is written by John Brainerd MacHarg, Consultant in Visual Education, Lawrence College, Appleton, Wisconsin. Mr. MacHarg says:

²Jack Johnson, "Sketching With The Camera," Popular Photography, V,3 (September, 1939) 23.

Of course, art instructors will teach photography, the magic art of direct painting with light and color. Simple as the making of photographs is, the serious student of art soon discovers that he needs all the knowledge of the artist, as well as the development of technical skill in using this medium. . . .eyes become critical and look for what is significant and for the most effective grouping of subject matter. Colors that are often overlooked become evident and the problems of reflected light become a tangible interest.³

The article goes on to recommend the use of slides in the study of art in the schools and gives several examples of uses of slides.

INFORMATION GATHERED ON THE MAKING OF SLIDES

It was found that slides could be made by the students or bought from any of several companies whose business it is to make slides for just such a purpose as has been discussed. After some investigation it was found that there were many companies furnishing material and methods for the making of slides for projection purposes. Of these companies three are cited here. They are Eastman Kodak Company of Rochester, New York, the G. Cramer Dry Plate Company of St. Louis, Missouri, and the Keystone View Company of Meadville, Pennsylvania. These companies will, upon request, send information booklets on the making and projection of slides. The slides can be

³John Brainerd MacHarg, "Featuring Photography," The Nation's Schools, XXVIII, 5 (November, 1941) 44.

made either by the students or by the instructor.

The companies listed above naturally advise the use of their own materials for the making of the slides. The most complete and most technical method is given by the Eastman Kodak Company in their booklet "Kodak Data Book, Slides and Transparencies." This booklet may be obtained for the sum of twenty-five cents and gives all information as to films and plates for slidemaking, the actual making of the slides, giving instruction in the processing, developing, toning, and tinting, retouching and titling, masking and binding, and projecting and displaying of transparencies.

The Keystone View Company provides a booklet on the making and use of hand-made slides for these reasons:

The hand-made lantern slide is becoming more and more popular as teachers and supervisors discover its usefulness in the following situations:

1. Supplementing the regular sets of standard-made lantern slides.
2. Providing, at a low cost, projection materials where standard lantern slides are not available.
3. Providing economical means for teachers and supervisors to present to large audiences original material that does not seem to warrant the expense of its being made in the regular lantern-slide form.⁴

⁴G. E. Hamilton, "How To Make Hand-made Lantern Slides," (Meadville, Pennsylvania, Keystone View Company, 1940) 3.

This company suggests the following slides made for art study:

1. Etched-glass slides made by the pupils or the teacher--studies of design, color, and principles of drawing, and copies of masterpieces of art--traced with a pencil and colored.
2. Etched-glass slides, made by the instructor. . . . to use in presenting the fundamentals of practical art appreciation to large groups of children, teachers, or school patrons.⁵

The methods for making the slides are presented in the booklet from which the above references were taken. It may be obtained free of charge from the company.

The G. Cramer Dry Plate Company does not give any method for the making of slides in their Booklet "Cramer's Manual on Negative Making and Color Contrast Photography," but do list the material furnished by their company in the way of plates and films for the making of slides.

INFORMATION GATHERED ON READY-MADE SLIDES

Information was received from four companies selling ready-made slides for educational purposes. These companies are the Society for Visual Education, Inc., Chicago, Illinois,

⁵G. E. Hamilton, "How To Make Hand-made Lantern Slides," (Meadville, Pennsylvania, Keystone View Company, 1940) 6.

Eastman Educational Slides, Wilmette, Illinois, Melmoy Picture Service, Indianapolis, Indiana, and the Chicago Slide Company, Chicago, Illinois. This does not, by any means, exhaust the list of businesses and institutions where one may obtain numerous slides for educational purposes. A booklet was obtained from the United States Department of the Interior called "Sources of Visual Aids and Equipment for Instructional Use in Schools." This booklet contains a fairly complete list of governmental agencies and commercial dealers which will supply pictures and photographs, posters, stereographs, and other three-dimensional pictures, filmstrips, and slides free of charge to the schools within their own states. This booklet bears the above title and is Pamphlet No. 80, and may be obtained free of charge.

The companies listed above were given in the order of the greatest quantity of material available. The Society for Visual Education, Inc., according to its catalogue, has about sixteen hundred slides available on various phases of art which include architecture, costumes, dances, design (historic), interior decoration, landscape gardening, paintings (juvenile), paintings (religious), paintings (secular), and sculpture. These are in Eastman cardboard Readymounts, and sell for fifty cents each. They are not assembled in sets, but the great amount of material available on each

subject permits the individual to make sets of his own to meet his own particular personal or curriculum needs.

The Eastman Educational Slide Company has assembled its slides in sets and these include sets on art history, art appreciation, modern American painters, modern American sculptors, and modern art. This company has developed its slide service to a high degree of correlation with other school studies, namely, English classics, history, Latin, and French, for which slides also can be furnished. These slides vary in price from sixty to eighty cents. Black and white slides are sold for sixty cents, and eighty cents is paid for slides in sepia color. The size of the available stock of slides from this company is slightly smaller than that of the Society for Visual Education, Inc.

The Melmoy Picture Service can provide slides for art study on architecture, historic design, costumes, sculpture, art masterpieces, modern paintings, paintings for juveniles, and religious paintings. The available stock consists of only seventy-seven slides on the subjects mentioned above. However, this company can furnish numerous films on almost any phase of art desired. These can be had in either 8mm or 16mm sizes on a rental basis. No price list was included in the information received. This company also has a small stock of post-cards for either projection or non-projection

purposes. These are published mainly by various companies and assembled by this particular company. They have some artistic value, however.

The Chicago Slide Company deals entirely with art history slide supplies. The catalogue furnished by that company lists both single slides and sets available for the schools. The slides and sets are not kept in stock, but are made to order and are of about the same price as listed by the companies above. For quantities less than one hundred the price is fifty cents per slide. As the quantity increases the price correspondingly decreases.

INFORMATION GATHERED ON FILMS FOR USE IN ART STUDIES

Information was received from two companies which deal solely with films. These companies are the Ideal Pictures Corporation, of Los Angeles, California and Chicago, Illinois, and the Erpi Classroom Films, Inc., of Long Island City, New York. Both of these companies have prepared a series of films on art work and art study. The Ideal Pictures Corporation's list covers art and architecture with the following subjects listed: churches and cathedrals, parts I, II, and III, fountains, gardens and statuary, colonial architecture, contemporary artists, bells, gargoyles and spires, bridges the world over, and broad-stroke drawing.

These films are distributed on a rental basis at a rate of one dollar and fifty cents each.

The Erpi Classroom Films, Inc. series includes one-reel films on metal craft, pottery making, plastic art, arts and crafts of Mexico, furniture craftsmen, and the modern lithographer. These films are made to correlate with various aspects of art, social studies, industrial arts, and vocations courses. The rental prices are: three dollars and fifty cents per day of use for 16mm sound-on-film and five dollars per day of use for 35mm sound-on-film. The purchase prices are as follows: fifty dollars for 16mm sound-on-film and one hundred dollars for 35mm sound-on-film.

INFORMATION GATHERED ON PROJECTORS,
BOTH SLIDE AND FILM

Numerous companies sell projectors for the work described above. The companies distributing information on slides and slide making listed above have their own types of projectors, with the exception of the G. Cramer Dry Plate Company. However, in all cases the slides sold by those companies can be used in other makes of projectors. Prices of projectors vary from the simplest and cheapest at around fifteen dollars to the more complicated and expensive machines at two hundred fifty dollars or more. According to the information received from the various companies dif-

ferences in prices depend a great deal on the choice of lens for the projector. It is stressed, however, that the cheapest projector is generally satisfactory for most work of this kind.

The companies from which information was received on slide projectors were Eastman Kodak Company, Keystone View Company, Society for Visual Education, Inc., and Bausch and Lomb Optical Company of Rochester, New York.

Motion picture projectors are vastly different from the slide projectors in both mechanics and prices. There are, also, several companies selling this equipment. Among them, from which information was received, are Bell and Howell Company of Chicago, Illinois, Eastman Kodak Company, American Bolex Company of New York, and the Revere Camera Company of Chicago, Illinois. The prices of these machines range from as low as fifty dollars for a silent film projector to five hundred dollars or more for a sound-on-film projector. Most of the companies make the machines for 8mm film, but the 16mm film is becoming popular also, and more and more of the companies are turning to that size along with their 8mm machines. The 35mm machines are made by these companies, also, but are not as popular with schools as the smaller ones because of the almost prohibitive prices.

INFORMATION GATHERED ON PROCESSING MATERIAL
FOR FILMS AND PRINTS

Equipment for student use in processing of pictures is not very expensive and will fit the needs of almost any amateur who might be interested in that work. Some objections were raised in the returns of the questionnaire relative to the expense of the equipment for processing film. Upon investigation it was found that a good set of equipment and supplies necessary to develop film and print pictures can be purchased for as little as three and a half or four dollars. Some sets cost more according to the amount of extra equipment desired. The most expensive set will not cost more than eight or nine dollars. These sets include developer, fixer, 3 trays, thermometer, printing paper, printing frame, safe light, film clips, graduated beaker, and stirring rod. All of these items are contained in the cheapest processing outfit. The more expensive ones contain the same material and equipment in greater quantity and of better quality.

INFORMATION GATHERED ON CAMERAS AND FILM

Some objection might be sustained in the matter of purchasing a camera and film but even here the expense is governed by the desires of the user. Cameras can be bought

for as little as one dollar and a half, or as much as five hundred dollars. This great price range is dependent upon the type of lens in the camera and the number of helpful gadgets with which the user wishes to be bothered. A camera good enough for the average amateur can be bought, according to information received from Eastman Kodak Company, and Agfa Ansco Corporation of Binghamton, New York, for a price ranging from five dollars to fifteen or twenty dollars.

The price of film varies with the size of the film. Small film is cheapest at about twenty cents per roll of eight exposures and the price gradually rises as the size increases. The largest size roll film costs only forty-five or fifty cents for an eight-exposure roll. The 35mm film is priced at one dollar and twenty cents for a thirty-six exposure roll.

After the initial quantity of paper, developer, and fixer in the set of processing equipment has been used, it is, of course, necessary to purchase more. The expense here is not at all prohibitive. A good standard developer for the average amateur costs only seven or eight cents for enough to develop two or three rolls of film and the fixer is in the same price range. The paper for printing pictures is slightly more expensive, prices varying from fifteen cents for twenty-four sheets in a small size to twenty-five cents

for twelve sheets in a much larger size. The above information was likewise obtained from the Eastman Kodak Company and the Agfa Ansco Corporation.

CHAPTER III

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Primary sources of data. In Chapter II it was shown that 39 per cent of the teachers contacted were interested enough to return the questionnaire, answered to the best of their ability. It was found that, of this 39 per cent, 66.51 per cent use photography in some form or other in their art courses. Most of these schools use only photographic reproductions as aids to the study of the various phases of art. However, it was discovered that 9.5 per cent of the teachers do use photography, as defined, in their art courses. These uses vary from making records of work done to actual pictures for art's sake.

Of the 9.5 per cent of the teachers using photography in their art courses, only two were employed in schools that offered courses in photography. These courses led toward credit on a minor in art. All the other schools merely included it in their regular art classes as projects.

One of the schools offering photography as a subject limited the course to two meetings per week and the enrollment to juniors and seniors. No details of the course were given. The other school offered a course combining the artistic and scientific aspects of photography in a one-

year course with the art and science teachers dividing the teaching duties of the class according to the subject at hand.

About 49 per cent of the schools reporting have photography clubs as part of their extra-curricular programs. The sponsorship of these clubs falls to various departments with the science department leading and the art department far behind but in second place. The remaining clubs were sponsored by teachers who evidently practiced photography as a hobby. These teachers were taken from non-artistic and non-scientific departments.

It was found that 48 per cent of the teachers reporting could use the activities of the photography clubs in their art courses. Forty-four per cent of these teachers were employed in schools where there were no photography clubs. The teachers in schools where there were photography clubs were, in the majority of cases, not connected directly with the clubs, those being under the supervision of the science departments or others.

Over 36 per cent of the photography clubs dealt with the scientific aspects of photography, while only 10.29 per cent dealt with the artistic side of the subject. The remainder of the clubs were concerned with extra-curricular activities only.

Almost 79 per cent of the teachers replying that they could use the activities of the photography clubs in their art courses offered suggestions as to what these activities could be used for in the courses. Forty-three per cent listed these activities as aids to the study of composition, 16 per cent as aids to the study of design, 9.5 per cent as aids to the study of arrangement of values, and 8 per cent as aids to the study of the artistic aspects of nature and the study of balance.

Miscellaneous entries as aids covered practically all of the remaining phases of art, but were not recommended by any large number of teachers in any one instance.

Twenty-one and one-fourth per cent of the teachers who replied that they could use the activities of the clubs in their art courses did not give any suggestions as to ways and means of doing so. In this category there were two teachers, however, who recommended that photography be pursued as a hobby even in the art courses, and three more teachers briefly reported that they could use the activities of the clubs for the art values of them.

The questionnaire showed that 18.27 per cent of the teachers could not use the activities of the photography clubs in their art courses and 33.53 per cent did not express themselves in one way or another.

Suggestions as to the incorporation of photography in the art courses were offered by 71.13 per cent of the teachers answering. These suggestions dealt with units of art courses in which photography might be of assistance. There was a great similarity between these suggestions and the suggestions for the use of the activities of the photography clubs in the art courses. Photography as an aid to the study of composition was listed by 31.84 per cent of the teachers and the study of light and dark was listed by 18.47 per cent. Twelve per cent of the teachers listed the study of design, while 19.34 per cent thought that school publications might receive help from photography. In this same unit the study of advertising and commercial art work was mentioned.

The remainder of the units of art to be assisted were recommended by a negligible few in each instance. These included art appreciation and history, architectural detail and design, portrait studies, color and color harmony, and perspective.

Each of the following studies was recommended singly: still life, unusual point of view, line, dominant theme, rhythm, taste in selection of subject, pen and pencil technique, interior decorating, silhouettes, texture, tone, masses, murals, tinting, water color and oil studies, real-

ism and balance. Also included in this list were making of slides for visual education aids and making of Christmas cards.

Actual procedures for incorporating photography in art courses were given by eight teachers in their returns. Included in these procedures were examples of what had already been used in some schools in the way of photographic activities. This number also included the two teachers who reported that their schools offered courses in photography. In two cases the actual processing work was done outside of the art classes, but the planning and taking of the pictures was done in classes. In two other classes still life in table-top photography was practiced and fashion pictures were taken using live models from the home economics department of the school. One teacher recommended that the students take photographs of the work done in art classes for class records. Another recommended that the art and science departments be co-ordinated in photography work and the resulting photography be studied for both art and scientific values. Still another teacher was concerned with the work done in photography to aid in school publications and suggested that a course in photography be introduced to help the students in that particular kind of work. The remaining instructor did not offer any practical suggestion for the incorporation of photography in the study of art.

It was found that in five schools there were students who were interested in photography and who practiced it quite extensively. In these cases the work was done almost entirely by the students. In only one case was any assistance received from the teacher and this was in the case mentioned in the above paragraph on the photographing of still life and fashion groups.

One method was reported for the use of photography in the study of art in the letter from the instructor in the Chicago evening schools. This method was a combination of photography and pen or pencil sketching called "photosketching." It was reported that the method had been used extensively and that good results were obtained in every instance.

A small per cent (3.62) of the teachers returning questionnaires expressed a desire to know more about photography and intimated that some day they might have the opportunity to use photography in their art courses.

Secondary sources of data. The magazine articles reviewed in Chapter II afforded some insight as to what can be done with the camera in the way of assistance to the study of art. These articles recommended the use of photography for copying of famous paintings, for reference work, and for the making of slides for use in art classes.

The information derived from the letters and advertising material from various companies selling, renting, or loaning slides, projectors, films, photographic equipment and supplies dealt chiefly with the cost of such material. It was found that the cost of ready-made slides was about sixty cents apiece and the cost of projectors for slides was about fifteen to twenty dollars for a projector that would fill most needs of the average school.

The cost of movie film and projectors was much higher. It was found that most of the motion picture work could be done cheapest through the various rental systems set up by the various companies dealing in that type of material.

The cost of equipment and supplies for actual photography work was found to be very reasonable. This cost, it was learned, could be governed by the desires of the user. The information was given that a processing outfit that would fit the needs of the average amateur could be obtained for about four dollars, and that the cost of supplies after the exhaustion of the original material was small, depending upon the amount needed for the amount of work there was to be done.

CONCLUSIONS

It can be concluded from this study, that photography

has become rather important in the eyes of both students and teachers of art in the public high schools. Since it was reported that almost half of the schools reporting already encourage the practice of photography through photography clubs and that teachers in 48 per cent of the schools could use the activities of these clubs in their art work, it can be assumed that photography is taking its place in the extra-curricular field, at least.

It is encouraging to note that already almost 10 per cent of the teachers use photography, as defined, in their art courses. This would indicate that there is a definite trend toward the introduction of photography as a part of the study of art.

The two schools which already offer courses in photography have recognized the value of the subject, both in artistic and after-school employment possibilities, and, from the brief information received on the questionnaires, are bending every effort toward the inculcation of this knowledge in the minds of their students.

The fact that so many of the photography clubs were sponsored by the science departments of the schools, and so few by the art departments, would indicate that, though administrative officials recognize the fact that photographic

activities are becoming more and more popular, photography still is regarded as a purely scientific study and hence is delegated to the science department for sponsorship and instruction. However, since a few of the clubs are sponsored by art departments, it can be concluded that the artistic aspects of the subject are recognized to some extent and the subject is dealt with accordingly.

It must be concluded that a great per cent of the schools have not come to realize the fact, as yet, that photography probably is in its ascendance as a legitimate subject, since almost 42 per cent of the schools still delegate the sponsorship of the photography clubs to any teacher in any department who might be interested in the subject as a hobby.

The fact that the schools are still very backward in realizing that photography has a right to a place in the art program is substantiated further by the information gathered from the questionnaire that 36.36 per cent of the clubs dealt principally with the scientific side of the subject, while 18.18 per cent dealt with extra-curricular activities only, and that only 10.29 per cent of the clubs dealt with the artistic aspects. This left almost 55 per cent of the art teachers who did not know anything about the activities of

the clubs, or at least did not report on them. In only two cases where art teachers sponsored photography clubs did they stress artistic fundamentals of photography. The remainder of the art teachers in question were interested only in the value of the subject as an aid to school publications.

Since it was found that almost half of the teachers replying could use photographic activities of the photography clubs in their art courses, and almost 79 per cent listed suggestions as to how the activities might be used in the study of art leads to the conclusion that photography would be of great value in the study of art. These suggestions, as has been observed, were varied in content, but the fact that so many expressed an interest in photography in this manner again leads to the conclusion that the teachers, at least, are becoming aware of the fact that photography, at least through photographic activities of photography clubs, would be useful in various art courses.

It can be concluded, from the fact that 71 per cent of the teachers answering offered suggestions as to the incorporation of photography in art courses, that teachers are definitely interested in photography, but not, however, as a course in itself. The suggestions given were for the use of photography as an aid in the study of various units of art, just as the suggestions for the use of the activities of the

photography clubs were designated. The suggestions in the answers to both questions of the questionnaire were very similar, although ranked somewhat differently in percentages. The percentages obtained in the answers to question 5 were greater than those obtained in answers to question 3 and this brings the conclusion that more teachers would be in favor of making photography a part of the art study, separate from the activities of the photography clubs.

From the data gathered in the answers to question 5 it can be assumed that there are ways in which photography can be used in the study of art. Ways were brought out, also, in the magazine articles and the letter from the instructor of photography in the Chicago evening schools. Again it is concluded that photography can be used in the study of art, not as a separate course, but as a project in the art course.

From the data gathered from various companies it is an obvious conclusion that there are many companies ready and able to supply all the necessary material for the installation of photographic processing in the art courses of the public schools. It can also be concluded that said installation would not be expensive to the point of prohibition.

RECOMMENDATIONS

Several recommendations might be made concerning the use of photography in the study of art in the high schools of the size stated. The first such recommendation has to do with the importance of the station that photography will occupy in this field. It is recommended that photography be given a definite place in the study of art with credit allowed for a one-semester course in the mechanics of photography from both the artistic and scientific points of view. As was suggested by one of the teachers reporting, this course should be taught by both the science and art instructors. One semester should suffice for the information to be learned in this course. However, the art teacher should, after the completion of this first semester, incorporate photography in the regulation art course for further work in artistic phases. It is also recommended that the actual picture-taking, developing, and enlarging be done under expert supervision at the school with equipment that should be furnished by the school and used in a darkroom set up in the art department. This recommendation is made to speed up the processes so that the finished pictures may be used as soon as completed for whatever use the instructor sees fit. If the actual mechanical work is done out of school, perhaps in the

home of the student, there is too much time lost, considering the rapidity with which the work could be done as soon as the picture had been snapped.

In this section of this report it is not intended to give the impression that photography should take the place of the study of art. Photography should be used only as a means of supplementing the regular art course. It is recommended that the art teacher set up a program that would use photography as an aid to the study of composition, black and white, and color. One procedure in the study of composition might be as follows: the students might be required to make sketches, mere maps, so to speak, of the picture in mind, keeping within the limits of the picture space. After this sketch is made the student then should set up the necessary properties, arranging them in the pattern of the sketch, set up the lights required for the proper shading and snap the picture. The procedure would then embody the study of proper composition and proper lighting for the mood of the picture. The rules for proper composition and proper lighting could be learned in the regular art class, as all students in art classes do.

The pictures, in the above-mentioned procedure, could be made in either black-and-white or color. However, black-and-white film being the cheapest and easiest to use, most of

the work should be done in that medium. Work with color film is much more exacting and is also much more expensive.

The principal disadvantage of working with color in photography is that the film has to be processed at the laboratories of the manufacturer. This naturally leads to much loss of time, and the danger arises that the student might have gone on to some other project during the time the film was processed and might have lost interest in that particular problem. In some isolated cases, however, the student might be in a position to have the processing of color film done almost as quickly as it black-and-white film. If such is the case then it is recommended that just as much work be done in color as in black-and-white.

This will naturally involve a more complex study, since the mechanics of lighting and the exposure time for color is somewhat different. These details could be studied and practiced in the first half of the recommended course, which would be the mechanics of photography, in the science department.

Since the use of photography in the study of art in the high schools of the size chosen will depend to a large extent upon the desires and initiative of the various instructors, these recommendations are of a general nature

rather than specific. Also, since photography as an aid to the study of art is a comparatively new idea in the schools, any planned outlines or programs incorporating this use will have to come from the classes through experimentation and from any thoughts and ideas the instructors may have on the subject.

BIBLIOGRAPHY

A. TEXT BOOKS FROM WHICH DIRECT QUOTATIONS WERE TAKEN

- Hamilton, G. E., How to Make Handmade Lantern Slides, Meadville, Pennsylvania: Keystone View Company, 1940.
- Rugg, Harold, Culture and Education in America, New York: Harcourt, Brace and Company, 1931.

B. BOOKS REVIEWED

- Abbott, Bernice, A Guide to Better Photography, New York: Crown Publishers, 1941.
- Agfa Ansco Corporation, Better Photography Made Easy, Binghamton, N. Y., 1941.
- Boucher, Paul E., Fundamentals of Photography, New York: D. Van Nostrand Co., 1939.
- Collins, A. Frederick, Amateur Photographer's Handbook, New York: Crowell Publishing Company, 1941.
- _____, Photography for Fun and Money, Boston, American Photographic Publishing Company, 1940.
- Conrady, and others, Photography, New York: D. Van Nostrand Company, 1923.
- Crabtree, J. I., G. E. Matthews, Photographic Chemicals and Solutions, Boston: American Photographic Publishing Company, 1941.
- Curtis, Thomas S., Color Printing Simplified, Thomas S. Curtis Laboratory, 1940.
- Dash, F. L., W. Emanuel, The All-in-one Camera Book, New York: Burleigh Brooks, Inc., 1941.
- Doubleday, Russell, Photography is Fun, New York: Doubleday, Doran and Company, Inc., 1938.
- Dunn, Carlton E., Natural Color Processes, Boston: American Photographic Publishing Company, 1936.

Eastman Kodak Company, An Elementary Course in Photography, Rochester, N. Y.: Eastman Kodak Company, 1930.

_____, How to Make Good Pictures, Rochester, N. Y.: Eastman Kodak Company, 1943, revised yearly.

Gable, J. Harris, Complete Introduction to Photography, New York: Harper and Brothers, 1939.

Hammond, Arthur, Pictorial Composition in Photography, Boston: American Photographic Publishing Company, 1940.

Henney, Keith, Color Photography for the Amateur, Cincinnati: Minicam Photography, 1940.

_____, Beverly Dudley, Handbook of Photography, New York: McGraw-Hill Book Company, Inc., 1940.

Hexter, Paul Louis, Make Your Pictures Sing, Cincinnati: Minicam Photography, 1940.

Jacobson, C. I., Developing, New York: Burleigh Brooks, Inc., 1940.

June, Larry, Photographer's Rule Book, New York: MacMillan Company, 1940.

Keppler, Victor, Color Photography--The Eighth Art, New York: William Morrow, 1941.

Kerlee, Charles, E., Pictures With a Purpose, San Francisco: Camera Craft Publishing Company, 1940.

Mees, C. E. K., Photography, New York: MacMillan Company, 1940.

Mortensen, William, The Command to Look, San Francisco: Camera Craft Publishing Company, 1940.

_____, Outdoor Portraiture, San Francisco: Camera Craft Publishing Company, 1939.

Mortimer, F. J., A. L. M. Sowerby, Wall's Dictionary of Photography, Boston: American Photographic Publishing Company, 1941.

Natkin, Maud, Photography and the Art of Seeing, San Francisco: Camera Craft Publishing Company, 1940.

Neblett, C. B., Photography, Its Principles and Practice, New York: D. Van Nostrand, Company, 1940.

_____, and others, Elementary Photography, New York: MacMillan Company, 1938.

Scacheri, Mario, Mabel Scacheri, Fun of Photography, New York: Harcourt, Brace and Company, 1938.

Spencer, D. A., Color Photography in Practice, New York: Pitman Publishing Corporation, 1940.

Teale, Edwin Way, The Boys' Book of Photography, New York: E. P. Dutton and Company, 1938.

Windish, Hans, The New Photo-school, New York: Burleigh Brooks, Inc., 1940.

Ziff-Davis Publishing Company, Little Technical Library Series, Chicago, 1940.

C. MAGAZINE ARTICLES FROM WHICH DIRECT QUOTATIONS WERE TAKEN

Johnson, Jack, "Sketching With the Camera," Popular Photography, V,3 (September, 1939) 22-23.

MacHarg, John Brainerd, "Featuring Photography," The Nation's Schools, XXVIII,5 (November, 1941) 43-45.

"Photography Becomes an Art," Minicam Photography, V,2 (October, 1941) 37.

Webb, Tom, "Snap Men as They Are," Popular Photography, V,4 (October, 1939) 25-26.

D. PERIODICALS REVIEWED

American Photography, Boston: American Photographic Publishing Company, Monthly.

Camera Craft, San Francisco: Camera Craft Publishing Company, Monthly.

Good Photography, Louisville, Fawcett Publication, Inc.,
Quarterly.

Minicam Photography, Cincinnati: Automobile Digest Publish-
ing Corporation, Monthly.

Photo Guide, Chicago: Popular Mechanics Press, Quarterly.

Photography Handbook, Louisville: Fawcett Publications,
Inc., Quarterly.

Popular Photography, Chicago: Ziff-Davis Publishing Com-
pany, Monthly.

Prize Photography, Springfield, Massachusetts, Ace Magazines,
Inc., Monthly.

Photo Technique, New York: McGraw-Hill Book Company, Monthly.

The Camera, Philadelphia: Frank V. Chamber, Inc., Monthly.

U. S. Camera, New York: Camera Publishing Corporation,
Monthly.

APPENDIX

In Tables III and IV, on pages twelve and fourteen, the states are numbered in the following manner:

STATE

- | | |
|---|-----------|
| 1 | Illinois |
| 2 | Indiana |
| 3 | Iowa |
| 4 | Kentucky |
| 5 | Ohio |
| 6 | Michigan |
| 7 | Wisconsin |

The number 8 in Tables III and IV stand for the total number of states and the number 9 in Table III stands for the percentage of states reporting on this matter.

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