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The measurement of art judgment in everyday life.

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THE MEASUREMENT OF ART JUDGMENT IN EVERYDAY LIFE

Submitted by

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CHAPTER I

PURPOSE, METHODS AND SCOPE OF THIS THESIS

1. The Problem

The purpose of the thesis.--This study proposes to construct and validate a test which measures a person's judgment of those art objects which he confronts in his everyday living.

"Art objects" as referred to in this thesis are considered to mean those objects designed and created by men for the use and enjoyment in their everyday living including architecture, furniture, textiles, pottery, china, and wearing apparel.

The test is made up of the following parts:

1. A portfolio of 42 black and white and colored photographs and drawings of well designed and poorly designed art objects mounted on mount board suitable for projection in a reflector type projector.

2. A mimeographed set of sheets containing 40 multiple choice items, 10 true and false items and 10 items calling for a single response out of a possible 40. The responses deal with aesthetic judgment provoked by the photographs and the reasons for such judgment.

3. Directions for administering and correcting the test, including a set of correcting masks.

The general structure of the test is as follows: In each of three separate parts the person being tested is shown by means of an opaque projector a set of ten photographs of objects used or seen in everyday life: some of the photographs are dual representations, one of good design and the other of poor design.

In part one he is asked to check four out of eight responses for each of ten questions indicating his preference to the art qualities of the objects being shown.

In part two there are ten true and false items and therefore ten responses.

In part three the person being tested is asked to check one item out of four for each of ten questions indicating a response to the art qualities of the objects being shown.

To recapitulate: forty responses are required in part one and ten responses each in parts two and three, in all a total of sixty responses.

The items were chosen on the basis of typical art choices a young adult or adult is required to make in some phase of his daily living, i.e.: choices of clothing, furniture, household appliances and accessories, textiles, examples of advertising and architecture.

Preliminary testing included presentation of the test

to ten experts followed by actual testing in classrooms of the Monadnock Region of New Hampshire.

Selection of the Problem.--Along with many other things our schools have been delegated to a large extent the responsibility for public taste. Tannahill[1] expresses it as follows:

> "Every child should be encouraged to develop good taste in making choices in his school and home life, and should be led gradually toward his later need for critical judgment in choosing clothes, furniture, and other necessities of life. With keener discrimination on the part of our young people, the future should bring better results in our industrial products."

To some extent the school has failed in the job of helping boys and girls to learn the art of good taste. One need only walk down the average thoroughfare of the typical American town or city to see the results of the lack of proper art education. A conglomeration of every type of architecture greets the onlooker. He sees everything from a tiny five-room bungalow designed to look like a ranch house to a huge dwelling made to resemble a would-be Parthenon. If one observes the dress of the people walking down the street he sees a distinct resemblance in all the clothing which the people wear. If Victorian puffed sleeves, the bustle, hairbows or sheep-skin lined shoes are in vogue, practically every woman on the street wears one or more of these items whether it becomes her or not.

1/ Sally B. Tannahill, Fine Arts For Public School Administrators, Columbia University Press, New York, 1941, p. 6.

We can therefore conclude that there is a need for art education which meets the needs of everyday life and that the secondary school could make a more definite effort in this direction. In the final analysis educators and art educators in particular must realize that we are all consumers and as Harriet and Vetta Goldstein[1/] say:

> "Every time we make a purchase, however humble, we are consciously or unconsciously using our power to choose. Since art is involved in most of the objects seen and used every day, one of the great needs of the consumer is a knowledge of the principles fundamental to good taste."

It is in the spirit of the above quotation that the writer approached the problem of measuring appreciation as related to everyday living.

2. Definition of Terms

Phases of Art Judgment.--In determining what phases of art judgment are involved in reacting to everyday art objects the following subdivisions were arrived at: (They are the ones used by many of the writers in the field of appreciation and are in a sense basic to all art judgment.)

1. Function or use
2. Form (Beauty of Form as well as suitability of Form)
3. Line Relationships
4. Color and Color Relationships
5. Decorative Treatment
6. Honesty of Material

1/ Harriet Goldstein and Vetta Goldstein, Art in Everyday Life, The Macmillan Company, New York, 1944, p. 1.

Function is defined by Faulkner, Ziegfeld and Hill[1] in this manner:

> "If the term 'function' is to be interpreted narrowly as referring only to utility, then it would seem that artists work in a way which is dual-purposed: they seek not only to make a product useful and expressive of its use (functional) but also to make it beautiful (artistic). But are these two aspects of the artist's work separate? If function is defined as 'the natural and proper action of anything' the concept includes consideration of both use and beauty."

Function or use is then an important consideration in judging everyday art objects.

Form of a necessity follows function or use and is our next consideration. The authors quoted above define it in the following way:

> "Form, therefore, is structure. It is not surface. It refers to the skeleton and muscles of the body rather than to the skin, to the trunk and branches of a tree rather than to the bark, to the whole organization of a building rather than to the decoration. It can also refer to the forces and tensions that make the object what it is. Form is more than outline or external surface."[2]

Line and line relationships can create desired effects in clothing, furniture, architecture and other everyday art objects. With line then, "....an artist may make a building, a statue, a painting, or a piece of furniture look restful, or alive and imposing, or excited and moving."[3]

Line then is of importance in evaluating everyday art objects.

1/ Ray Faulkner, Edwin Ziegfeld, Gerald Hill, Art Today, Henry Holt and Co., New York, 1949, p. 161.

2/ Ibid., p. 176.

3/ Ibid., p. 181.

The standard definition of color describes it as something which has three dimensions or attributes. They are hue, value and intensity. It is interpreted in a broader sense in this thesis. The appropriateness of color to everyday art objects and to its surroundings is the basic thing to be measured in this test of art appreciation.

Decorative treatment is considered to mean that "....the decoration should be suitable for the material and for the service it must give."[1/]

Honesty of material, the final phase of art judgment to be considered in the test of art judgment, as related to everyday objects is an important one, especially in this modern age of synthetic materials. Plastic materials, especially are made to look like everything they are not (wood, marble, cloth, etc.).

> "Each material has inherent possibilities and limitations which determine to a large extent what can and cannot be done with it. Glass cannot be made as thin and extended as metal and remain strong; stone lends to shapes and textures quite different from concrete. Not only the material itself, but the way of working it, affects the design. Thus, clay may be shaped by hand, or cast in molds; wood may be carved and worked by hand, or machined into large sheets of plywood."[2/]

Honesty of material means therefore that the material should be suited to the object of what it is made.

1/ Harriet Goldstein and Vetta Goldstein, op. cit., p. 12.

2/ Ray Faulkner, Edwin Ziegfeld, Gerald Hill, op. cit., p. 252.

In planning this test of art judgment the preceding factors were taken into consideration and the test was conceived as something to measure a person's judgment of design and beauty in those objects which surround him.

3. Research Procedures and Techniques

Preliminary Steps.--The term judgment as related to the test subject matter had to be defined as well as art as related to everyday living.

The definition and illustration of each element involved in judgment had to be considered.

The selection of illustrations from magazines and other sources which best illustrated each of the above elements had to be made.

After the above had been completed the writing of the items began.

When the questions were completed they were submitted to ten art specialists; teachers in the field of art at the secondary level for item selection and partial validation. The test was then given in its entirety to 200 representative high school pupils in the towns of Peterborough, Jaffrey, Concord and Nashua, New Hampshire for the purpose of item analysis. In its final refined form the test was given to 500 secondary school pupils in the eleventh and twelfth grades in the above-named towns and the results recorded to establish the test's validity and reliability.

Very little material has been written in the area of art judgment as related to everyday life. The outstanding works are "Art Today," by Faulkner, Ziegfeld and Hill and "Art in Everyday Life," by Harriet and Vetta Goldstein. Both of these texts have been quoted on previous pages. The Owatonna Art Projects as sponsored by the University of Minnesota offered valuable material as put into practice in the classroom. The author was familiar with this material, having used much of it in his classroom teaching. Many other books were consulted and they are listed in the bibliography at the close of this thesis.

For the preparation of statistics and of the test material itself several books on measurement and statistics were used.

Data secured.--The following scores were secured:

1. Test scores of 50 students studying art at secondary level (juniors and seniors in high school).
2. Test scores of 50 students not studying art as above. These were used in the final administration of the test to make a comparison with the above group.
3. Grades, Intelligence Quotients, Ages and Test Scores

An item analysis was worked out for each item to determine statistically whether the difference was significant between the upper and the lower groups on a single item.

This was done by finding the percentage difference between the two groups and dividing by the standard error of the difference. The formula used was as follows:[1/]

$$SD_{diff} = \sqrt{\frac{P_1Q_1}{X_1} + \frac{P_2Q_2}{X_2}}$$

and finally:

$$\frac{P_1 - P_2}{SD_{diff}}$$

1/ William J. Micheels, and Ray Karnes, Measuring Educational Achievement, McGraw, Hill Book Co., Inc., New York, 1950, p. 480

CHAPTER II

REVIEW OF PREVIOUS RESEARCH

1. Tests in Art Judgment

Texts on Art Judgment.--Very little has been done to develop effective measurement of judgment in art. There are tests which purport to measure art abilities but only two which measure judgment or appreciation. These two are totally different in nature and will be discussed later in this chapter.

Texts in Art Judgment or Appreciation are, however, more numerous than tests. Several textbooks have been written which expose pupils to a course in Art Judgment but none of these have developed tests or measures which determine how much judgment a pupil has or has not developed by the end of the course.

One of the most outstanding of these texts makes this statement concerning Art Appreciation:

> "Art Appreciation is far more than knowing names and of important artists and their work. It involves attitudes, feelings, emotions, preferences and personal tastes for these to a large extent determine the manner in which you dress and furnish your living quarters as well as your reactions to the buildings, paintings and sculpture that you see."1/

1/ Ray Faulkner, Edwin Ziegfeld, Gerald Hill, Art Today, Henry Holt and Co., New York, 1949, p. xxvii.

This certainly shows an awareness of the problem and indicates the importance of being able to make everyday art choices. Therefore a test which measures a person's ability to make these choices is of educational value.

Early experiments.--The writer has seen tests improvised in the classroom to measure appreciation of architecture and flower arrangement. In these two tests two examples, one well designed and the other poorly designed were projected on a screen successively. The pupil then had to make a choice or judgment as to which was the better of the two. There were no principles however on which to make a choice, other than what the pupil thought.

The research reveals no other recorded experiments of this nature.

Later studies.--There are two specific tests which have been designed to measure aesthetic judgment. Probably the most well known is the Meier Art Judgment Test[1/] published in 1940 and formerly known as the Meier-Seashore Art Judgment Test. One hundred art specimens were selected with great care for the variety of art elements involved in aesthetic judgment and are presented to pupils in two forms; one the original and the other a slightly altered form. The pupil is told that they are different and is asked to select the form most pleasing to him. The difference between the two pictures involves

1/ Norman Charles Meier, Meier Art Tests; I, Art Judgment, Bureau of Educational Research and Service, University of Iowa, 1940.

factors of design. Another limiting factor is the fact that the test is based almost entirely upon the graphic arts with the assumption that this is also a measure of aesthetic judgment in other areas such as architecture, sculpture. As reported in The Third Mental Measurements Yearbook[1] however: "Correlation between the scores on the earlier version of the test with measures of aesthetic judgment are generally low, and the assumption that this test is a measure of aesthetic judgment in all areas is not proved."

With regard to the factors of design element in this test the review further states:

> "To assume that aesthetic judgment is based upon the ability to respond to design is a misleading oversimplification. There are many other factors such as expression, color, materials, subject matter, and all their interrelationships, that enter into the making of an aesthetic judgment."[2]

The review further indicates that this test measures well what it attempts to measure, but it is obvious from the above criticisms that it is not directly related to the consumer education idea which implies a more practical emphasis. Despite this fact, "....it is the most satisfactory of all the art tests which have been constructed."[3] This certainly shows a need for a test which measures judgment of art objects as dealt with in everyday life.

1/ Edwin Ziegfeld, Review, The Third Mental Measurements Yearbook, Rutgers University Press, New Brunswick, 1949, p. 172.

2/ Ibid., p. 172.

3/ Ibid., p. 172.

The McAdory Art Test is somewhat like the Meier Art Judgment Test, but it has only 72 pairs of plates, 24 of which are in full color. It calls for reactions to a wide variety of materials, including clothing, furniture and rugs. It is not listed in the latest Mental Measurements Yearbook and is therefore not to be considered in the same class as the Meier Art Judgment Test.

Barrett[1] undertook an investigation to determine the validity and relation to intelligence of the McAdory Art Test, the Meier Art Judgment Test, the Knauber Test of Art Ability and the Lewrenz Tests in Fundamental Abilities of Visual Art. It was found that intelligence influences art test scores and correlations were found in all of the above tests except the McAdory test. It was also discovered that the McAdory test is of little value in predicting success in school art, but that the Meier test has some predictive value.

The area of measuring art judgment has obviously not been developed to its fullest extent. Wickiser[2] says:

> "Most research in the fine arts starts with rational hypotheses based on the nature of art products rather than empirical investigation of the physical and psychical nature of art as one continuous human process of creation culminating in appreciation.

1/ Harry O. Barrett, An Examination of Certain Standardized Tests to Determine Their Relations to Classroom Achievement and to Intelligence, Journal of Educational Research 42: 398-400; January, 1949.

2/ Ralph L. Wickiser, Fine Arts, Journal of Educational Research, 2: 141; April, 1952.

> Investigations should be undertaken by objective researchers into those aspects of this total art act which can be scientifically measured to determine whether there are significant correlations between physical being, mental states, emotional attitudes, feeling and creativity."

2. Tests of Art Judgment or Appreciation in Allied Arts

Tests in appreciation of literature.-- Perhaps it is because there is less difficulty in measuring appreciation in the other arts that so much has been done.

In the field of literature there are many tests of appreciation. Among these are the Logasa-Wright Tests for the Appreciation of Literature, the Carrol Prose Appreciation Tests, the Cook-Bixler Test and the Cooperative Literary Comprehension and Appreciation Test. The latter two involve the presentation of pairs of items from which the pupils are asked to select the best expressed or to match the mood of a passage with a corresponding thought or idea.

The number of tests in this field is more numerous than that in the area of art appreciation.

Tests in appreciation of music.-- The measurement of music appreciation has been effectively developed in the form of the Kwalwasser-Dykema Music Tests which test musical knowledge and appreciation.

Other musical tests such as the Seashore Musical Talent Tests measure musical talent only.

Fisher[1] did an effective test on the measurement of musical appreciation. This test involves the presentation of musical samples by means of a phonograph from specially prepared discs to the group to be examined. Responses are indicated on an answer sheet and afford opportunity for a multiple choice type of reaction.

Conclusions.-- On the whole the allied arts have done a better job of measuring judgment appreciation in the respective fields. Hilpert[2] among other educational authorities feels that art education has not kept abreast in scientific investigation with the other subject matter areas, hence a definite need for a measuring device in art judgment.

1/ William R. Fisher, The Measurement of Musical Appreciation, Unpublished Doctorate Thesis, Boston University, 1949.

2/ Robert S. Hilpert, Instruction in Art, Bulletin No. 17, National Survey of Secondary Education, Monograph No. 25, Part II, pp. 67-68.

CHAPTER III

PROCEDURES

1. Selection of Items

In selecting the type of item to be included in the test on Art Judgment many tests were consulted. Since a real life situation calls for making definite choices the writer felt that the test should present the type of item which called for a choice of a particular item in preference to another item which is less desirable from an aesthetic and functional point of view. A person should also have definite reasons why he makes a decision regarding a choice, therefore it was felt that the test should have reasons included in the test for making a definite choice, whether it be between two neckties or the color scheme of a room. This indicated a multiple choice type of item. In examining many objective tests it was discovered that this type of item is generally used. "Large-scale testing programs are coming to use the multiple choice form or its variants almost exclusively."[1/] On the basis of the above information the writer decided on using the multiple choice type of item in Parts I and II of the test. Part II was made into a true false group of questions to provide a variety in the type of item and to

1/ Dorothy C. Adkins, Construction and Analysis of Achievement Tests, U. S. Government Printing Office, Washington, D. C., 1947, p. 39.

provide an opportunity for quick reactions and the type of snap decision which has to be made upon certain occasions.

The content of the items had to be based on the real-life art decisions which people have to make in everyday life. Therefore a breakdown had to be made of what these decisions were. The breakdown included the following:

1. Selection of items of personal clothing and accessories.
2. Selection of items for the furnishing of a home and its accessories.
3. Selection of types of home architecture.
4. Selection of textiles which are used in home decoration.
5. Selection of color schemes in interior decoration.
6. Selection of advertising design.
7. Selection of items which are suitable for gifts.

All of these things are realities which people have to deal with in some form or other in their daily living. They form public taste because: "Public taste is formed mainly by publicity and the articles of daily use. By these it can be educated or corrupted."[1/] It is therefore important to be able to make these choices with understanding and discrimination.

1/ Gyorgy Kepes, Language of Vision, Paul Theobald, Chicago, 1948, p. 7.

2. Selection of Samples

Before the questions could be written up in the form of items, samples of everyday art objects in the category of well designed as well as poorly designed had to be found. These were selected from magazines, newspapers, catalogues and books; the places where many people get their ideas of what to buy or in the case of the catalogues where they actually make their choices. Items were selected in the form of photographs to correspond with the type of choices outlined in Part I of this chapter. An article or object was considered to have good design, form, line, color, decorative treatment and honesty of material if it coincided with the definition of these terms as outlined in Chapter I, Part II. It was considered not acceptable if it did not possess these qualities. Many illustrations were selected and many were eliminated if they did not appear to be as good examples as required. When this process was completed, the writing of the items began.

3. Writing of the Items

The construction of test items is a creative task which requires much thought and consideration. In writing the items for this test each illustration was carefully considered, both from the point of view of what response was involved and what elements were to be considered in making the response. These elements as described heretofore are

important in judging the objects under consideration and since this is a test of art judgment of those objects which one confronts in everyday living, these elements of judgment were the motivating factors in writing the items. In a broader sense this feeling of judgment can be expressed as follows: "Each person is faced with the necessity of selecting such articles of common use as clothing and furniture, and the pleasure enjoyed from such things depends to a large extent on how wisely they are chosen."[1]

Many of the illustrations were shown to high-school boys and girls before the test items were written and to other art educators to receive their reactions to them. It was interesting to observe that the illustrations of well designed objects were recognized as being well designed without any particular analysis being made at the time. Many of the undirected reactions such as "Good color combination," "Restful to the eye," "Pleasing to the eye," were incorporated into the wording of the responses.

In constructing a test one must consider that it is likely to contain some worthless items as well as those which will be of value. It is necessary, therefore, to evaluate each item carefully. The test must be administered to a large enough sample in order that each item may be evaluated

1/ Ray Faulkner, Edwin Ziegfeld, Gerald Hill, op. cit., p. xxvi.

as related to the responses it receives. One makes an item analysis to determine the decoy value of each item's choices, its discriminating power and its order of difficulty in an index of ease.

CHAPTER IV

ITEM ANALYSIS AND TEST REFINEMENT

Facts concerning administration of test.-- The test of art judgment was given to 500 students in the eleventh and twelfth grades of high schools in Peterborough, East Jaffrey, Concord and Nashua, New Hampshire. The sampling was taken from a group of one hundred pupils taking art courses in the respective schools and four hundred not taking art courses. Intelligence Quotients were secured for all pupils. (Otis Quick Scoring Mental Ability Test). The mean Intelligence Quotient of the pupils tested was 107.1.

Table 1. Intelligence Quotients of 500 Cases Tested For Item Analysis Range and Mean Intelligence Quotient For Each Grade Tested.

Grade	Range	Mean Intelligence Quotient
(1)	(2)	(3)
11	76 - 133	104.2
12	79 - 139	109.0
Total	76 - 139	107.1

The test was constructed with one third more items than necessary in order to allow for those items which would have to be eliminated.

The test consists of three and one half pages containing instructions, sample questions and choices. Answers are given on the same sheet as the questions. The form is identical with that of the final form of the test as seen in Appendix A. The answer sheets were corrected with a perforated mask for each page and all responses tabulated with the number of responses to each choice of each item recorded.

Value of items.-- When the tabulated responses were checked it was discovered that each choice within an item had received some responses. The relative decoy value of the various possible choices for each item in the case of Part I and Part II approximated what had been anticipated in determining the choices to be used. As a result few changes were necessary in the final revision of the test.

Test of significance.-- Of the various tests of significance to determine the discriminating power of an item the one used in this study is one which compares two groups of responses, one by those pupils in the highest quartile and the other by those pupils in the lowest quartile. The idea behind this procedure is that the upper quartile of the class should get an item right more often than the lower quartile of the class.

Due to the element of chance a null hypothesis is assumed; that there is no difference between the two percentages but that attributable to chance. In other words: "Any test of significance for a difference between two statistics is zero. We

shall characterize all such hypotheses as null hypotheses."[1]

Peatman[2] discusses a test of significance for a difference between two statistics. He says: "When samples are random and consist of 25 or more cases the assumption (that it is a normal distribution) regarding the sampling distribution of difference is usually warranted for the statistics considered."

The test was given to 500 pupils representing various abilities. This therefore allows 125 cases in each quartile which more than meets the requirements.

Using N_1 to represent the number in the upper group marking items correctly, X_1 the total number in the upper group, P_1 the percentage of the upper group marking the item correctly, Q_1 the percentage of the upper group marking the item incorrectly and N_2, X_2, P_2 and Q_2 the same designation for the lower group the formula for finding the standard error of the difference is as follows:[3]

$$SD_{diff} = \sqrt{\frac{P_1Q_1}{X_1} + \frac{P_2Q_2}{X_2}}$$

The final step is to divide the percentage difference between the two groups by the standard error of the difference:

$$\frac{P_1 - P_2}{SD_{diff}}$$

1/ John Gray Peatman, Descriptive and Sampling Statistics, Harper and Brothers, New York, 1947, p. 401.

2/ Ibid., p. 403.

3/ William J. Micheels, M. Ray Karnes, op. cit., p. 480.

Lawshe[1] has developed a nomograph which can be used in assigning D values (discriminating values) to individual test items. It is very simple to use and was used for this purpose as well as the method of dividing the percentage difference by the standard error of difference.

Micheels and Karnes[2] state in regard to the preceding: "If the resultant ratio exceeds 2, the item is said to discriminate. All items having a ratio of less than 2 should be revised or eliminated from the test." Therefore, any item which had a resultant ratio of 2 or more was retained in the test and any item which had a resultant ratio of less than 2 was eliminated from the test.

A tabulation of all the items finally used in the test shows the percentage of correct responses in the highest and lowest quartiles, the difference of these percentages, the standard error of difference and the D values. These tables appear in the next chapter and are discussed under the topic "Item Analysis."

Index of ease.-- The relative difficulty of each item was determined by computing the percentage of correct responses from the table of responses. The item receiving the greatest number of correct responses was considered the least difficult and is listed as number one in the index of ease. All

1/ C. H. Lawshe, Jr., Principles of Personnel Testing, McGraw-Hill Book Co., Inc., 1948, p. 190.

2/ William J. Micheels and M. Ray Karnes, Measuring Educational Achievement, McGraw-Hill Book Co., Inc., 1950, p. 480.

items are listed in this fashion. The most difficult is listed last.

Table 2. Index of Ease Showing the Relative Difficulty of Each Item in Each Part of the Test in Art Judgment

Part I		Part II		Part III	
Place in Index of Ease	Test Item Number	Place in Index of Ease	Test Item Number	Place in Index of Ease	Test Item Number
(1)	(2)	(3)	(4)	(5)	(6)
1	5	1	6	1	5
2	6	2	3	2	3
3	9	3	4	3	4
4	8	4	5	4	10
5	10	5	10	5	1
6	1	6	1	6	9
7	2	7	9	7	2
8	4	8	2	8	6
9	3	9	7	9	7
10	7	10	8	10	8

CHAPTER V

SUMMARY AND CONCLUSIONS

1. Meaning of Data

Frequency distribution.-- In organizing the scores of the test it was discovered that in the distribution of 500 test scores there was a median of 60 and an arithmetic mean of 58.38. Although it is to be realized that test results are not to be considered complete if they are based entirely on the median or the mean, they do describe the tendency of the scores to pile up near the middle of the distribution. This is clearly indicated in the table below.

Table 3. Frequency Distribution of 500 Test Scores Showing Median and Arithmetic Mean

Class Interval		Frequency	Deviation	fd
Integral Limits	Midpoint			
(1)	(2)	(3)	(4)	(5)
86 - 88	87	1	9	9
83 - 85	84	1	8	8
80 - 82	81	2	7	14
77 - 79	78	8	6	48
74 - 76	75	8	5	40

(concluded on next page)

Table 3. (concluded)

Class Interval		Frequency	Deviation	fd
Integral Limits	Midpoint			
(1)	(2)	(3)	(4)	(5)
71 - 73	72	14	4	56
68 - 70	69	33	3	99
65 - 67	66	44	2	88
62 - 64	63	76	1	76
59 - 61	60	79	0	
56 - 58	57	66	1	66
53 - 55	54	55	2	110
50 - 52	51	27	3	81
47 - 49	48	30	4	120
44 - 46	45	13	5	65
41 - 43	42	13	6	78
38 - 40	39	12	7	84
35 - 37	36	5	8	40
32 - 34	33	3	9	27
29 - 31	30	3	10	30
N = 500		Median = 60		A.M. = 58.38

In examining the following Item Analysis Tables there appears to be a good range of difficulty in the items of the test. In Part I there is a range of 2.97 to 10.13; in Part II from 2.10 to 8.53 and in Part III from 2.39 to 9.31.

Table 4. Item Analysis, Part I. Discriminating Power and Relative Ease of Items Based on 500 Cases.

Item	Upper 100		Lower 100		$P_1 - P_2$	SD_{diff}	$\frac{P_1 - P_2}{SD_{diff}}$
	N_1	P_1	N_2	P_2			
1	68	68	40	40	28	6.79	4.10
2	60	60	34	34	26	6.84	3.91
3	48	48	28	28	20	6.74	2.97
4	60	60	34	34	26	6.93	3.17
5	96	96	42	42	54	5.33	10.13
6	88	88	42	42	46	5.92	7.77
7	62	62	24	24	38	6.49	5.85
8	82	82	38	38	44	6.25	7.04
9	88	88	40	40	48	5.90	8.13
10	74	74	34	34	30	6.48	4.62

Table 5. Item Analysis, Part II. Discriminating Power and Relative Ease of Items Based on 500 Cases.

Item	Upper 100		Lower 100		$P_1 - P_2$	SD_{diff}	$\frac{P_1 - P_2}{SD_{diff}}$
	N_1	P_1	N_2	P_2			
1	88	88	40	40	48	5.90	8.13
2	88	88	38	38	50	5.86	8.53
3	96	96	88	88	8	3.80	2.10
4	94	94	78	78	16	4.78	3.34
5	98	98	94	94	4	1.50	2.66
6	74	74	44	44	30	6.64	4.53
7	80	80	36	36	44	6.24	7.04
8	82	82	34	34	48	6.12	7.84
9	73	73	54	54	19	6.78	2.82
10	100	100	66	66	44	5.47	8.04

Table 6. Item Analysis, Part III. Discriminating Power and Relative Ease of Items Based on 500 Cases.

Item	Upper 100		Lower 100		$P_1 - P_2$	SD_{diff}	$\frac{P_1 - P_2}{SD_{diff}}$
	N_1	P_1	N_2	P_2			
1	62	62	24	24	38	6.41	5.91
2	84	84	34	34	50	6.00	8.33
3	66	66	16	16	50	6.00	8.33
4	52	52	36	36	16	6.92	2.39
5	80	80	32	32	48	5.17	9.28
6	44	44	12	12	32	5.96	5.36
7	90	90	46	46	44	5.83	7.54
8	64	64	38	38	26	6.07	4.28
9	96	96	46	46	50	5.37	9.31
10	74	74	36	36	38	6.53	5.81

Intelligence as related to test scores.-- Barrett[1/] in his study to determine the validity and relationship to intelligence of certain art tests discovered that intelligence influences art test scores. This would seem true of the writer's test as indicated by the following table where pupils with higher Intelligence Quotients did secure high scores in the test of art appreciation. The person with the highest Intelligence Quotient in the group tested received the highest test score. This does not mean however, that a high Intelligence Quotient always insures a high score in the test although there is a tendency towards this. For instance, it is to be noted that one person with an Intelligence Quotient of 94 received a score of 71 in the appreciation test while 25 people with Intelligence Quotients in the 90 to 99 range received marks of between 60 and 70 in the test.

1/ Harry O. Barrett, An Examination of Certain Standardized Tests to Determine Their Relations to Classroom Achievement and to Intelligence, Journal of Educational Research 42: 398-400; January, 1949.

Table 7. Comparison of Test Scores and Intelligence Quotients in the Upper Quartile

Intelligence Quotient	Test Score	Intelligence Quotient	Test Score
(1)	(2)	(1)	(2)
139	88	113	67
133	84	112	73
131	82	112	72
129	81	112	71
129	77	112	70
129	76	112	69
129	73	112	69
129	70	111	71
129	69	111	70
129	67	111	66
128	65	110	78
127	71	110	72
126	69	110	68
126	67	109	65
123	76	108	77
123	67	107	70
123	65	107	68
122	67	107	66
121	79	106	66
121	76	105	66
121	69	104	66
121	68	104	66
121	65	103	72
118	79	103	66
118	73	103	65
118	71	102	75
118	71	102	74
115	75	102	67
115	69	102	67
115	67	102	65
115	66	102	65
114	78	101	72
114	74	101	70
114	73	101	66
114	69	100	66
114	68	100	65
114	68	99	66
114	67	99	66
114	65	99	65
		99	65

(concluded on next page

Table 7. (concluded)

Intelligence Quotient	Test Score	Intelligence Quotient	Test Score
(1)	(2)	(1)	(2)
98	70	95	67
98	68	95	66
98	68	94	71
98	66	94	68
97	68	94	68
97	65	93	68
97	65	92	66
97	65	92	66
96	73	92	65
96	66	91	68
96	65		

Twenty-seven people with Intelligence Quotients between 90 and 99 received scores in the upper quartile of the writer's test as compared with 122 in the same quartile with Intelligence Quotients of 100 and above. This would indicate that in the sample taken intelligence could be a factor which helped in securing a good mark. A computation using the Pearson formula was made using the entire 500 test scores and corresponding Intelligence Quotients to determine the coefficient of correlation between the two. The formula used was as follows:[1/]

$$r = \frac{\Sigma \frac{xy}{N} - cxcy}{cxcy}$$

Substituting figures from the test data:

$$r = \frac{6.37 - .005}{3.008 \times 4.002} = .529$$

1/ Harry A. Greene, Albert N. Jorgenson and Raymond J. Gerberich, Measurement and Evaluation in the Secondary School, Longmans, Green and Co. New York, 1948, p. 557.

A coefficient of correlation of .52 has only 14 per cent forecasting efficiency and shows evidence of medium relationship[1/] which would indicate that test scores of this test would not necessarily correspond with the Intelligence Quotients and that a high test score would not necessarily mean a high Intelligence Quotient, although there is some evidence that a high Intelligence Quotient could help a person to get a good mark on the test. This also shows that a person with a high Intelligence Quotient does not always have good art judgment, but it does not mean that his sense of judgment could not be developed and improved by good art education. A person can be given the knowledge of the principles fundamental to good judgment if he is intelligent enough to grasp these principles as stated previously.

Achievement in Art Course comparison.-- In comparing the scores of 50 pupils studying art in high school and 50 pupils not taking art courses it was discovered that those taking art did better on their scores than those not taking art courses. In the test score interval of 80 to 89 four people taking an art course scored as compared to none in the group not taking art courses. In the test score interval

1/ Harry A. Greene, Albert N. Jorgenson and Raymond J. Gerberich, Ibid., p. 564.

of 70 to 79 twenty-two people taking art courses scored as compared to fifteen in the group not taking art courses. In the test score interval of 68 to 69 fourteen people taking art courses scored as compared to eleven not taking art. In looking at the scores of the upper 125 pupils, 60 pupils taking art courses scored 65 or higher as compared to 65 not taking art courses. It is to be noted however, that the art pupils generally scored a few points higher than those not taking art courses.

Table 8. Test scores of pupils taking art compared to those of pupils not taking art.

Test Score Interval	Number of Art Course Pupils	Number of Non-Art Course Pupils
80 - 89	4	0
70 - 79	22	15
68 - 69	14	11
66 - 67	9	22
64 - 65	10	18
Totals..	59	66

Pupils taking art courses tended to make better scores on the test than those pupils not taking art courses.

Influence of class marks on test scores.-- An examination of test scores in the upper and lower one hundred test scores shows that class marks do have a tendency to correspond

with test score marks as seen in the table below.

Table 9. Comparison of Class Marks in the Upper and Lower One Hundred Scores on the Test in Art Judgment

Group	A's	B's	C's	D's
(1)	(2)	(3)	(4)	(5)
Upper One Hundred....	10	39	33	11
Lower One Hundred....	0	14	63	23

It is to be noted that there are no "A" pupils in the lower one hundred scores as compared to ten in the upper one hundred. There are 25 more "B" pupils in the upper one hundred than there are in the lower one hundred. There are many more "C" and "D" pupils in the lower one hundred than in the upper one hundred. As noted in column (3) of the above table there are 14 pupils in the lower one hundred group. This is in all probability due to the fact that judgment is an inborn quality in many ways, but like intelligence varies with the pupil. In some cases taste may be natively poor and need redirection and refinement. A test of this type would show the teacher where this exists and would be an aid in helping the pupil to develop his sense of judgment within the level of his ability to do so.

Limitations of the test.-- There is little question that the writer's test reveals a pupil's ability to judge

those art objects which surround him in his everyday life or his lack of it. It does not mean, however, that it will show his potentialities for art judgment. In some cases the ability to exercise good judgment is dormant because there has been no real opportunity for it to have been developed. In some cases judgment may be natively poor as mentioned heretofore and needs to be developed.

The writer's test does have value in that it shows the teacher the level of each pupil's art judgment or at least where the pupil is in this respect.

Lombardo[1] says:

> "An intelligent acquaintance with art forms and art structure will aid the student to develop a taste for beautiful things, whether they are household wares or personal trinkets. Taste is cultivated by exercising the sense of selection and discrimination, implicit factors in the creation of a work of art."

Here is the opportunity for good art teaching.

The test therefore can and does show the amount of art judgment a person has, but does not necessarily prove that a person is not capable of a higher degree of art judgment. This, in a sense, is a limitation of the test.

1/ Josef Vincent Lombardo, "The Function of Art in Education," The Art Education Bulletin (September, 1951), State Teachers College, Kutztown, Pa., Vol. 8, No. 6.

Another limitation of the test in terms of test results is the relatively limited type of sample. Actually the test was constructed by the writer for use in his own classes in rural New Hampshire towns. New Hampshire is essentially a rural state with few large cities and its people are limited in many ways by lack of art resources. There is, for instance, only one Art Museum in the state. Department stores and other stores where people buy their everyday art objects (clothes, furniture, etc.) do not offer as wide a range of selection as do the stores in the larger urban centers. Many people buy the objects referred to in this test by means of a catalogue from Sears Roebuck or Montgomery Ward. Some of the illustrations used in the test come from these catalogues. Here again choice is limited to two or three versions of the same item. These things limit a person, without question, and might have some bearing on the results of the test. It would be interesting to see how the results would compare with those from a large urban area where there were more cultural resources available.

The writer's test also measures only a part of the vast area of everyday art judgment, but the results of the test prove that it can be measured effectively. It is an indication that the test could be developed further and made more inclusive.

Test Reliability.-- In determining the over-all reliability of this test the "Chance-Half" Coefficient was used. Two "half scores" were obtained for each pupil. This was done by using the odd-numbered and even-numbered items. After the coefficient of correlation was obtained the Spearman Brown Prophecy Formula[1] was used in estimating the reliability of the test as follows:

$$r_{12} = \frac{2r_{\frac{1}{2}\frac{1}{2}}}{1 + r_{\frac{1}{2}\frac{1}{2}}}$$

where $r_{\frac{1}{2}\frac{1}{2}}$ is the correlation between scores on the "chance halves" of the test and r_{12} is the estimated reliability of the whole test. The following result was obtained:

$$r_{12} = \frac{2 \times .81}{1 + .81} = .895$$

A reliability of .90 is evidence of marked reliability[2] and since there is only .005 difference between .895 and .90 this would show that the test has a marked reliability as a whole.

1/ Harry A. Greene, Albert N. Jorgenson and Raymond J. Gerberich, op. cit., p. 589.

2/ Ibid., p. 564.

2. Recommendations For Further Research

If one can measure the judgment of everyday art as proved by this thesis and if art judgment can be developed by proper art education it would be interesting to see a study which compared test results before and after a good course in art appreciation as related to everyday art. This would be an effective study at either high school or college level.

Another area for research would be that of a comparison of the abilities of judgment of a group "required" to take an art course and those not required to take an art course. This would be effective at either the high school or college level in the last year. The point in reference here is that a person graduating either from high school or college should be able to make adequate art choices as he enters into the adult world.

Since our schools and colleges are in a sense responsible in many ways for public taste, these studies could show how effectively they are doing their individual jobs and would be a contribution to the literature of art judgment and appreciation.

3. Conclusions

In conclusion the writer feels that from the evidence gathered in the administration of this test of art judgment the following things are true:

1. Appreciation of everyday art objects can be measured effectively.
2. The test obviously does not measure intelligence.
3. Art judgment like intelligence varies with the pupil.
4. The results of the test can be used to determine what help a pupil needs to improve his sense of taste and appreciation.
5. The test is reliable and has certain face validity in that it measures what it purports to measure.
6. There is an opportunity for further research in the area of judgment of everyday art objects.

APPENDICES

INSTRUCTIONS FOR ADMINISTERING THE TEST

General instructions.-- The test may be administered individually or to a group. If given individually one section at a time may be given to the person being tested without projecting the material. If given to a group the material should be projected by means of a reflector type projector onto a ground glass daylight screen. The room should be in a semi-darkened condition and all persons seated so as to get a clear image of the pictures as they are projected.

Specific instructions.-- The following steps should be taken in administering the test:

1. See that everyone has a blank test and a pencil.
2. Have each person print his name, grade and date at the top of the test on page one.
3. Read the instructions at the top of the first page to the pupils and show them how to do the sample at the top of page one.
4. Have each person taking the test mark his sample.
5. Explain to them next that two illustrations will be shown on the screen, one following the other; the first to be projected for 30 seconds and the second to remain on the screen for 90 seconds. After seeing the second illustration they may start to mark their

responses. This allows a total of two minutes for each item. A total of 20 minutes will be allowed for Part I of the test.

6. Stop promptly at the end of the twenty minutes and direct attention to Part II of the test. Read the directions to the people taking the test and do the sample with them. The same procedure for projection and time limit for each item applies to this part of the test also with the exception that in those items where both illustrations appear on the same page the page is to be left in the projector for the full two minutes allotted the item. Stop promptly at the end of twenty minutes.
7. When Part II is completed, call attention to Part III, reading the instructions and doing the sample. When this is done start projecting the illustrations. In Part III only one page is shown for each item. Each of these pages or illustrations should be left in the projector for the full two minutes allotted to the item. Stop promptly at the end of twenty minutes.
8. Collect the tests. They are ready to be scored. See instructions for scoring.

PART ONE
PAGE ONE

Directions:

Bottom of mask should be placed bottom of page one of the test and so that the left side of the mask is just to the right of the numbers on the test page. The openings appear where the correct response should be. If no check appears through the opening in the mask, the item is wrong

1.

2.

3.

4.

5.

6.

PAGE TWO
Place top of mask at top of page and left side to right of numbers on test page.

7.

8.

9.

10.

PART TWO
True and false. Correct response is shown on mask If item on test page does not match, item is wrong.

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

PART THREE

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

INSTRUCTIONS FOR SCORING TEST

Correcting masks.-- Four masks are provided for scoring the different pages of the test, one mask for each page. Directions for using the masks are on them.

Directions for scoring.-- In Part I if all the responses are correct for each item, mark a four in the left-hand margin next to the number of the item. If less mark it accordingly. There is a possible score of 40 for this part of the test.

In Part II if the item is marked correctly place a three in the left-hand margin next to the number of the item. There is a possible score of 30 for this part of the test.

In Part III of the test if the item is marked correctly place a three in the left-hand margin of the test next to the number of the item. There is a possible score of 30 for this part of the test.

There are 100 possible points in the whole test.

The total score should be placed at the top of the paper.

THE TEST

AN OBJECTIVE TEST OF ART JUDGMENT IN EVERYDAY LIFE

Name JOHN SMITH Grade 12 Date 6/10/51

To the pupil: This test consists of a series of numbered illustrations. You are asked to watch the screen and when the illustrations appear, record your responses in the proper places.

Part I

In each of the questions of this part of the test two illustrations are shown. Indicate by checking in the proper space which of the remarks apply to either example.

Sample:

Top	Bottom	
0	0	Good color combination.
0	✓	Poorly designed.
✓	0	Good use of material.
✓	0	Good line relationship.

1.

Top	Bottom	
✓	0	Suitability to use.
✓	0	Good use of material.
✓	0	Good line relationships.
✓	0	Proportion.

2.

1st	2nd	
0	✓	Appropriate for decoration of cloth.
0	✓	Good color combination.
0	✓	Good use of form.
0	✓	Most orderly.

3.

Top	Bottom	
0	✓	Design fits space.
0	✓	Good form and line relationships.
0	✓	Appropriate use of decoration.
0	✓	Appropriate use of color.

4.

Top	Bottom	
0	✓	Appropriate surface design.
0	✓	Design fits lines of couch.
0	✓	Colors harmonious.
0	✓	Restful to the eye.

5.

Top	Bottom	
✓	0	Suitable color harmony for room on warm side of house.
0	✓	Suitable color harmony for room on cool side of house.

6.

Top	Bottom	
✓	0	Color harmony suitable for use on cool side of house.
0	✓	Color harmony suitable for use on warm side of house.

cont.- next page

	Top	Bottom	
7.	0	✓	Color harmony suitable for use on cool side of house.
	✓	0	Color harmony suitable for use on warm side of house.

	Top	Bottom	
8.	0	✓	Appropriateness to use.
	0	✓	Honest use of material.
	0	✓	Good proportion.
	0	✓	Treatment of surface.

	1st	2nd	
9.	✓	0	Good use of color.
	✓	0	Good use of form.
	✓	0	Good general design.
	✓	0	Suitability to use.

	1st	2nd	
10.	✓	0	Greater unity of design.
	✓	0	Appropriate as a cover design for pamphlet.
	✓	0	Pleasing to the eye.
	✓	0	More interesting variety of form.

Part II

In each of the proper spaces below, write plus (+) if true or probably true.
Write minus (-) if false or probably false.

Sample:
(-) The building shown has a unity of design which is pleasing to the eye.

(+) 1. The design for a studio couch cover in the bottom picture is more attractive and suitable for the purpose.

(+) 2. The necktie on the right has greater unity in its surface design.

(-) 3. The shoe at the top is designed to fit the foot more comfortably.

(-) 4. The first illustration shows silver, which is more practical for everyday use than the second illustration.

(-) 5. The upper illustration shows a more harmonious spacing of door and windows.

(+) 6. This is a well organized eye-catching advertisement which holds one's attention.

(-) 7. This advertisement, because of its simplicity, lacks consumer interest.

(+) 8. The upper lamp shows a more honest interpretation of design for a table lamp.

cont.--next page

(+) 9. The lower lamp has good proportions.

(−) 10. Both lamps are unsuitable and show poor design.

Part III

Select the one remark which is suitable to the illustration shown and check it in the proper place.

Sample:
(✓) Well designed.
( ) Good use of material.
( ) Suited to use.
( ) Poor line relationship.

1.
( ) Honest use of material.
( ) Well designed handles.
( ) Good proportions.
(✓) Inferior design.

2.
( ) Shows interesting variety of forms.
(✓) Monotonous.
( ) Strong sense of design.
( ) Inferior design.

3.
(✓) Unity of design.
( ) Weak design.
( ) Monotonous.
( ) Poorly arranged forms.

4.
( ) Clever and interesting design.
(✓) Poor use of material.
( ) Good form relationships.
( ) Good line relationships.

5.
( ) All objects in the room form a harmonious whole.
( ) Wallpaper design is especially suited to the room.
(✓) Wallpaper design too bold for use in this room.
( ) Wallpaper sets off furnishings.

6.
( ) Color scheme shows a lack of harmony.
( ) Color scheme would not wear well.
(✓) Color scheme would wear well.
( ) The greens clash with the blues.

7.
(✓) Overemphasis on decoration.
( ) Poor color relationships.
( ) Shows lack of balance.
( ) Would wear well.

cont.--next page

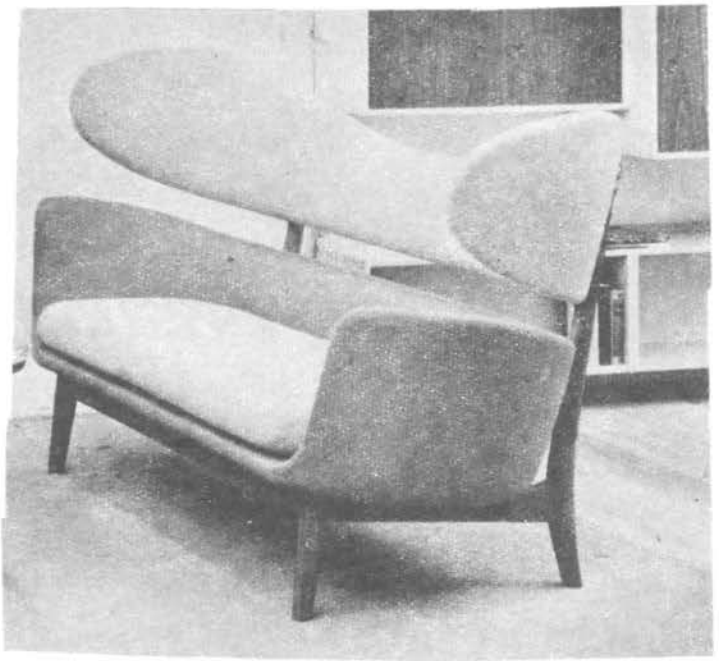
8.
(✓) Good use of material.
( ) Poor design.
( ) Poor form relationships.
( ) Lack of balance.

9.
( ) Represents highest standards of good taste.
( ) Pleasing arrangement of furniture and pictures.
(✓) Overdecorated.
( ) Lacks formality.

10.
( ) Well designed.
( ) Good use of material.
( ) Suited to use.
(✓) Poor handles.

ILLUSTRATIONS FOR TEST

PART ONE SAMPLE TOP



PART ONE SAMPLE BOTTOM

48

PART ONE QUESTION ONE BOTTOM

PART ONE QUESTION ONE TOP

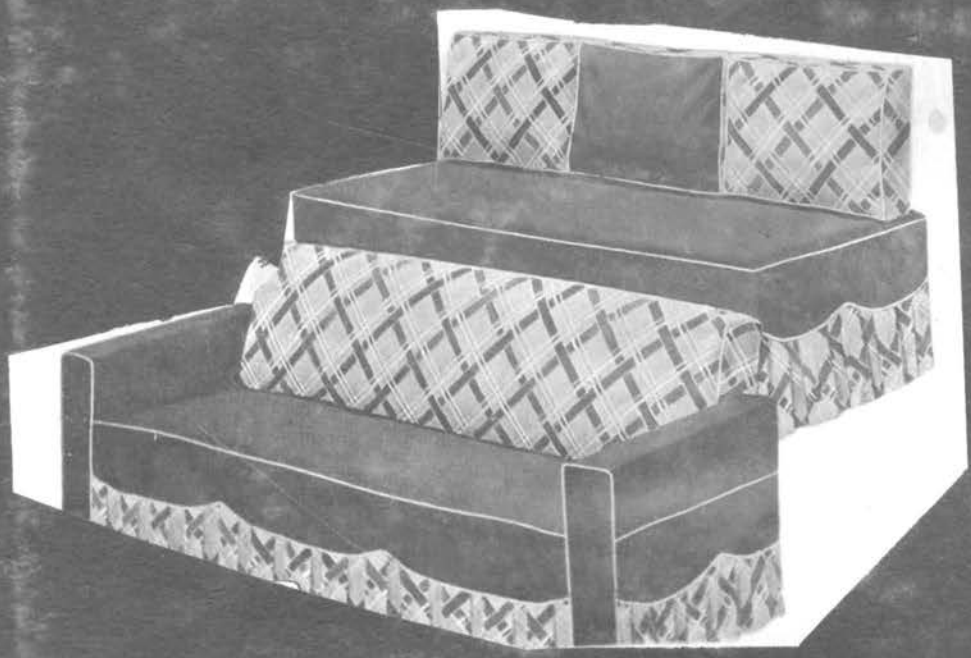
PART ONE QUESTION TWO TOP

PART ONE QUESTION TWO BOTTOM

PART ONE QUESTION THREE TOP

PART ONE QUESTION THREE BOTTOM

PART ONE QUESTION FOUR BOTTOM



PART ONE QUESTION FOUR TOP

PART ONE QUESTION FIVE TOP

PART ONE QUESTION FIVE BOTTOM

PART ONE QUESTION SIX TOP

PART ONE QUESTION SIX BOTTOM

PART ONE QUESTION SEVEN TOP

Part 1 Question Seven

PART ONE QUESTION SEVEN BOTTOM

PART ONE QUESTION EIGHT TOP

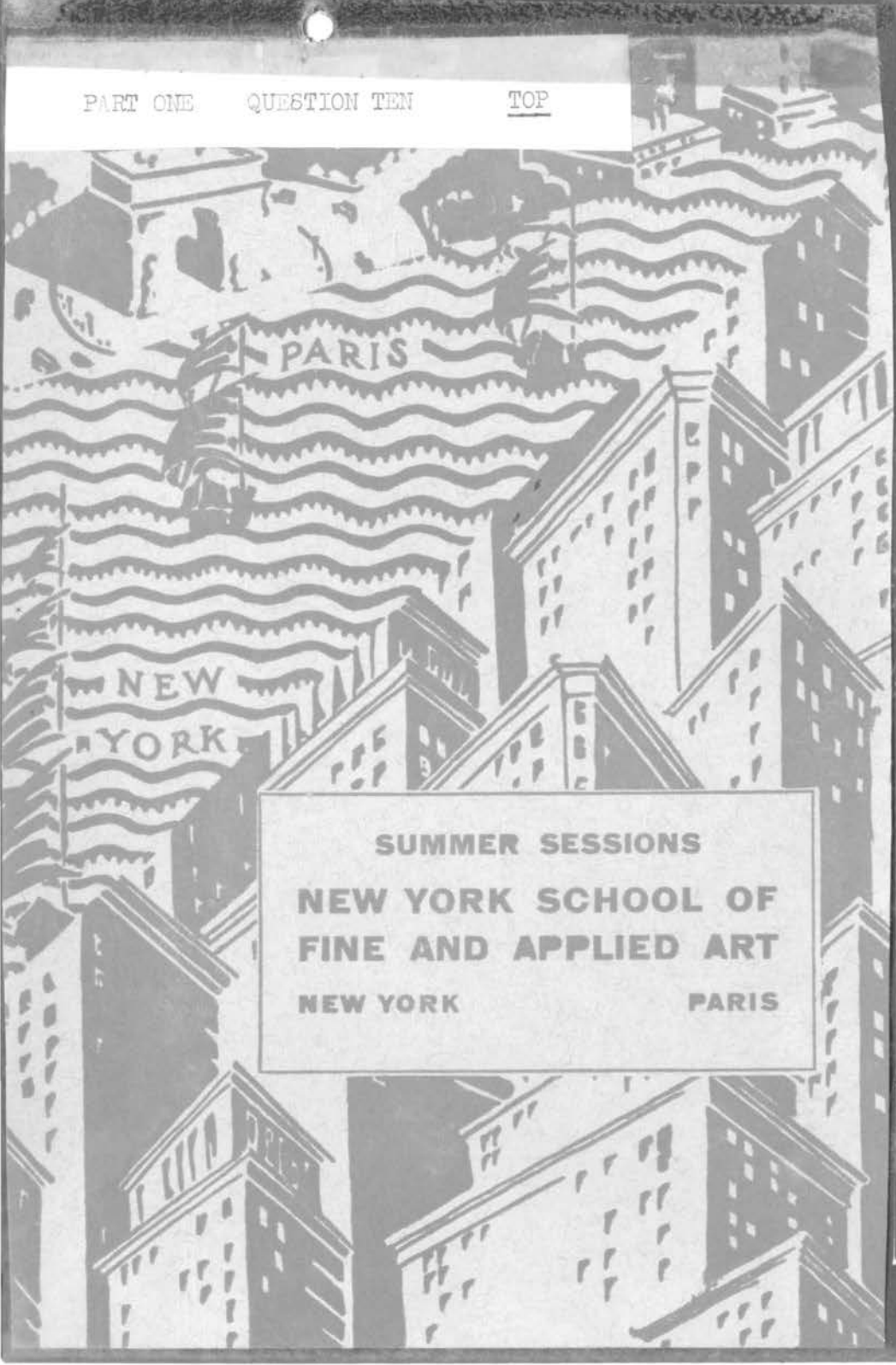
Part One Question Eight

PART ONE QUESTION EIGHT BOTTOM

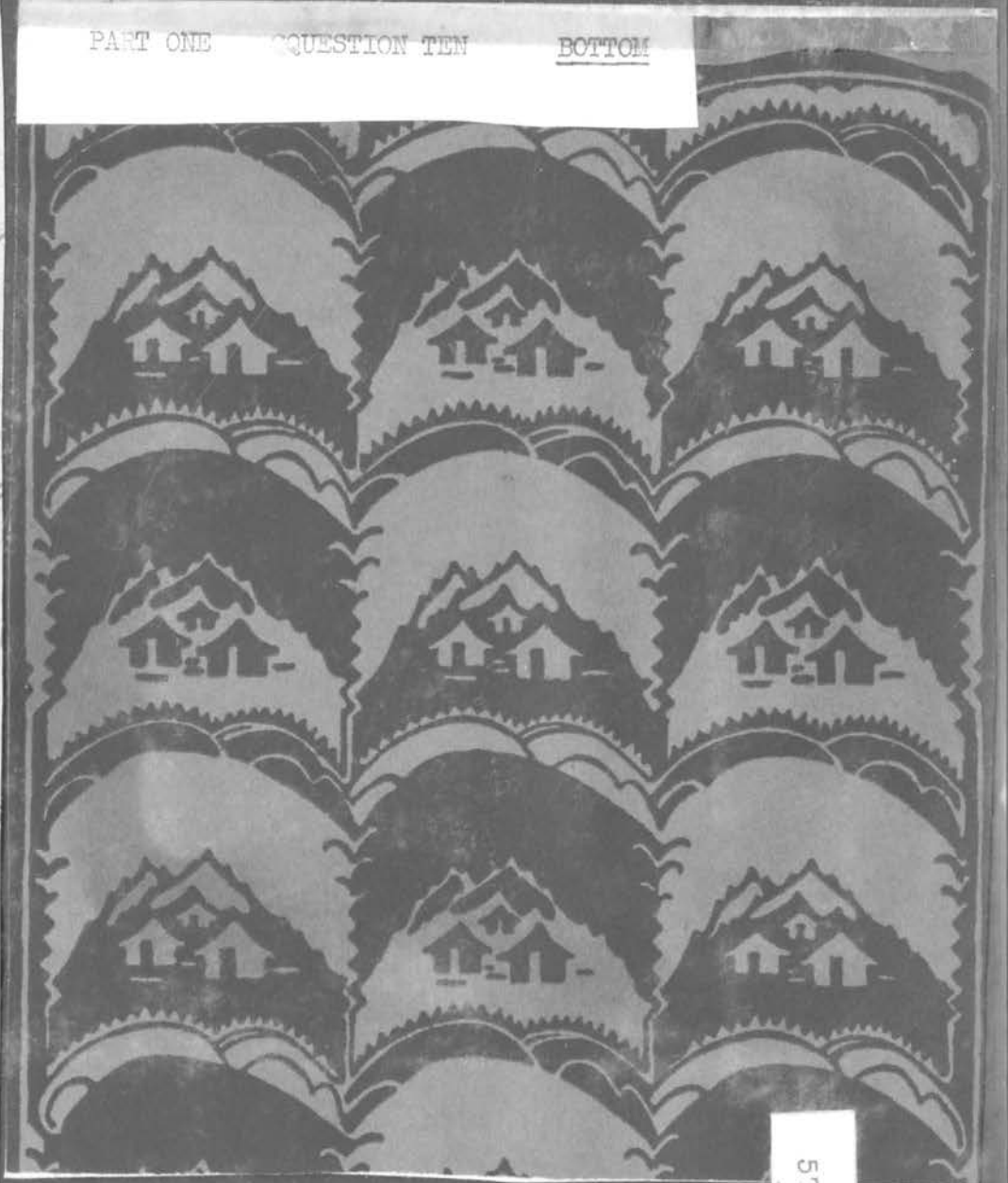
PART ONE QUESTION NINE BOTTOM

PART ONE QUESTION NINE TOP

PART ONE QUESTION TEN TOP



PART ONE QUESTION TEN BOTTOM

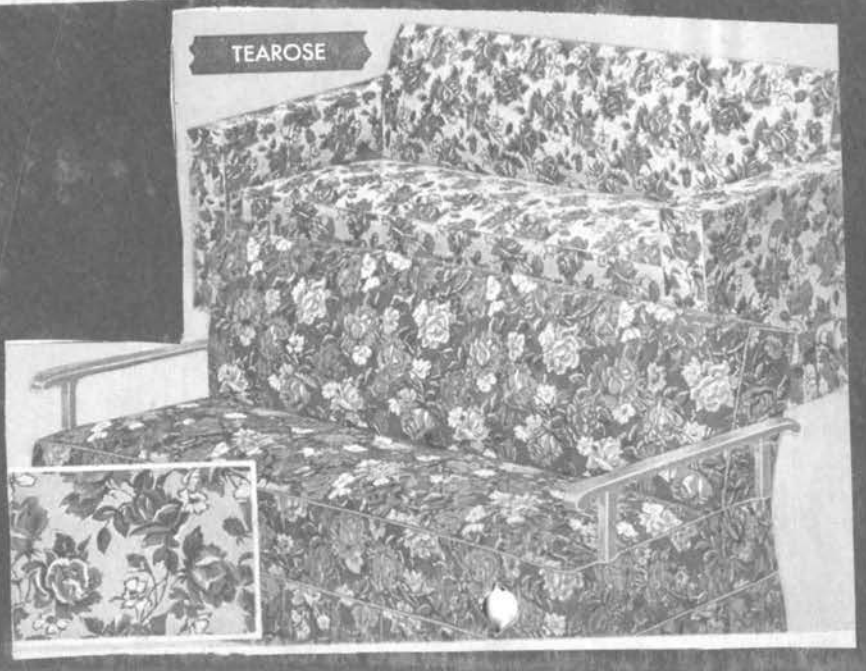


PART TWO SAMPLE

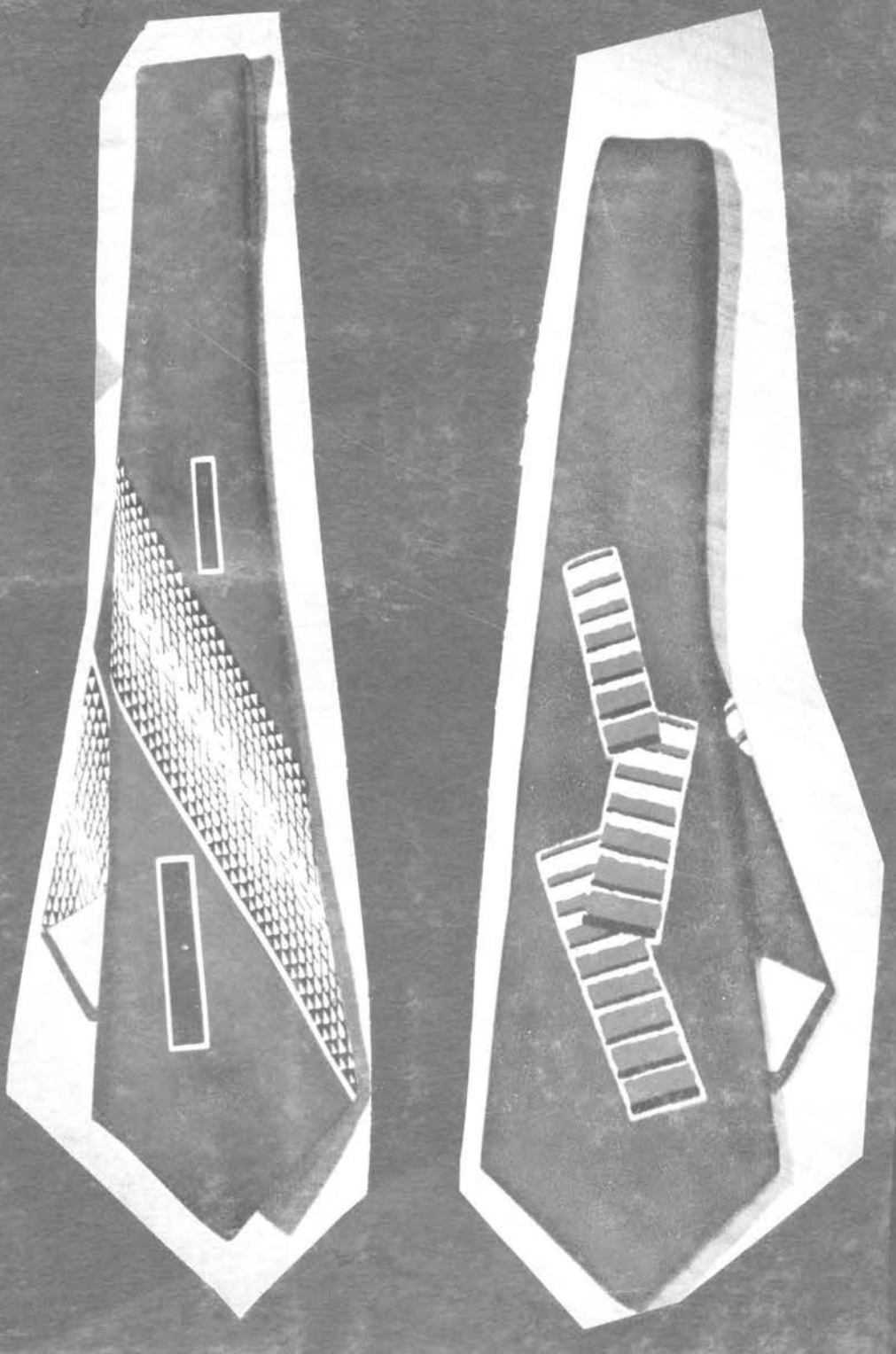
53

PART TWO QUESTION ONE TOP

PART TWO QUESTION ONE BOTTOM



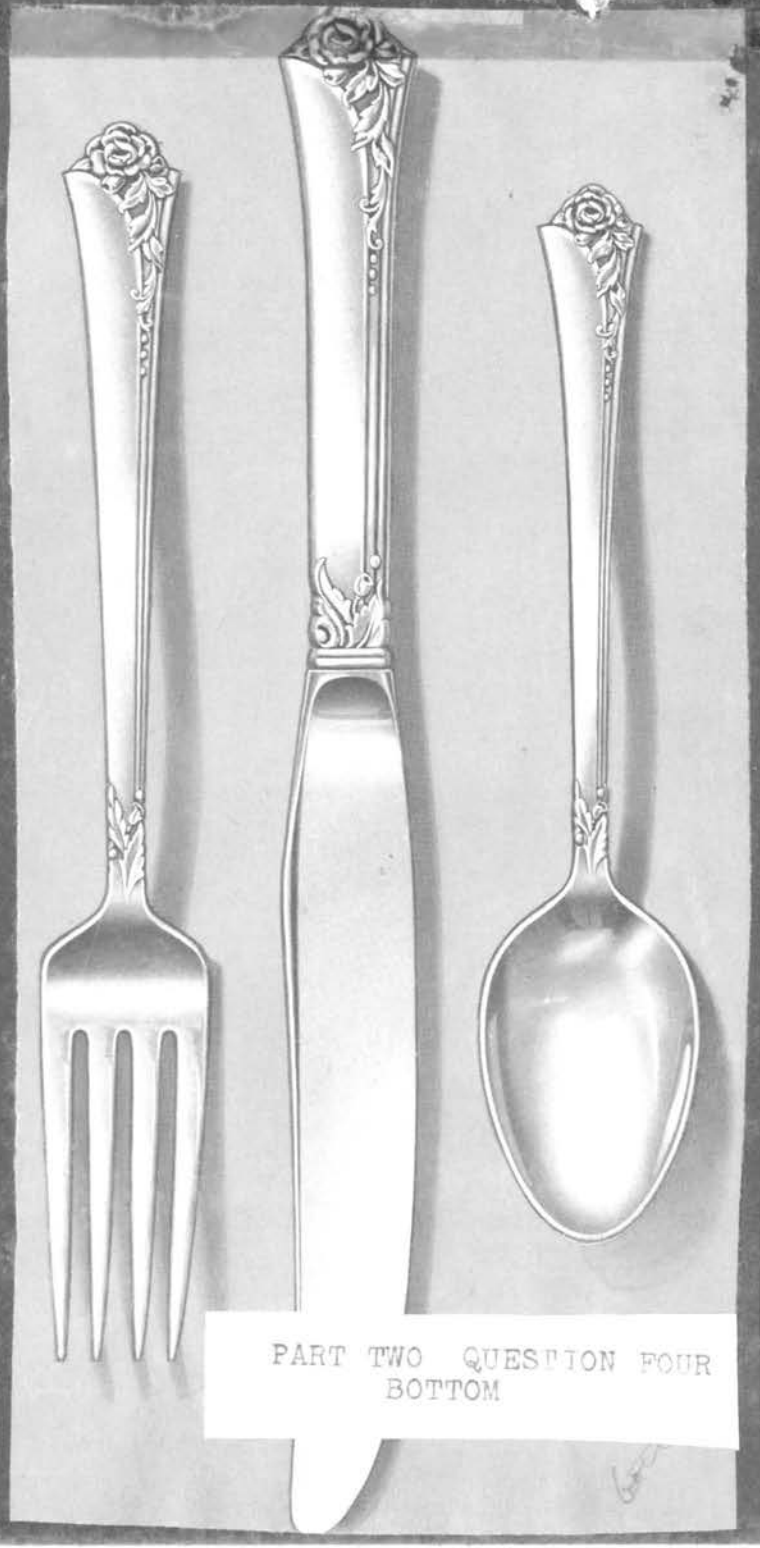
PART TWO QUEST... TWO



PART TWO QUESTION THREE TOP

PART TWO QUESTION THREE BOTTOM

PART TWO QUESTION FOUR TOP



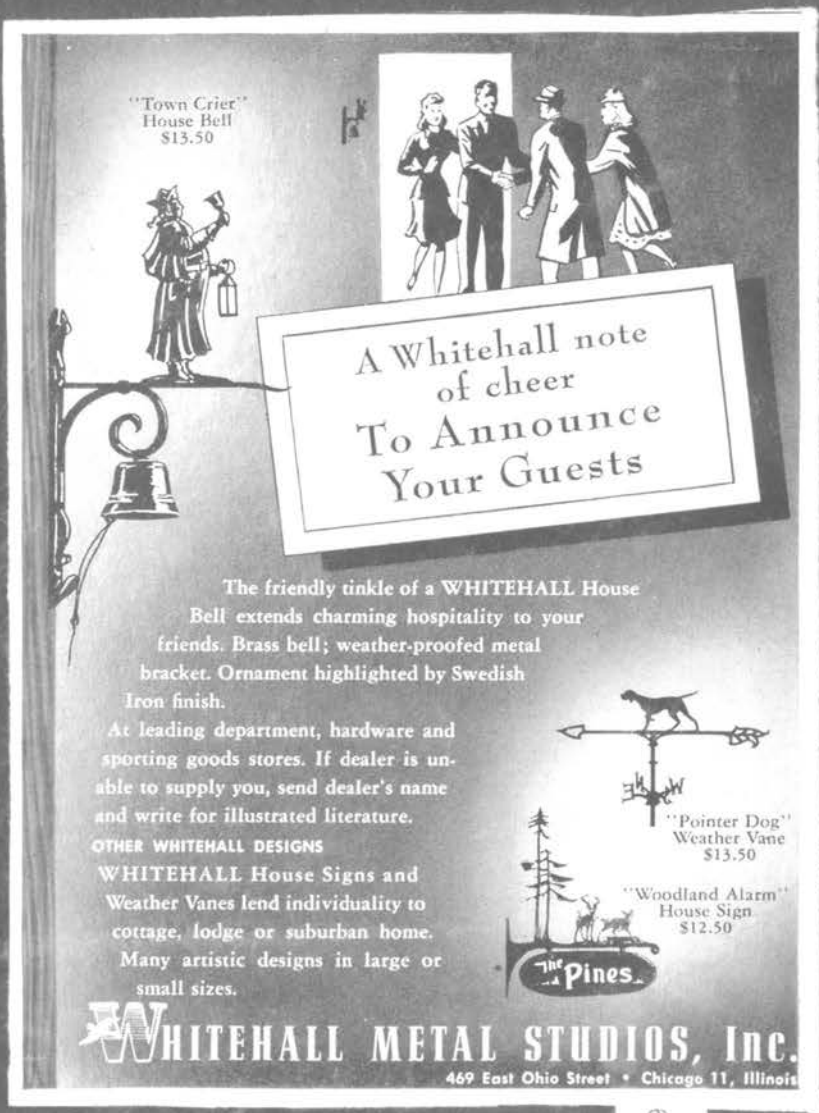
PART TWO QUESTION FOUR
BOTTOM

PART TWO QUESTION FIVE TOP

PART TWO QUESTION FIVE BOTTOM

Part I Quest. Seven

Part I Quest S...



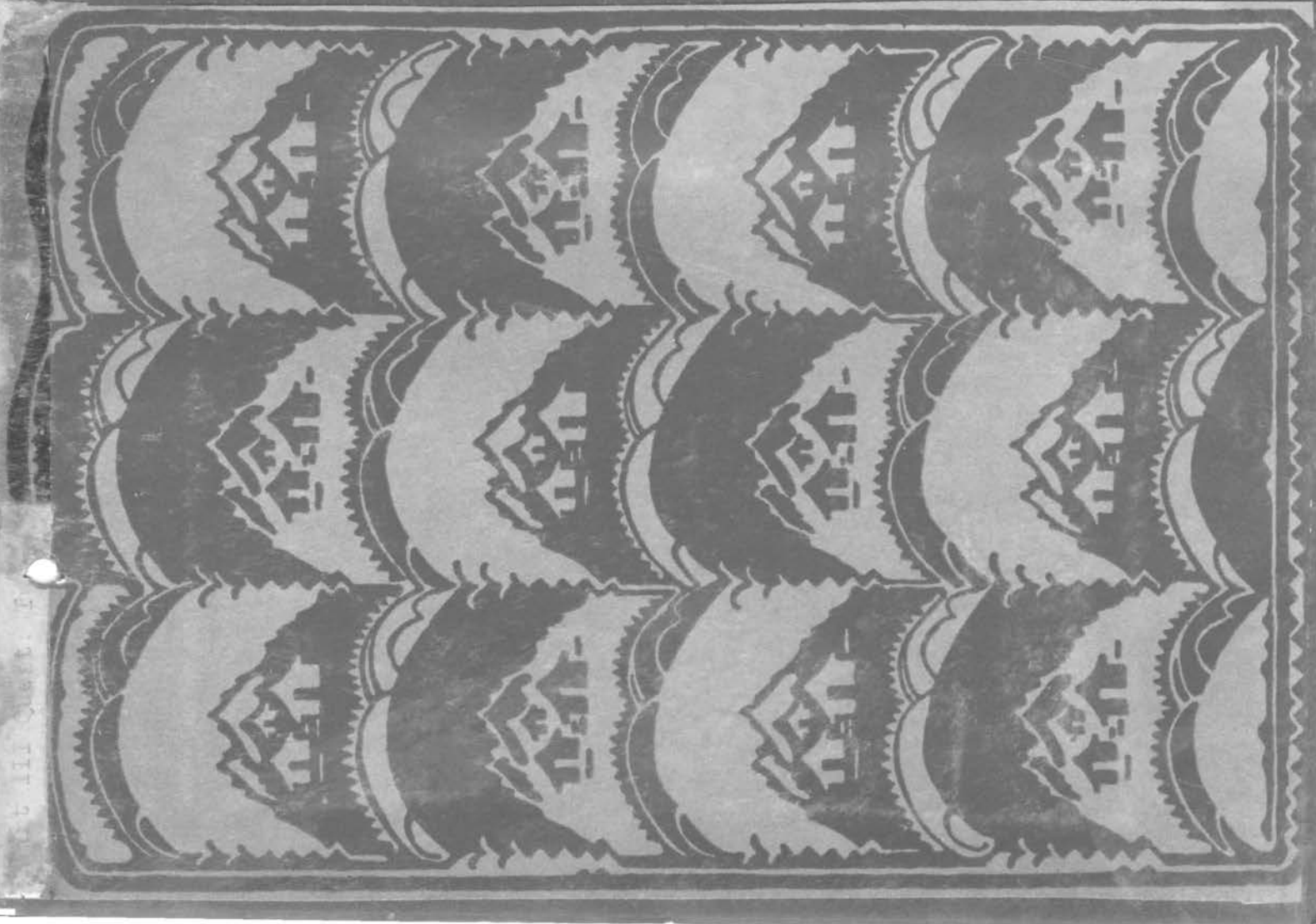
63

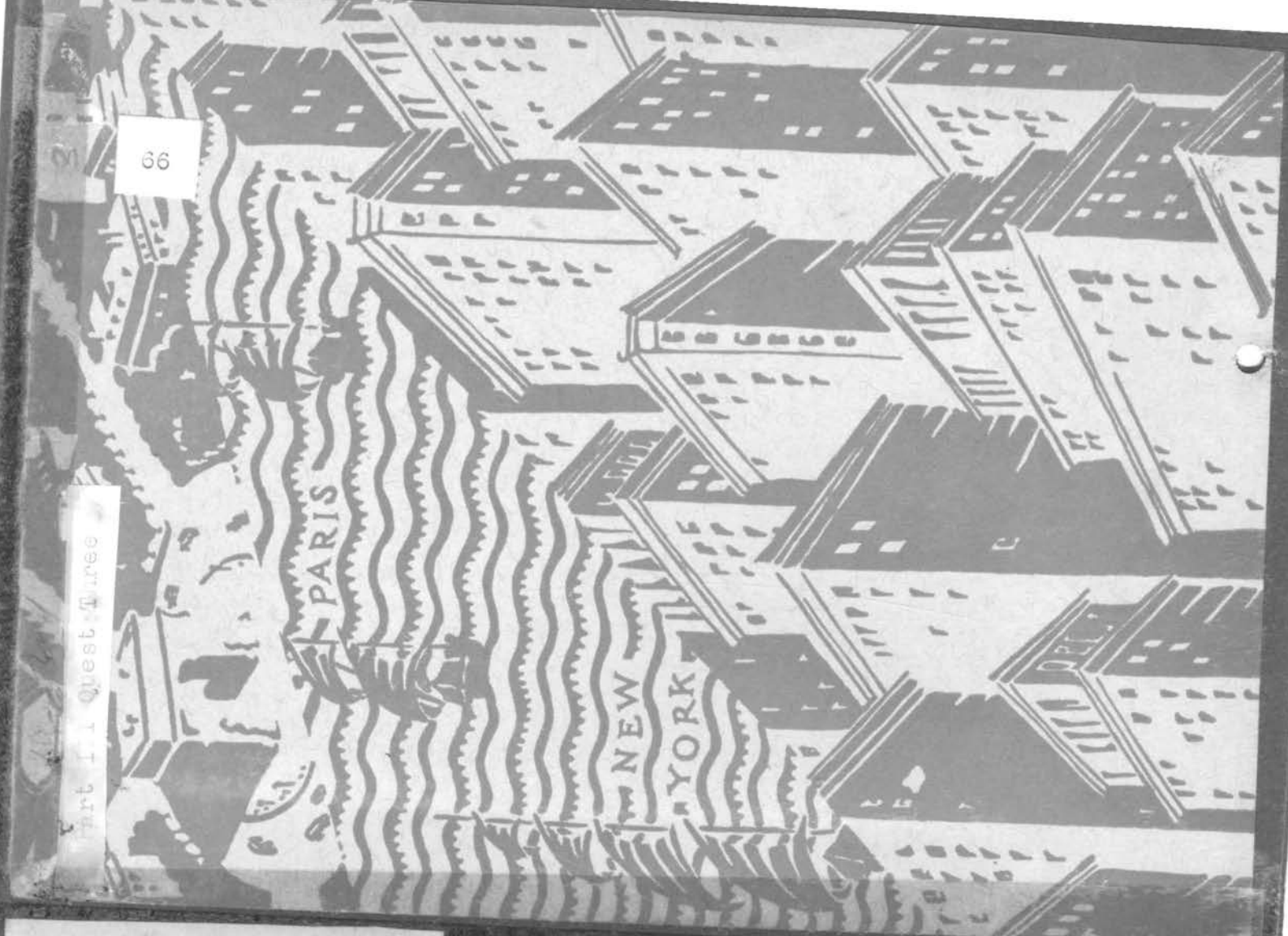
PART THREE SAMPLE

Part II Quest. Eight

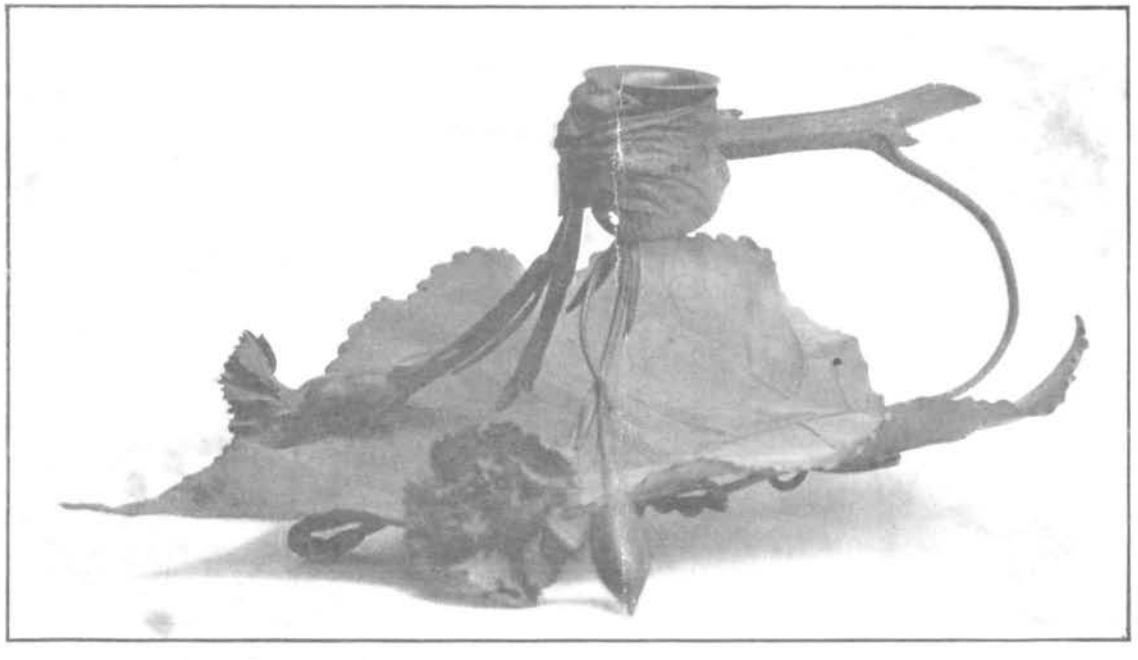
64

Part II Quest. Ten





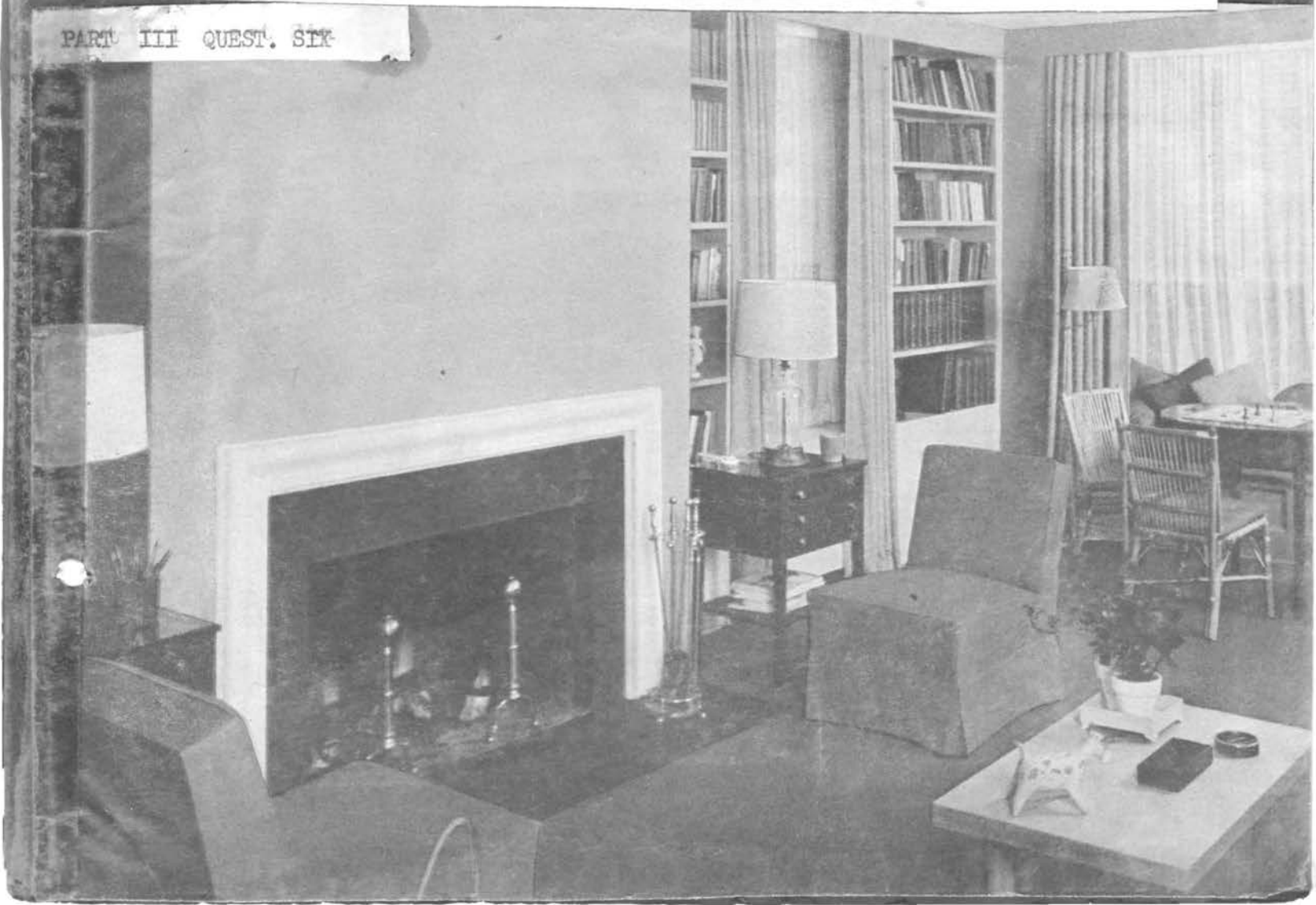
PART THREE QUESTION FOUR



A candlestick made from a grape leaf, a dragon-fly, and carnation sprays

PART III QUESTION FIVE

PART III QUEST. SIX



Part III Quest. Seven

Part III Quest. Eight

Part III Quest Ten

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