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BASKETRY
TECHNOLOGY
IN THE
PUEBLO AREA

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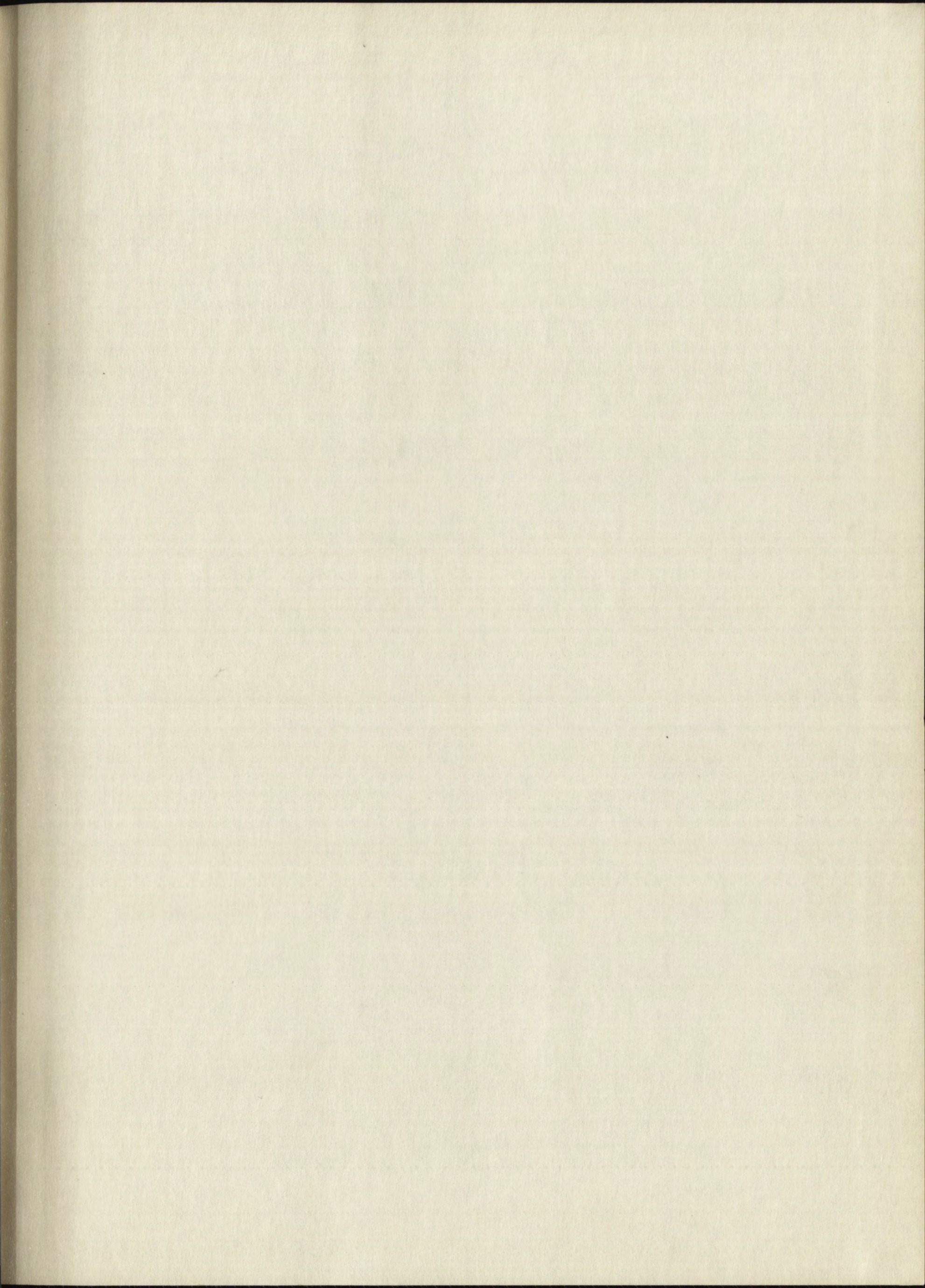
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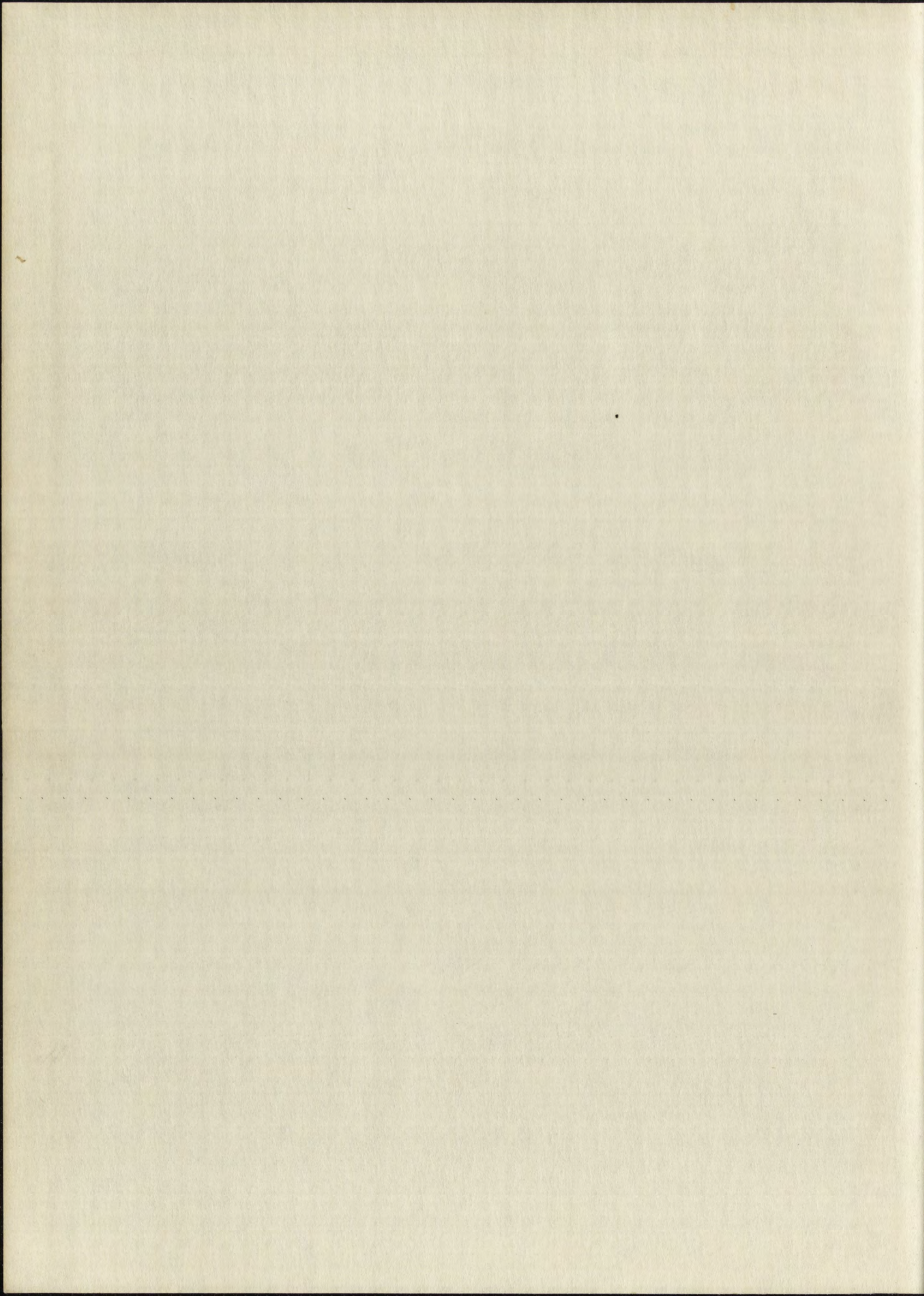
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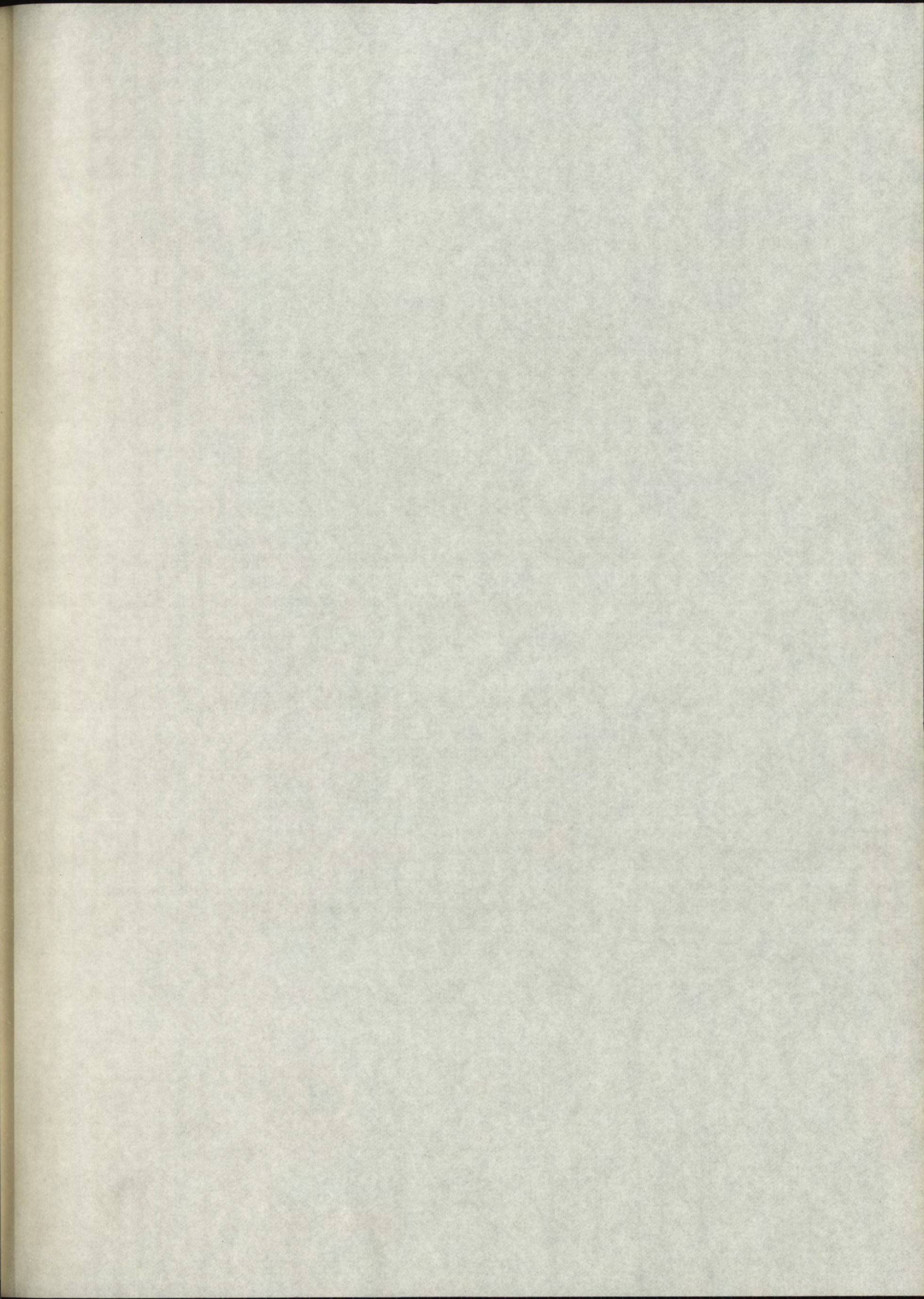
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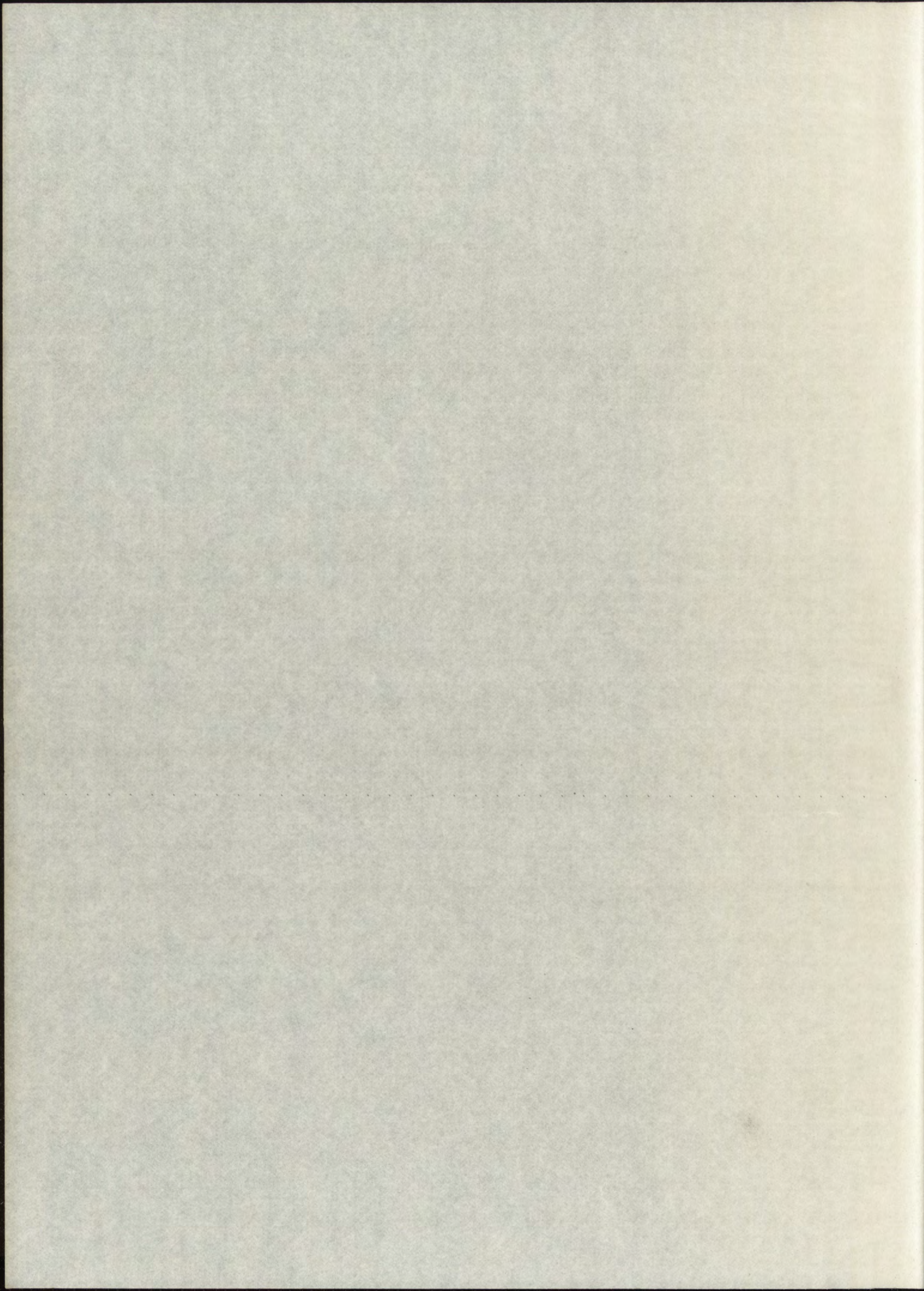
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IN THE PUEBLO AREA

By

John R. Mitchell

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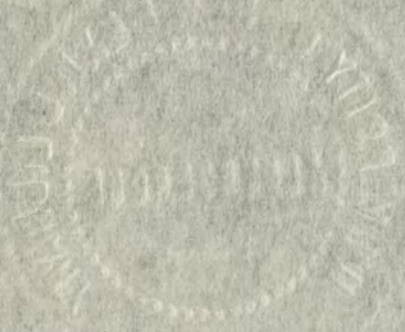
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IN THE PUEBLO AREA

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IN THE MEXICO AREA

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TABLE OF CONTENTS

CHAPTER	PAGE
I. INTRODUCTION	1
A. THE PROBLEM	2
B. HISTORY OF THE PROBLEM	6
1. Survey Reports	6
2. Topic Reports	7
3. Location Reports	10
4. Problem Reports	29
C. ORGANIZATION OF THE STUDY	39
II. METHODOLOGY	41
A. THEORETICAL CONCEPTS	41
B. TECHNIQUES OF ANALYSIS	42
1. The Start	43
2. The Weave	43
3. The Finish	49
4. Other Variables	49
5. Presentation of Techniques	50
III. DEFINITIONS OF DESCRIPTIVE BASKET TYPES AND REFERENCES TO LOCATIONS	51
A. DEFINITIONS OF DESCRIPTIVE BASKET TYPES	53
1. Structural Parts of Coiled Baskets	53
a. Center	53

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TABLE OF CONTENTS

CHAPTER

I. INTRODUCTION	1
A. THE PROBLEM	2
B. HISTORY OF THE PROBLEM	3
1. Early Reports	3
2. Topic Reports	4
3. Location Reports	5
4. Review Reports	6
C. ORGANIZATION OF THE STUDY	7
II. METHODOLOGY	8
A. THEORETICAL CONCEPTS	9
B. TECHNIQUES OF ANALYSIS	10
1. The Start	10
2. The Search	11
3. The Analysis	12
4. Other Variables	13
5. Presentation of Results	14
III. DEFINITIONS OF DESCRIPTIVE RABBIT TYPES AND REFERENCES TO LOCATIONS	15
A. DEFINITIONS OF DESCRIPTIVE RABBIT TYPES	15
1. Structural Parts of Rabbit Anatomy	15
2. Color	16

CHAPTER

PAGE

b. Wall	54
c. Rim	66
d. Shape	67
2. Plaited Baskets	69
3. Wickered Baskets	73
4. Twined Baskets	76
B. REFERENCES TO LOCATIONS	77
IV. INTERPRETATIONS	104
A. TECHNOLOGICAL BASKETRY TRENDS	104
1. Circular Coiled Center	104
2. Oval Coiled Center	105
3. One-rod Foundation	105
4. Half-rod Foundation	111
5. Bundle Foundation	112
6. Two-rod-and-bundle-triangular Foundation	114
7. Three-rod-triangular Foundation	120
8. One-rod-and-bundle-stacked Foundation	127
9. Half-rod-and-bundle-stacked Foundation	130
10. Other Stacked Foundations	132
11. Other Foundation Types	133
12. Intricate Coiled Stitch Types	134
13. Stitch-and-wrap Types	135
14. False-braid Coiled Rims	137
15. Tray and Bowl Coiled Shapes	142
16. Truncate-cone Coiled Shape	142

1. Wall	1
2. Rim	1
3. Base	1
4. Plated Base	1
5. Plated Base	1
6. Plated Base	1
7. Plated Base	1
8. Plated Base	1
9. Plated Base	1
10. Plated Base	1
11. Plated Base	1
12. Plated Base	1
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17. Plated Base	1
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94. Plated Base	1
95. Plated Base	1
96. Plated Base	1
97. Plated Base	1
98. Plated Base	1
99. Plated Base	1
100. Plated Base	1

IV. INTERPRETATION

A. TECHNICAL BASIS

1. General	1
2. General	1
3. General	1
4. General	1
5. General	1
6. General	1
7. General	1
8. General	1
9. General	1
10. General	1
11. General	1
12. General	1
13. General	1
14. General	1
15. General	1
16. General	1
17. General	1
18. General	1
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33. General	1
34. General	1
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36. General	1
37. General	1
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39. General	1
40. General	1
41. General	1
42. General	1
43. General	1
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72. General	1
73. General	1
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76. General	1
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89. General	1
90. General	1
91. General	1
92. General	1
93. General	1
94. General	1
95. General	1
96. General	1
97. General	1
98. General	1
99. General	1
100. General	1

	111
CHAPTER	PAGE
17. Cylindrical Coiled Shape	143
18. Burden Basket Coiled Shapes	145
19. Other Coiled Shapes	147
20. Plaited Baskets	148
21. Wickered Baskets	156
22. Twined Baskets	158
B. PUEBLO BASKETRY DEVELOPMENT	159
V. CONCLUSIONS	171
APPENDIX A. DISTRIBUTION OF PLANT MATERIALS USED IN BASKETS . . .	173
BIBLIOGRAPHY	176

17.	Cylindrical and conical shapes	143
18.	Barbed wire, twisted shapes	144
19.	Other twisted shapes	145
20.	Plated barbed wire	146
21.	Welded barbed wire	147
22.	Twisted barbed wire	148
B.	PUTTING BARBED WIRE TO WORK	149

V.	CONCLUSIONS	150
APPENDIX A.	DISTRIBUTION OF PLANT MATERIALS USED IN BARBED WIRE	151
BIBLIOGRAPHY		152

LIST OF FIGURES

FIGURE	FOLLOWING PAGE
1. Pueblo area in Relation to Other Areas	3
2. Coiled Basketry: Type-Area-Time Correlations	35
3. Locations Referred to in Text	52
4. Distribution of One-rod Foundation with Interlocked Stitch	106
5. Distribution of One-rod Foundation with Noninterlocked Stitch	109
6. Distribution of Bundle Foundation	113
7. Distribution of Two-rod-and-bundle-triangular Foundation	114
8. Distribution of Three-rod-triangular Foundation	121
9. Distribution of Intricate Stitch	134
10. Distribution of False-Braid Coiled Rims	137
11. Distribution of Plaited Baskets	148
12. Wicker Basket Types	156
13. Distribution of Coiled Foundation Plant Materials	173

1. Radio area in relation to the coast
2. Colored map of the Pacific Ocean
3. Location of the Pacific Ocean
4. Distribution of the Pacific Ocean
5. Distribution of the Pacific Ocean
6. Distribution of the Pacific Ocean
7. Distribution of the Pacific Ocean
8. Distribution of the Pacific Ocean
9. Distribution of the Pacific Ocean
10. Distribution of the Pacific Ocean
11. Distribution of the Pacific Ocean
12. Water surface type
13. Distribution of the Pacific Ocean

CHAPTER I

INTRODUCTION

Areas with extensive evidence of basketry are the Near East, Europe, Peru, and the American Greater Southwest.¹ In the Greater Southwest the basketry evidence dates back to 7000 B.C.² The most detailed inventory of basketry within this area comes from the Pueblo domain.

In the literature on basketry, seven studies synthesize the data and discuss the history of basketry in the Pueblo region.³ Archaeological data is analyzed in detail, while the ethnographic evidence is presented in a general manner primarily to establish continuity with the archaeological basket types.

Since the publication of the last major report in 1941, a number of sites have been excavated. The baskets found at these recently excavated sites provide important data for a consideration of the development of basketry in the Pueblo area.

¹ Crowfoot summarizes the first three areas. Textiles, Basketry, and Mats, 1954, 415.

² Twined baskets were recovered from the second horizon at Danger Cave, Utah. Jennings, Danger Cave, 1957, 279.

³ Mason, Aboriginal American Basketry, 1904; Weltfish, Prehistoric North American Basketry, 1930; Weltfish, Problems, 1932; Weltfish, Preliminary Classification, 1932; Tschopik, Artifacts of Perishable Materials, 1939; Morris and Burgh, Anasazi Basketry, 1941; and, Weltfish, Review of Anasazi Basketry, 1944.

Besides the archaeological evidence, many monographs deal with the ethnographic tribes. The basketry information contained in these papers is also important to include in an historical study of Pueblo basketry.

The present study, therefore, attempts to assimilate the scattered information about Greater Southwest baskets for the general purpose of examining the technological development of basketry in the Pueblo area.

A. THE PROBLEM

The specific problem is to determine the cultural processes responsible for the development of basketry technology in the Pueblo area.

The Pueblo region, as defined in this study, is rectangular, with the San Juan River in the north, the Pecos River in the east, and the Little Colorado River in the south.

In broad perspective, the region was first occupied by early-man hunter-gatherers. Later, some people acquired agriculture, above-ground house building, and pottery making. Differentiation occurred, resulting in the Little Colorado River and San Juan River subcultures of the Pueblo culture. By 1300 A.D. most of the people from the San Juan area had withdrawn to the Rio Grande River. The Little Colorado subculture remained more or less intact, from Hopi southeast to Acoma. Nomadic tribes soon migrated into the vacated northern portion of the Pueblo area; as a consequence, several cultures are represented

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during the ethnographic period (after 1540).⁴

Cultural traits of the Pueblo region often are similar to traits in other areas. It is therefore necessary to examine baskets which occur at many locations in the Greater Southwest. In the present study the Greater Southwest includes the following areas: (1) the Colorado Plateau of Arizona, New Mexico, Colorado, and Utah; (2) the Basin and Range province west and south of the Plateau, including western Utah, southern Oregon, Nevada, and southern Arizona; (3) California, excluding the northwest corner; (4) the mountainous terrain of central Arizona and New Mexico; (5) the Rio Grande and Pecos drainages; (6) the Big Bend of Texas; and (7) northern Mexico.⁵ For its archaeological data, the study includes sites from southern Oregon to western Texas and from northwestern Colorado to southern California. The ethnographic tribes range from central California to the Plains in a broad area which includes the Paiute in the north and the Tarahumara in the south.⁶

A number of traits in the Pueblo area, including baskets, have certain aspects of continuity for approximately two thousand years.⁷ However, baskets similar to those in the Pueblo region often are found earlier at sites in other areas. Hence, in some instances baskets from these earlier sites will be discussed before baskets from the Pueblo region.

⁴ For detailed summaries concerning the development of cultures, see Hawley, *Prehistoric Southwestern Pottery Types*, 1936; Reed, *Distinctive Features*, 1946; Reed, *Culture Areas*, 1951; and Wheat, *Southwestern Cultural Interrelationships*, 1954.

⁵ For other definitions of the Greater Southwest, see the Southwest Issue of the *American Anthropologist*, 1954, ed. Haury.

⁶ See Figure 1 for an outline of the Pueblo area in relation to other pertinent areas.

⁷ Basket Maker II sites near Durango, Colorado, show tree-ring dates between 46 A.D. and 324 A.D. See Morris and Burgh, *Basket Maker II Sites*, 1954, 48.

during the ethnographic period (1890-1900).

Colonial times of the United States (1800-1890).

in other cases. It is therefore necessary to consider a wide range

of many locations in the United States. In the present study, the

Greater Southwest includes the following areas: (1) the Colorado Plateau

of Arizona, New Mexico, Colorado, and Utah; (2) the Rio Grande

province west and south of the Colorado Plateau; (3) the

Oregon, Nevada, and southern Idaho; (4) California, including the

northernmost corner; (5) the Sacramento-San Joaquin River Delta

New Mexico; (6) the Rio Grande and the Colorado Plateau; (7) the

Texas; and (8) southern California. The latter includes the

included area from the Colorado Plateau to the Rio Grande and the

Colorado to southern California. The Sacramento-San Joaquin River

central California to the Colorado Plateau and the Colorado Plateau

Palms in the north and south. The latter includes the

A number of areas: (1) the Colorado Plateau; (2) the Rio Grande

certain aspects of the Colorado Plateau; (3) the Rio Grande

However, because of the complexity of the area, it is necessary to

earlier at least in other areas. It is therefore necessary to

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For a more detailed study of the area, see the following

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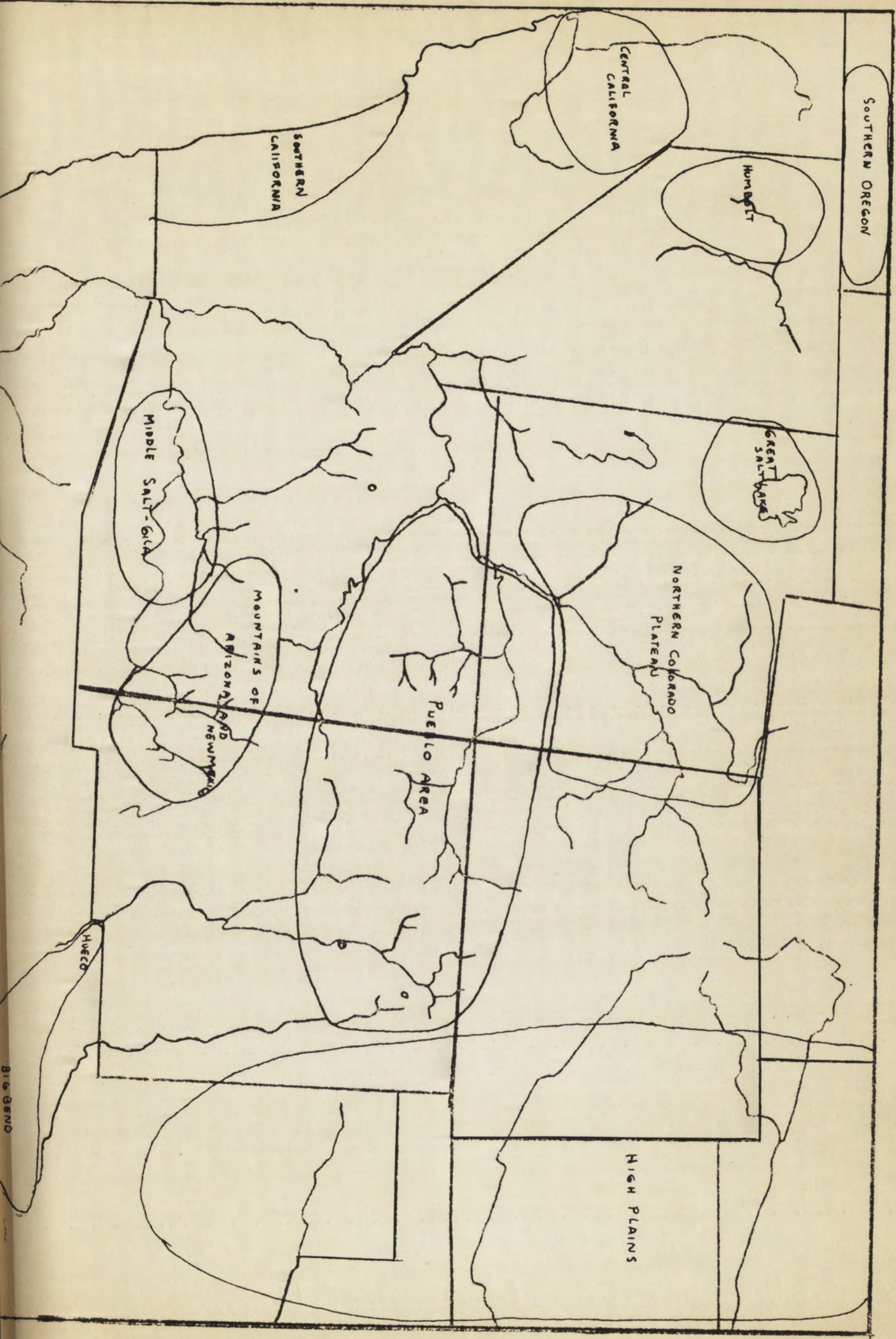
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See Figure 1 for a map of the area. It is therefore necessary to

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Certain terms appearing frequently in this study require definition. A basket is a hand-made rigid or semi-rigid container which is composed of two sets of interconnecting fibrous elements.⁸ The structures produced by manipulating the elements provide the basis for classifying baskets into descriptive types.

Basketry refers to a collection of finished baskets. Mason, among other authors, defines the term to include basket making and textile work produced with a basket technique.⁹

Basket making comprises a series of manual operations which are performed by an individual for the purposes of constructing a basket.

Technology is a term which refers to human knowledge and activity aimed at producing material objects.¹⁰

Development applies to change. For example, two baskets may be alike in all but rim appearance. If an investigator infers a similar behavior sequence for the two baskets and also shows a difference in the method of rim construction, he may infer a change in the behavior which produced the two baskets. He may do this if he infers that the two sets of similar behavior sequences are connected in some manner, i.e., either performed by the same individual, by two individuals one of whom was trained by the other, or by two individuals who belong to diverging cultural traditions. If this inference is not made, there is the possibility that the two baskets were independently invented and that

⁸ For similar definitions see Lowie, *Introduction to Cultural Anthropology*, 1940, 122; Crowfoot, *op.cit.*, 414; Balfet, *Basketry*, 1957, 3.

⁹ Mason, *op.cit.*, 193.

¹⁰ "Technology should mean the study of those activities, directed to the satisfaction of human needs, which produce alterations in the material world." Childe, *Early Forms of Society*, 1954, 38.

the difference in the baskets does not indicate a change in the manufacture of one of the baskets.

The differences which result when development is referred to a culture or to a region are stated by Tschopik in relation to trait stability.

One problem is the question of stability of a trait within an area...this particular problem, however, involves yet another problem: the question of the stability of a given trait within a specified culture...The stability, therefore, of two-rod-and-bundle basketry within the Southwestern area has been maintained...by the fact that the Navajo adopted it; the instability of the trait in the nineteenth century Pueblo culture is evident, since the manufacture of this basketry type among the Pueblo has ceased in recent times altogether.¹¹

Four types of cultural processes are explored to see if they will account for the distributions and changes of basketry technology in the Pueblo area.

The first type of process is independent invention. The behavior of a group of people changes because of the inventions and discoveries which the people make.

The second type of process is diffusion. In one area there may occur behavior changes which are precipitated by influences from another area.

A third type of process, trade, takes place when it can be shown that a basket in an area is traded from the outside without consequent change in the behavior of the recipients.

¹¹ Tschopik, op.cit., 127.

The fourth type of process is persistence. Once a basket type has originated in a region or diffused into the region, the type may persist for a long time.

The specific problem of the study, therefore, is to determine whether independent invention, diffusion, trade, or persistence, or any combination of these processes are responsible for the differences and similarities of behaviors manifested in baskets in the Pueblo area from 466 A.D. to 1959 A.D.

B. HISTORY OF THE PROBLEM

Although few reports deal extensively with the problem of Pueblo basketry development, there are a number of reports which contribute toward a solution. The later studies, which either set the problem in a larger context or explore particular aspects of it, will be examined in the present section under three topics: (1) survey, (2) topic, and (3) location reports. The section will conclude with a discussion of problem reports which are concerned specifically with the problem of Pueblo basketry.

1. Survey Reports

Survey reports cover a number of ethnographic traits or topics, discussing the data in generalized terms.

An early survey report, presenting an ethnographic coverage of New World cultural traits, contains a map depicting the areas of basketry.¹² Coiled-ware is distributed from Siberia to Mexico in a strip across Alaska, down the Cordilleran mountain system skirting the

¹² Wissler, *The American Indian*, 1917, fig. 14.

Northwest Coast, and into the Greater Southwest. Central and southern California are included within the western margin, while the high plains are included within the eastern margin. The Pueblo area is situated near the southern boundary. Two areas of isolated occurrence are Labrador and Patagonia.¹³

Woven basketry forms a block across central and northern South America.¹⁴ The distribution proceeds north through Middle America and the Circum-Caribbean, then splits into two extensions, one going northeast to the Great Lakes and the other northwest to the coiled-ware area. In the area where woven and coiled basketry meet, some tribes produce both types. Certain groups in the Pueblo region occupy such a position.

Twined basketry has a western distribution which includes the Aleutian Islands, Northwest Coast, and northern California. It also extends into the Greater Southwest.¹⁵

A recent survey report is the compilation by Driver and Massey.¹⁶ Their basketry maps are similar to Wissler's but show more detailed lines of distribution.¹⁷

2. Topic Reports

Topic reports contain detailed information about basketry.

In two leaflets Douglas reports on the basketry of ethnographic tribes in the Southwest. The first paper covers coiled-ware.¹⁸ Tribes

¹³ *Ibid.*, 50.

¹⁴ In Wissler's terminology, woven basketry includes all non-coiled techniques. His map, however, differentiates twined from plaited and wicker types of woven ware.

¹⁵ *Ibid.*, 50-52.

¹⁶ *Comparative Studies*, 1957.

¹⁷ *Ibid.*, Maps 120-123.

¹⁸ Douglas, *Types of Southwestern Coiled Basketry*, 1939.

are grouped on the basis of similar foundation types in their coiled basketry:¹⁹

Multiple foundation: Hopi
 Small-multiple foundation: Pima, Papago, Maricopa
 Coarse-coiled-multiple foundation: Pima, Papago, Yuma, Maricopa
 Bird's-nest-coiled foundation: Pima, Papago, Yuma, Cocopa
 Openwork-coiled foundation: Mohave
 Two-rod-and-bundle-triangular foundation: Navaho
 Three-rod-triangular foundation: Paiute, Ute, Jicarilla
 Three-rod-triangular foundation (different designs): Chemehuevi, Havasupai, Walapai, Yavapai, Western Apache
 Two-rod-stacked foundation: Yuma
 Two-rod-and-bundle-stacked foundation; three-rod-and-bundle-stacked foundation; slat-and-bundle-stacked foundation: Mescalero

Tribes classified on the basis of the remaining kinds of basketry are:²⁰

Twined basketry: Chemehuevi, Havasupai, Walapai, Western Apache, Mescalero
 Wicker basketry: Hopi, Zuni, Tewa, Navaho
 Plaited basketry: Hopi, Jemez, Pima, Papago

A topic report by Weltfish compares the baskets manufactured by certain Basin and Plains tribes.²¹ Although the Pueblo groups are not included, her conclusions contribute to the distributional picture of one-rod and two-rod-stacked coiled foundation types, which appeared during various periods in the Pueblo and Greater Southwest sub-areas.

A group of varying coiled basket traits occurs north of the Pueblo area, in a latitudinal zone from the Paviotso in western Nevada to the Pawnee in eastern Nebraska. The Paviotso construct coiled baskets with a one-rod foundation, stitch variable and slant / or \.²² Certain

¹⁹ Douglas also uses the criteria of ornamentation.

²⁰ Douglas, Southwestern Twined, Wicker, and Plaited Basketry, 1955.

²¹ Coiled Gambling Baskets, 1930.

²² Ibid., 289.

was prepared on the basis of the information furnished by the
Bureau of the Census

United States Department of Commerce
Bureau of Economic Analysis
Washington, D. C. 20540
February 1964
The following table shows the estimated
and projected gross regional product
for the United States and the
District of Columbia for the
years 1960 through 1964.

Table 1. Estimated and projected gross regional product
for the United States and the District of Columbia, 1960-1964

Estimated and projected gross regional product for the United States and the District of Columbia, 1960-1964

A table showing the estimated and projected gross regional product for the United States and the District of Columbia, 1960-1964

Estimated and projected gross regional product for the United States and the District of Columbia, 1960-1964

Estimated and projected gross regional product for the United States and the District of Columbia, 1960-1964

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Estimated and projected gross regional product for the United States and the District of Columbia, 1960-1964

Estimated and projected gross regional product for the United States and the District of Columbia, 1960-1964

Shoshoni groups produce both one-rod and two-rod-stacked foundations, stitch noninterlocked or split and slant /.²³ Toward the east, some Plains tribes manufacture the same types of foundation, with random stitches and a slant / or \.²⁴ At the eastern limit of the distribution, the Pawnee make a one-rod foundation, stitch noninterlocked or interlocked and slant \.²⁵ Weltfish proposes two alternative explanations for the distribution. First, the gambling baskets represent two types, Pawnee and Shoshoni. Second, the variations are derived from a single type which lacks standardization.²⁶

Another topic report is concerned with the distribution of the line-break design which occurs on the pottery and basketry of certain groups in the Southwest and central California.²⁷ The design first occurs on three Basket Maker baskets.²⁸ The authors state that the broken line design on pottery which

spread during P II and P III seems to have followed the radiating lines of Chacoan influence southwest and southeast....In neither New Mexico nor Arizona, however, did it ever spread beyond the confines of Pueblo occupation in the known prehistoric period, nor within these confines did it ever thoroughly saturate the resident groups.²⁹

In the ethnographic period, the line-break design appears in the Southwest on the "true Navaho or the modern Ute, Paiute, or possibly

23 Ibid., 288.

24 Ibid., 287.

25 Ibid., 283, 286.

26 Ibid., 291.

27 Chapman and Ellis, The Line-Break, 1951.

28 Ibid., 270.

29 Ibid., 283.

Shoshone groups...
 station...
 Plains tribes...
 station and a...
 the...
 and...
 station...
 and Shoshone...
 which...
 Another...
 line-break...
 groups in the...
 occurs on...
 broken line...
 spread during...
 radiating...
 east...
 it over...
 in the...
 did it...
 In the...
 Southwest...

25	1000
26	1000
27	1000
28	1000
29	1000
30	1000
31	1000
32	1000
33	1000
34	1000
35	1000
36	1000
37	1000
38	1000
39	1000
40	1000
41	1000
42	1000
43	1000
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91	1000
92	1000
93	1000
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95	1000
96	1000
97	1000
98	1000
99	1000
100	1000

Havasupai-woven 'marriage-basket'" and on baskets of the Jicarilla and Pima.³⁰ The broken line also appears in central California among the Pomo, Yuki, and possibly Kato.³¹ On the basis of distributional evidence, the authors suggest two tentative hypotheses. One is that the Athapascans are the carriers of the line-break. The other hypothesis is that the line-break as a basket design originated in the Pueblo culture.³²

3. Location Reports

Many reports deal only with the culture of a specific location such as an archaeological site or ethnographic tribe. Pertinent to the basketry problem are a number of such reports which discuss the significance of their baskets by showing the cultural relationships with baskets from other locations. These studies are particularly important in providing the links for a tentative mapping of the basket making areas, which can then be identified as related to the Pueblo area or as having no connection with it.

For the purpose of the present study, reports are grouped on the basis of three regions: the Pueblo area, the area north of the Pueblo, and the area south and east.

The Pueblo area is represented by six significant location studies. They attempt to establish sequences of particular basket types or to compare certain eastern and western archaeological types.

³⁰ Ibid., 266.

³¹ Ibid., 266, 272.

³² Ibid., 271-272.

Haversham-woven 'murrage-bagging' and on the basis of the
 plan. The broken line also appears in several other
 plans, such as the plan of the murrage-bagging station
 the authors suggest two tentative hypotheses. The first is that the
 are the outlines of the line-break. The other hypothesis is that
 line-break as a basket design obtained in the weaving process.

3. Location hypothesis

Many reports deal only with the outline of a specific location
 such as an archaeological site or ethnographic site. Very few reports
 actually provide a number of such reports which discuss the
 of their location by showing the actual relationship with other
 other locations. These reports are particularly important in providing
 the links for a tentative mapping of the basket-making areas, which can
 then be identified as related to the Pueblo area or as having no connection
 with it.

For the purpose of the present study, reports are grouped on
 the basis of three regions: the Pueblo area, the Navaho area, and
 Pueblo, and the area south and east.
 The Pueblo area is represented by six different locations
 studies. They attempt to establish a sequence of Puebloan basket types
 or to compare certain eastern and western technological types.

30	1900
31	1910
32	1920

In the western portion of the Pueblo area, Kidder and Guernsey analyze the culture traits which occur at a number of sites.³³ The material is classified as Basket-Maker, Slab-House, and Cliff-House. A hypothesis is proposed which interprets the relationship as developmental.

From Basket-Maker cist to slab-house semisubterranean room seems a logical development...The masonry cliff-house would be but another step in advance...In sandals, too, a possible development may be suggested...³⁴

The Basket-Maker complex, as known in 1919, is centered in southeastern Utah and northeastern Arizona.³⁵ All of the baskets, except one, are two-rod-and-bundle-triangular coiled foundation, stitch non-interlocked and slant /.³⁶ The Slab-House complex probably had baskets, but none were discovered in 1919.³⁷

The Cliff-House material centers about the Kayenta district. Here, the dominant type is a twilled-plaited yucca ring basket with an over-three-under-three weave.³⁸ Other Cliff-House finds include a few fragments of coiled basketry which are similar in technique to the Basket-Maker material, except that the stitches are set closer together and hide the foundation.³⁹

Situated in the Hospitibito region of northeastern Arizona, which lies between the western and eastern archaeological Pueblo sub-

³³ Archaeological Exploration, 1919.

³⁴ *Ibid.*, 210. In modern classification Basket-Maker is EM II, Slab-House is EM III, and Cliff-House is P III.

³⁵ *Ibid.*, 211.

³⁶ *Ibid.*, 168.

³⁷ *Ibid.*, 152-154.

³⁸ *Ibid.*, 108-110.

³⁹ *Ibid.*, 110.

In the western portion of the site, the material is classified as Basket-Maker. A hypothesis is proposed which interprets the relationship between the material and the site. The material is classified as Basket-Maker. A hypothesis is proposed which interprets the relationship between the material and the site.

The Basket-Maker complex, as found in 1919, is represented in southeastern Utah and northeastern Arizona. All of the material, however, are two-and-a-half-triangular, and in the foundation, of the site. The site is a complex of material, and the material is interlocked and associated. The site was discovered in 1919. The Cliff-House material, however, is a different type. The dominant type is a twill-ribbed material, and the material is over-three-under-three weave. Other Cliff-House material is found in fragments of coiled basketry which are similar in pattern to the Basket-Maker material, except that the ribbing is not of the twill type. The foundation, the material is classified as Basket-Maker. A hypothesis is proposed which interprets the relationship between the material and the site. The material is classified as Basket-Maker. A hypothesis is proposed which interprets the relationship between the material and the site.

35	Archaeological Exploration, 1919
36	Ibid., 210. In modern literature, the site is known as the
37	Ibid., 211. and Cliff-House and 212.
38	Ibid., 211.
39	Ibid., 160.
40	Ibid., 152-154.
41	Ibid., 108-110.
42	Ibid., 110.

areas, is Painted Cave.⁴⁰ A Pueblo III site, it contains plaited and coiled baskets.⁴¹ The basket shape of the coiled two-rod-and-bundle-triangular foundation represents a burden basket with a slight basal arch.⁴² The people also manufactured twill-plaited yucca ring baskets with an over-three-under-three interval. Haury draws the boundaries of this type as including Pueblo Bonito in the east, Mesa Verde in the north, Betatakin in the west, and Canyon de Chelly in the south; Painted Cave is in the geographic center.⁴³

Plaited baskets, similar in certain features to those produced during Pueblo III, are made at Hopi. A recent study summarizes the data.⁴⁴ The earliest twill-plaited yucca ring baskets occur in northeastern Arizona about 500 A.D. The technique is an over-two-under-two interval; the ends of the weaving strands are bent over a wooden rim hoop, forming a fringe on the outside which is held in place by a course of twining with split yucca leaves. By 1150 A.D. twill-plaited baskets spread to southwestern Colorado. The weave changes to an over-three-under-three interval, and an ornamental plaited band hides the plain fringed border. The design generally consists of a series of concentric diamonds emphasized by dyed strands.⁴⁵

Hopi twill-plaited baskets made in 1949 are similar to the archaeological types. Two comparative facts are apparent: Hopi baskets resemble Pueblo III in using the over-three-under-three interval and the concentric diamond design; and they are like Basket Maker III in

⁴⁰ Haury, Painted Cave, 1945.

⁴¹ *Ibid.*, 43, 74.

⁴² *Ibid.*, 46-48.

⁴³ *Ibid.*, 43.

⁴⁴ Bartlett, Hopi Yucca Baskets, 1949.

⁴⁵ *Ibid.*, 40.

having a fringed rim and in using a yucca strand to twine the fringe against the wall.⁴⁶

In the eastern part of the Pueblo area, Morris and Burgh report on an excavation of two Basket Maker II sites near Durango, Colorado.⁴⁷ They compile a list of traits for the eastern (Durango) and western (Classic) Basket Maker II sub-areas. Since the correlation between the two groups is 77.87, the authors believe that the differences are of emphasis rather than kind. The artifacts from the west occur in non-residential caves, while those from the east are associated with open residential sites.⁴⁸ A slightly modified list of comparative basket traits is reproduced below:⁴⁹

<u>Classic Basket Maker</u>	<u>Durango Basket Maker</u>
<hr/>	Half-rod foundation, interlocked stitch
Two-rod-and-bundle-triangular foundation, uninterlocked stitch	Two-rod-and-bundle-triangular foundation uninterlocked stitch
<hr/>	Half-rod-and-bundle-stacked foundation, uninterlocked stitch
<hr/>	Half-rod-and-bundle-stacked foundation, interlocked stitch
One-rod foundation, intricate, interlocked stitch	One-rod foundation, intricate, interlocked stitch
Inverted-half-rod-and-bundle-stacked foundation, uninterlocked stitch	<hr/>

⁴⁶ Ibid., 40-41.

⁴⁷ Basket Maker II Sites, 1954.

⁴⁸ Ibid., 75-79.

⁴⁹ Ibid., 77.

1700

1700

having a 1700...
against the wall...
is the eastern end of the...
on an excavation...
They compile a list of...
(Classic) Detail...
two...
...
residential...
residential...
... is reported...

Classic Detail	Classic Detail
...	...
...	Two...
...	...
...	...
...	...
...	One... ...
...	...
...	...
...	...

1700
1700
1700
1700

Classic Basket Maker, cont.Durango Basket Maker, cont.

Inverted-half-rod-and-bundle-
stacked foundation, interlocked
stitch

Bundle-with-rod-core foundation,
uninterlocked stitch

The authors state: "In basketry there is the one suggestion of difference that may be significant."⁵⁰ That is, the most important Durango technique half-rod-and-bundle-stacked, is lacking in the western Basket Maker region; the two-rod-and-bundle-triangular foundation which is dominant in the west is represented by only one specimen at Durango.⁵¹

South of the Durango Basket Makers, the P III inhabitants of Pueblo Bonito manufactured both plaited and coiled baskets.⁵² Although the two-rod-and-bundle-triangular foundation is dominant, a variety of other coiled types occur, such as one-rod, three-rod-triangular, and several vertical foundations.⁵³ Judd arrives at three conclusions. First, there were two groups of people at Pueblo Bonito, "Old Bonitians" and "Late Bonitians"; a comparative list of coiled basket shapes emphasizes the differences between them:⁵⁴

"Old Bonitians"

16 Cylindrical baskets
3 Bifurcated baskets
4 Elliptical basket trays

"Late Bonitians"

3 Cylindrical baskets
0 Bifurcated baskets
0 Elliptical basket trays

⁵⁰ Ibid., 79.

⁵¹ Ibid., 68.

⁵² Judd, Material Culture of Pueblo Bonito, 1954, 159.

⁵³ Ibid., 163-168.

⁵⁴ Ibid., 37-38. Although Judd's report contains much information which is valuable, archaeologists do not now accept the terms "Old Bonitians" and "Late Bonitians".

Classic Basketry Series, Volume 1

Inverted-half-rod-and-bundle

attached foundation, triangular

attach

Bundle-with-rod-core foundation

uninterlocked attach

The authors state: "In basketry, the term 'rod-and-bundle' is used to designate a type of foundation which is made by weaving a rod and a bundle of rods together. This type of foundation is used in many different ways, and it is one of the most important types of foundation in basketry."

is represented by only one type of foundation, the 'rod-and-bundle' foundation. This type of foundation is used in many different ways, and it is one of the most important types of foundation in basketry."

Bonito manufactured both by hand and by machine. The 'rod-and-bundle' foundation is used in many different ways, and it is one of the most important types of foundation in basketry."

rod-and-bundle foundation is used in many different ways, and it is one of the most important types of foundation in basketry."

types occur, such as one-rod, two-rod, three-rod, and four-rod. The 'rod-and-bundle' foundation is used in many different ways, and it is one of the most important types of foundation in basketry."

foundations. The authors state: "In basketry, the term 'rod-and-bundle' is used to designate a type of foundation which is made by weaving a rod and a bundle of rods together. This type of foundation is used in many different ways, and it is one of the most important types of foundation in basketry."

groups of people at Puerto Bonito, P.O. Box 100, and 'Late Bonitians'."

a comparative list of earlier basketry types and foundations. The authors state: "In basketry, the term 'rod-and-bundle' is used to designate a type of foundation which is made by weaving a rod and a bundle of rods together. This type of foundation is used in many different ways, and it is one of the most important types of foundation in basketry."

between them."

"Old Bonitians"

"Late Bonitians"

16 Cylindrical baskets

16 Cylindrical baskets

3 Elliptical baskets

3 Elliptical baskets

1 Elliptical basket

1 Elliptical basket

20 Total

21 Total

22 Total

23 Total

24 Total

which is valuable for the study of the 'rod-and-bundle' foundation. The authors state: "In basketry, the term 'rod-and-bundle' is used to designate a type of foundation which is made by weaving a rod and a bundle of rods together. This type of foundation is used in many different ways, and it is one of the most important types of foundation in basketry."

The second conclusion is that elliptical trays may be unique to Pueblo Bonito.⁵⁵ The third point summarizes the development of burden baskets in the Pueblo area. Two lines of development are apparent. One is the sequence of conical burden baskets; the other is the sequence of bifurcated baskets from a Pueblo I burden form which has a slight basal notch. The distribution of bifurcated baskets is found in the west at Allen and Moki canyons in southeastern Utah, Segihatsosi and Segi canyons in northeastern Arizona, and in the east at Pueblo Bonito in northwestern New Mexico.⁵⁶ A comparison of these eastern and western Pueblo III variants of the bifurcated form produces the following list of traits:⁵⁷

Western Pueblo

Taller
Less flaring sides
Less V shape
Longer legs
Coarser weave

Eastern Pueblo

Shorter
More flaring sides
More V shape
Shorter legs
Finer weave

A location report for the Pueblo area describes a site east of Pueblo Bonito on the Chacra Mesa.⁵⁸ A Navaho "cache of pottery and baskets was made some time prior to the last quarter of the Eighteenth Century."⁵⁹ Among the basketry items is a water bottle with a coiled one-rod foundation, stitch noninterlocked and slant /.⁶⁰ In attempting to place this type, the author points out that Navaho basketry

⁵⁵ Ibid., 166.

⁵⁶ Ibid., 307-311.

⁵⁷ Ibid., 314-315.

⁵⁸ Vivian, Two Navaho Baskets, 1957.

⁵⁹ Ibid., 154.

⁶⁰ Ibid., 151.

The second conclusion is that the...
 Bonded. The third...
 in the Pacific area...
 sequence of...
 dated...
 The distribution of...
 and...
 northeastern...
 New Mexico...
 variants of the...

Western...
 Eastern...
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 A...
 Pacific...
 packets...
 Century...
 one...
 to place...

25	1914
26	1915
27	1916
28	1917
29	1918
30	1919
31	1920

has been described as (1) single rod and interlocking stitch (Mason), (2) single rod and uninterlocking (the basket at hand), (3) two rod and slat, uninterlocking (Tschopik), and (4) two rod and bundle or three rod uninterlocking (Morris and Burgh).⁶¹

Vivian hypothesizes that Navaho one-rod foundation is the earliest and that the increased sale of baskets with two-rod-and-bundle triangular and three-rod-triangular foundations encouraged the Navaho to change their manufacturing techniques.⁶² He notes further that the one-rod foundation, stitch noninterlocked, or interlocked, is distributed primarily in the Great Basin.⁶³

Another artifact from the Chacra cache is a wicker burden basket.⁶⁴ The author mentions that this type was one of the first to be abandoned by the Navaho.⁶⁵ Although no affiliations are presented, the basket appears to be similar to the Hopi type.

North of the Pueblo area there are ten significant location reports which investigate the archaeological cultures in two physiographic provinces. In the northern part of the Colorado Plateau is the Fremont culture. To the west, in the Basin and Range province, are located the specialized Humbolt Valley and southern Oregon cultures. Danger Cave, on the eastern margin of the province, is an early-man site which was influenced by the cultures from southern Oregon and California-Nevada. The sites of these regional complexes do not necessarily have the same time span.⁶⁶

⁶¹ Ibid., 152.

⁶² Ibid., 152-153.

⁶³ Ibid., 153.

⁶⁴ Ibid., figs. 3-4.

⁶⁵ Ibid., 149.

⁶⁶ For a summary of the Basin and northern Colorado Plateau complexes, see Jennings and Norbeck, Great Basin Prehistory, 1955; Wormington, A Reappraisal of the Fremont Culture, 1955; and Jennings, Danger Cave, 1957.

The geographic limits of the Fremont culture are outlined by Jennings and Norbeck:

East of the Great Basin in the drainage area of the Colorado and Green Rivers, extending to...Vernal, Utah, and into northwestern Colorado on the Yampa River, a complex called the Fremont culture came into existence. Although the later stages...represent a blend between the native Desert culture and Anasazi, it also has traits of its own...The time span... is from approximately A.D. 400...to 1300.⁶⁷

While only a few basket fragments occur in the archaeological remains, all but one of the sites, in the area outlined by Jennings and Norbeck, show evidence of a coiled wall type listed as half-rod-and-bundle-stacked foundation, stitch noninterlocked and slant /.

Beef Basin, geographically situated between the Fremont and Pueblo regions, is believed to be an extension of the Mesa Verde culture during Pueblo II-Pueblo III.⁶⁸ Represented is a coiled fragment, half-rod foundation with intricate stitches. The manipulation of the stitch is similar to the type found at Durango. Rudy concludes that this type was either continued as a peripheral San Juan trait or brought into Beef Basin from the south.⁶⁹

La Sal Mountain sites are located northeast of Beef Basin.⁷⁰ Three coiled wall types are listed which have a distribution from Durango in the southeast to Etna Cave in the southwest, and from Great Salt Lake in the northwest to Castle Park in the northeast; La Sal Mountain is on the eastern periphery. The types are: half-rod-and-

⁶⁷ Jennings and Norbeck, *op.cit.*, 4.

⁶⁸ Rudy, *Archaeological Excavations*, 1955, 96.

⁶⁹ *Ibid.*, 95-96.

⁷⁰ Hunt, *Archaeological Survey*, 1953.

bundle-stacked foundation, stitch noninterlocked; half-rod-and-bundle-stacked foundation, stitch interlocked; and two-rod foundation, stitch interlocked.⁷¹

Northeast of La Sal Mountain is Glade Park, Colorado, where excavations of two caves are reported.⁷² Roth Cave, 500 A.D., yields three fragments of a half-rod-and-bundle-stacked foundation, stitch noninterlocked.⁷³ Its distribution is given as Durango and Fremont.⁷⁴ Luster Cave, 1000 A.D., shows evidence of a different type: a bundle-with-rod-core foundation, stitch noninterlocked which is similar to the basketry evidence at DuPont and Etna Caves.⁷⁵

Old Woman site, located at the southern end of the Wasatch Plateau, is on the western margin of the Fremont area.⁷⁶ The site, occupied in the ten-hundreds A.D., contains two types of coiled basketry: a half-rod-and-bundle-stacked foundation which is similar to the Durango and Fremont type, and a bundle-with-rod-core similar to that found at Etna Cave.⁷⁷

Five-hundred miles northwest of the Pueblo area, in Humbolt Valley, west central Nevada, there is a specialized culture which has a complex of twined, coiled, and wicker baskets. At Humbolt Cave, wicker and coiled baskets appear in the early horizons, while twined is late, and in the surface deposit are Paiute baskets of a diagonal twined technique.⁷⁸ The archaeological twined baskets are of a type known as

⁷¹ *Ibid.*, 177.

⁷² Lister and Dick, *Archaeology of Glade Park*, 1952.

⁷³ *Ibid.*, 82, fig. 3.

⁷⁴ *Ibid.*, 82.

⁷⁵ *Ibid.*, 79.

⁷⁶ Taylor, *Two Fremont Sites*, 1957.

⁷⁷ *Ibid.*, 47, 48.

⁷⁸ Heizer and Kreiger, *Archaeology of Humbolt Cave*, 1956, 81,

bundle-stacked foundation, with horizontal, half-rod-and-bundle-
stacked foundation, with horizontal, half-rod-and-bundle-
interlocked. 71

Northeast of La Sal Mountain is Glade Park, Colorado, where
excavations of two caves are reported. 72. North Cave, 200 A.D., yields
three fragments of a half-rod-and-bundle-stacked foundation, which are
interlocked. 73. Its distribution is given as Dorango and Toluca.
Lester Cave, 1000 A.D., shows evidence of a different type of bundle-
with-rod-core foundation, which nevertheless is similar to the
basketry evidence at Dorango and Toluca Caves. 74

Old Woman site, located at the southern end of the Mesquite
Plateau, is on the western margin of the Toluca area. 75. The site, occupied
in the tenth-century A.D., contains two types of early basketry: a half-
rod-and-bundle-stacked foundation which is similar to the Dorango and
Toluca types, and a bundle-with-rod-core similar to that found at Toluca
Cave. 76

Five hundred miles northwest of the Toluca area, in Humboldt
Valley, west central Nevada, there is a specialized culture which has a
complex of tanned, coiled, and wither baskets. At Humboldt Cave, where
and coiled baskets appear in the early horizons, while tanned is late,
and in the surface deposits are tanned baskets of a diagonal tanned
pattern. 78. The archaeological tanned baskets are of a type known as

71	Told, 1917.
72	Lester and Dick, Archaeology of Glade Park, 1932.
73	Told, 1917, fig. 3.
74	Told, 1917, fig. 3.
75	Told, 1917, fig. 3.
76	Told, 1917, fig. 3.
77	Told, 1917, fig. 3.
78	Taylor, Two Fremont Sites, 1937.
79	Told, 1917, fig. 3.
80	Told, 1917, fig. 3.

Catlow twined, from the type site in southern Oregon; Catlow twined baskets are still being made by the Klamath and Modoc. Wicker baskets resemble Lovelock wicker, a specialized type produced about 2500 years ago and confined to Humbolt Valley, Pyramid Lake, and Winnemucca Lake.⁷⁹ Coiled baskets seem to vary in wall foundation, although ideally the makers may had in mind a two-(or three) rod-and-slat-triangular foundation. The importance attached to coils of uniform size created the use of any number of rods, slats, and bundles, i.e., multiple-rod-and-bundle-triangular foundation.⁸⁰

Following Heizer's Humbolt Cave study is a paper which emphasizes connections with California.⁸¹ The authors show that of 3,586 pieces of basketry discovered in Humbolt Valley, one-fourth are coarsely coiled flat trays with multiple-rod-and-bundle-triangular foundation, stitch split. Eight are finely coiled with a one-rod, three-rod-triangular, or multiple-rod-and-bundle-triangular foundation, split or interlocked stitch.⁸² With the exception of one level, each culture layer contained one or two fine coiled specimens.⁸³ The authors conclude that this type was traded into Humbolt Valley from central California where similar baskets exist today, especially among the Maidu and Washo. The comparable features are one-rod and three-rod-triangular foundations, stitch split or interlocked, with feather ornamentation and a distinctive type of design. Since the Humbolt Valley specimens date between 3000 and 500 years ago, while the central California material culture ranges between 4000 years ago and the present, the possibilities of trade are apparent.⁸⁴

⁷⁹ Ibid., 82.

⁸⁰ Ibid., 45.

⁸¹ Baumhoff and Heizer, Outland Coiled Basketry, 1958.

⁸² Ibid., 49-50.

⁸³ Ibid., 53.

⁸⁴ Ibid., 53-55.



Calvin Smith, the type of the...
are still being made by the...
Lovelock which, a special...
lined to Humboldt Valley...
basketry seen in many...
had in mind a two-...
importance attached to...
of rods, slats, and...
foundation.

Following Smith's...
connections with California...
basketry discovered in...
flat trays with...
Eight are finely...
rod-and-bundle...
the exception of one...
coiled specimens...
Humboldt Valley from...
especially among the...
and three-rod...
leather ornamentation...
Valley specimens date...
California material...
the possibilities of...

79 1940, 10-11
80 1941, 10-11
81 1942, 10-11
82 1943, 10-11
83 1944, 10-11
84 1945, 10-11
85 1946, 10-11

Near Leonard Rockshelter, in the Humbolt Valley, is a storage cave containing baskets similar to those found at Humbolt and Lovelock Caves.⁸⁵ Wicker baskets are of the Lovelock type with either two thin wefts placed double or side by side. One twined fragment resembles the Lovelock, Humbolt, and southern Oregon specimens. The dominant type of coiled basketry is a tray with a three-rod-triangular foundation and stitch split. Baumhoff notes that Weltfish gives the distribution of this type as western United States.⁸⁶ A few fine coiled specimens are attributed to trade with California, while the twined sample is ascribed to trade with southern Oregon; the latter type first appears in southern Oregon about 2500 B.C. and at Lovelock Cave between 1000 B.C. and 1 B.C.⁸⁷

The Winnemucca Lake Caves are located thirty miles west of Humbolt Valley.⁸⁸ Wicker basketry is of the Lovelock type. Coiled wall fragments are three-rod-triangular foundation, stitch split.⁸⁹ Through comparisons, Roust shows that Lovelock culture is represented in this locality, and he further notes it at Karlo site in northern California; on the basis of this evidence, he hypothesizes that the Lovelock complex covered the entire Lake Lahontan region.⁹⁰

North of Humbolt Valley an archaeologically different culture is apparent.⁹¹ Roaring Springs and Catlow Caves, in southern Oregon, primarily have yielded twined baskets, although a few coiled types were discovered.⁹²

⁸⁵ Baumhoff, Excavations of a Cache, 1958.

⁸⁶ Ibid., 16-18.

⁸⁷ Ibid., 20-21.

⁸⁸ Roust, Archaeological Materials, 1958.

⁸⁹ Ibid., 3-5.

⁹⁰ Ibid., 12.

⁹¹ Cressman, Archaeological Researches, 1942.

⁹² Ibid., 33.

have containing...
 Caves, 85...
 which placed...
 Lovelock, Nevada...
 which...
 type as...
 dated to...
 trade with...
 Oregon about...
 The...
 Nevada Valley...
 fragments...
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 on the basis...
 covered the...
 North of...
 appears, 87...
 primarily...
 discovered, 88

85	Bearpelt, Arizona
86	Idaho, 18-19
87	Idaho, 20-21
88	Idaho, 22-23
89	Idaho, 24-25
90	Idaho, 26-27
91	Idaho, 28-29
92	Idaho, 30-31

One-rod foundation, stitch interlocked is distributed from Basket Maker III sites in the Pueblo area toward the northwest through Lovelock Cave, southern Oregon Caves, Wahluke site in Washington, and into ethnographic areas of Asia. Cressman believes that the place of origin may have been the Pueblo area.

Two-rod-horizontal coiled foundation is either a modification of the one-rod or three-rod-triangular types.⁹³

Three-rod-triangular foundation is distributed from the Rio Fuerto Basket Maker-like culture in Chihuahua, Mexico, north through the Pueblo area, Lovelock Cave, southern Oregon Caves, and Wahluke site on the Columbia River in Washington. Ethnographically the type is manufactured by groups in north central California as well as the Bannock, Ute, Havasupai, Jicarilla, and San Carlos Apache.⁹⁴

Two-rod-stacked and three-rod-stacked foundations are found today among the Ute and Bannock.⁹⁵

In order to explain this distribution of basketry and certain other traits, Cressman hypothesizes a southern movement of people who were deflected by the Nevada desert into two regions. One stream migrated into the four corners area of the Southwest, while the second drifted into the Humbolt Valley and southern Oregon regions. The artifacts in the three areas, therefore, represent either survivals from a common base,

⁹³ Ibid., 50.

⁹⁴ Ibid., 49.

⁹⁵ Ibid., 50.

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or specializations produced after the split in the basic culture.⁹⁶

Danger Cave, near Wendover, Utah, is situated between the western Basin cultures and those of the Colorado Plateau.⁹⁷ Although marginal to two areas, Danger Cave manifests more influence from the west than from the east.⁹⁸ Two types of twined basketry are present. The first, with stitch slant down to the left, resembles the basket technique of southern Oregon; the second, with stitch slant down to the right, resembles that of Lovelock Cave, Anasazi, Mogollon, and Hohokam cultures.⁹⁹

The sequence of coiled wall types progresses from a dominant one-rod-and-bundle-stacked foundation, stitch non-interlocked in level III (4500 B.C. to 3500 B.C.) to a dominant three-rod-triangular foundation, stitch interlocked in level V (500 B.C. to 250 B.C.). Resembling Basket Maker and Pueblo are a number of coiled types: one-rod foundation, stitch intricate, Basket Maker II-III; one-rod foundation, stitch interlocked, Basket Maker III, Pueblo I, III; three-rod-triangular, stitch noninterlocked or interlocked, Pueblo III-IV.¹⁰⁰ However, Danger Cave lacks the typical Basket Maker-Pueblo two-rod-and-bundle-triangular foundation type, as well as the two-rod-stacked foundation. Jennings concludes that, while there is little similarity between Danger Cave and the Pueblo area, all of the ethnographic Basin tribes still manufacture one or more of the basket types discovered at Danger Cave.¹⁰¹

⁹⁶ *Ibid.*, 140.

⁹⁷ Jennings, Danger Cave, 1957.

⁹⁸ *Ibid.*, 202.

⁹⁹ *Ibid.*, 254-255.

¹⁰⁰ *Ibid.*, 245, 256.

¹⁰¹ *Ibid.*, 257.

or specialized production from the local market.

During the past few years, the local market has been characterized by a general decline in the production of the various types of baskets. This is due to a number of factors, including the depletion of the local supply of raw materials, the lack of skilled labor, and the competition from imported goods.

The first, which is the most serious, is the depletion of the local supply of raw materials. The local supply of raw materials has been steadily declining for many years, and this has led to a general shortage of raw materials for the production of baskets.

The second factor is the lack of skilled labor. The local population has been steadily declining, and this has led to a shortage of skilled labor. The few skilled workers who remain are often old and infirm, and they are unable to produce baskets in the same quantity and quality as in the past.

The third factor is the competition from imported goods. Imported goods are often cheaper and of better quality than locally produced goods, and this has led to a decline in the demand for locally produced baskets.

As a result of these factors, the production of baskets has declined sharply, and this has led to a general decline in the local economy. The local population is now largely dependent on imported goods, and the local market is in a state of stagnation.

It is therefore necessary to take steps to revive the local market and to encourage the production of baskets. This can be done by providing the local population with the raw materials and skilled labor they need, and by encouraging them to produce baskets for the local market.

One way to do this is to establish a local basket-making cooperative. This cooperative can provide the local population with the raw materials and skilled labor they need, and it can also provide them with a market for their products. This will help to revive the local market and to encourage the production of baskets.

Another way to do this is to provide the local population with training in basket-making. This training can be provided by the local government or by private organizations. This will help to improve the quality of the locally produced baskets and to make them more competitive in the local market.

Finally, it is necessary to encourage the local population to produce baskets for the local market. This can be done by providing them with information about the local market and by encouraging them to sell their baskets locally. This will help to increase the demand for locally produced baskets and to revive the local market.

Basket types discovered at Bagin...

96	1914
97	1914
98	1914
99	1914
100	1914
101	1914

For the region south and east of the Pueblo area there are nine significant location reports. At the southwestern terminus of the Colorado Plateau, a number of cultures are intermingled in the archaeological past. South of this, the Hohokam culture is concentrated on the Gila-Salt Rivers, while to the east the Mogollon complex is found in the mountainous terrain of Arizona and New Mexico. The Big Bend area of Texas, although marginal to the climaxes in the Southwest, has a number of distinctive traits. Between Big Bend and the Pueblo region, there is an area comprising the Guadalupe, Sacramento, and Capitan mountains, whose artifacts represent either a continuation of an early basic culture or a blend of two or more complexes. Last to be considered are the Ozark Bluff-Dwellers.

In the Flagstaff district of Arizona, Winona and Ridge Ruin show a mixture of Hohokam, Mogollon, and Pueblo traits.¹⁰² The sites were occupied in the ten-hundreds A.D.¹⁰³ Twilled yucca ring baskets are of an over-two-under-two interval.¹⁰⁴

One-rod coiled foundation, stitch noninterlocked and slant / is similar to that found at Snaketown.¹⁰⁵ One example, from Ridge Ruin, is a tubular basket inlaid with turquoise; this resembles one from Pueblo Bonito and another, though much narrower and hence like a bracelet, from El Paso. A second coiled wall technique is the two-rod-and-bundle-triangular foundation, stitch noninterlocked and slant / or \. Two of

¹⁰² McGregor, Winona and Ridge Ruin, 1941, 279-286.

¹⁰³ Ibid., 19.

¹⁰⁴ Ibid., 243.

¹⁰⁵ Ibid., 235.

these are decorated with mineral paint and resemble the Upper Gila specimens collected by Hough.¹⁰⁶ The third type is a three-rod-triangular foundation, stitch noninterlocked or split and slant /. The stitch encircles the rod in the coil below, in contrast to a similar occurring type in which the stitch penetrates the top rod in the coil below. This triangular form has an early distribution in the Great Basin, but it occurs late in the mountain region of the Southwest. The last technique is a one-rod-and-bundle-stacked foundation, stitch noninterlocked and slant /. This method and a one-rod interlocked type are generally found on the northern periphery of the Pueblo area.¹⁰⁷

Hidden House is a Pueblo III site in the Mogollon Rim area, southwest of Winona.¹⁰⁸ Two complete baskets have a three-rod-triangular coiled foundation, stitch noninterlocked and slant /. Dixon divides the three-rod-triangular type, which occurs at various sites in the Southwest, into three sub-types on the basis of stitch manipulation: (1) the stitch passes below and around the top rod of the coil below: Chevelon Ruin, Salt River Valley sites, and Ventana Cave; (2) the stitch penetrates the top rod of the coil below: Lake Canyon, Battle Canyon, Mesa Verde, Muerto, Hidden House, Palatki, and Chavez Pass; and (3) the top rod in the coil below is split full length and the stitch passes between the prepared splints: Winona and Ridge Ruin. Techniques (2) and (3) resemble the Basket Maker-Pueblo two-rod-and-bundle-triangular foundation.¹⁰⁹

¹⁰⁶ Ibid., 238-239.

¹⁰⁷ Ibid., 242-243.

¹⁰⁸ Dixon, Hidden House, 1956.

¹⁰⁹ Ibid., 60-61.

these are described in the report of the
specimens collected by the
foundation, which was made by the
enclosed the end of the soil
type in which the
triangular form
occurs late in the
is a one-foot
about 1/2. This
on the northern
Hidden House is a
southwest of
called foundation
three-foot
west, into three
which passes
into, Salt River
the top of the
Houses, Hidden
the cell below
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At the time that the Pueblo culture was operating in the north, the Hohokam was flourishing along the Gila and Salt Rivers in south central Arizona. Ventana Cave, west of Tuscon, provides evidence of a sequence from early-man hunter-gatherers, through Hohokam agriculturalists, to the modern Papago.¹¹⁰ Most of the basket fragments date between 800 and 1400 A.D.¹¹¹ Twill-plaited baskets are of an over-two-under-two interval, but plaited-ware in general does not seem to have been popular.¹¹²

Bundle and bundle-with-rod-core are the dominant coiled foundation types. One-rod foundation is next, while the Anasazi type is quantitatively less important. The stitch varies in most cases, i.e., noninterlocked, interlocked, and split; the slant also varies, being either / or \.¹¹³ Haury concludes that the modern Papago bundle foundation is a survival of the Hohokam type. However, during the interval the following changes occurred: (1) substitution of yucca for willow, (2) introduction of rim braids, (3) introduction of a starting knot, (4) new shapes, and (5) changes in designs. Lacking in the archaeological deposits are two Pima and Papago methods: bird's-nest coiling and coarse coiling.¹¹⁴

East of the Hohokam and south of the Pueblo areas is the region of the Mogollon culture, which extends from west central New Mexico into the mountain region of Arizona. Twined, plaited, and coiled baskets are among the finds at Higgins Flat, a Mogollon site on the upper San Francisco River.¹¹⁵ An example of a twill-plaited yucca ring basket has an

¹¹⁰ Haury, Ventana Cave, 1950.

¹¹¹ *Ibid.*, 411.

¹¹² *Ibid.*, 402.

¹¹³ *Ibid.*, table 33, 411.

¹¹⁴ *Ibid.*, 412-413.

¹¹⁵ Martin, et.al., Higgins Flat, 1956.

ornamental plaited rim band similar to a Mesa Verde Pueblo III type. Since plaited yucca ring baskets appear earlier in the Anasazi area, it is believed that the method diffused southward into the Mogollon area. A coiled example of two-rod-and-bundle-triangular foundation, stitch non-interlocked is representative of a type found from early to late in both Anasazi and Mogollon areas.¹¹⁶

Tularosa and Cordova Caves are south of Higgins Flat and with the latter share a similar culture.¹¹⁷ Twined baskets, although manufactured, do not appear to have been significant either in the Mogollon, Hohokam, or Anasazi complexes.¹¹⁸

Four types of coiled foundations are represented, all having noninterlocked stitches and slant /. In order of quantitative importance they are: (1) two-rod-and-bundle-triangular foundation; (2) half-rod-and-bundle-inverted-stacked foundation; (3) bundle-with-rod-core foundation; and (4) bundle foundation.¹¹⁹ Most of these types are represented in the Anasazi and Hohokam culture areas, but the emphasis is different in each case: dominant among the Hohokam are the bundle, bundle-with-rod-core, and one-rod foundation; Anasazi basketry is similar to the Mogollon in containing quantities of two-rod-and-bundle-triangular foundations. As with the Hohokam, the bundle foundation is quantitatively important in the Hueco and Big Bend regions, while both bundle and two-rod-and-bundle-triangular foundation types occur in the Guadalupe Mountain area.¹²⁰

¹¹⁶ *Ibid.*, 133.

¹¹⁷ Martin, and others, *Mogollon Cultural Continuity*, 1952.

¹¹⁸ *Ibid.*, 252.

¹¹⁹ *Ibid.*, 249.

¹²⁰ *Ibid.*, 250-251.

Cosgrove's method of analysis of the Upper Gila-Salt Rivers and Hueco sites is summarized in a recent report:

All sites investigated were disturbed by pot-hunting, etc., and artifacts were classified by comparison to Pueblo data. Primary categories of classification were "Artifacts, Pueblo," "Artifacts, either Pueblo or Basket-Maker," and "Artifacts, Basket-Maker"...such a method of classification can be greatly misleading... however ...Cosgrove's report can be used as an excellent source of descriptive data on the region...

The work of Martin, Rinaldo, et. al., describes the excavation of two caves slightly north of Cosgrove's... Stratigraphy was best defined in the Tularosa Cave... Tularosa Cave will provide the basis for the...picture of a manner of life; Cosgrove's material will be used to infer a certain geographic spread of typical artifacts...¹²¹

A list of coiled basketry traits for the Mogollon and Hueco areas is presented in Cosgrove's paper.¹²² Upper Gila-Mimbres has the following types, listed in order of quantity: two-rod-and-bundle-triangular foundation, stitch noninterlocked and slant /; bundle-with-rod-core foundation, stitch noninterlocked and slant \; the latter type and a one-rod foundation, multiple-stitch-and-wrap with slant / are each represented by one specimen. In the Hueco area the dominant types are bundle foundation, mostly interlocked stitch and slant generally /; and half-rod foundation with a similar type of stitch manipulation. The next in successive order are two-rod-and-bundle-triangular foundation stitch noninterlocked, although three specimens have interlocked stitches, and slant generally /; one-rod-with-vertical-lateral-bundle, stitch split

¹²¹ McNutt, A Re-evaluation, 1954, 78-80.

¹²² Caves of the Upper Gila, 1947, 105.

or interlocked and slant /; one-rod foundation, stitch split and slant /; and, last, bundle-with-rod-core, stitch split and slant /.¹²³ From an inspection of the data, Cosgrove hypothesizes a Basket Maker-Pueblo relationship with the Gila-Mimbres area and a Big Bend relationship with the Hueco area. The latter areas share in producing a bundle or variants of the one-rod foundation, stitch split.¹²⁴

Basketry data for the Big Bend region is summarized in Setzler's paper.¹²⁵ He states that the coiled bundle foundation, stitch split is characteristic of the western part of the area, while the same foundation with interlocked stitch dominates in the eastern part. Plaited baskets are of a diagonal twill over-two-under-two interval. Twined basketry also occurs.¹²⁶

From a survey of southeastern New Mexico, Mera concludes that two cultures may be involved in the area.¹²⁷ Two types of wall foundations are manifested: two-rod-and-bundle-triangular, stitch noninterlocked or split; and bundle foundation, stitch noninterlocked or interlocked.¹²⁸

Eight-hundred miles east of the Southwest are the sites designated as those of the Ozark Bluff-Dwellers of Arkansas, Missouri, and Oklahoma.¹²⁹ Harrington reasons that while twined, twilled, wicker, and coiled baskets were manufactured by the cave occupants, the products resemble those of the Southwest from where the types may have diffused.¹³⁰

¹²³ *Ibid.*, 105.

¹²⁴ *Ibid.*, 108-110.

¹²⁵ *A Prehistoric Cave Culture*, 1935.

¹²⁶ *Ibid.*, 106.

¹²⁷ *Reconnaissance*, 1938, 67.

¹²⁸ *Ibid.*, 50-51, 67.

¹²⁹ *Harrington, Ozark Bluff-Dwellers*, 1924.

¹³⁰ *Ibid.*, 10, 14-15.

or interbedded and also \; one-rod foundation, which is also
and, last, bundle-rod-core, which is also
inspection of the data, Geogreave hypothesis, which is also
relationship with the Gila-Monster area and the Gila-Monster
the Huro area. The latter area shows in which the Gila-Monster
of the one-rod foundation, which is also
Basketry data for the Gila-Monster area, which is also
paper. 122 He states that the coiled part of the foundation, which is also
characteristic of the western part of the area, which is also
with interbedded which dominates in the eastern part of the area, which is also
are of a diagonal twill over-two-under-two twill, which is also
also occurs. 123
From a survey of southeastern Arizona, which is also
two centers may be involved in the area, which is also
are manifested two-rod-and-bundle-rod-twill, which is also
twill and bundle foundation, which is also
Eight-hundred miles east of the Gila-Monster area, which is also
designated as those of the Gila-Monster area, which is also
and Oklahoma. 124 Harrington reports that this twill is also
and coiled baskets were manufactured in the area, which is also
baskets resemble those of the Southwest, which is also
diffused. 125

- 123 Ibid., 105.
- 124 Ibid., 105-110.
- 125 A. H. H. Gila-Monster, 1924.
- 126 Ibid., 105.
- 127 Ibid., 105.
- 128 Ibid., 105-110.
- 129 Harrington, Gila-Monster, 1924.
- 130 Ibid., 105, 110-115.

4. Problem Reports

Having reviewed the survey, topic, and location literature, a presentation of the more inclusive problem-oriented studies will now serve to summarize the sequence and distribution of basketry in the Pueblo and adjacent areas.

There are two categories of studies which discuss the history of basketry in the Pueblo area. The first analyzes the data within the Pueblo domain, extending beyond only to trace certain relevant types. The second encompasses a number of basket making areas in order to generalize about Pueblo basketry history. Both types of reports synthesize the data and endeavor to trace the basket traits of the Pueblo area into other regions and times.

It is advisable to present the general and specific studies together in a chronological order. In this manner trends in analysis and theory become evident.

Mason's report of 1904 is the first comprehensive study of basketry for the western hemisphere.¹³¹ While he investigates the basketry for all regions, he does not attempt to relate them. A part of his text also is a first attempt to describe the history of basketry in the Pueblo area.

Archaeologically, Mason notes three kinds of Basket Maker baskets; the carrying basket, the sifter basket, the mortar basket.¹³² The Cliff-House or Cliff-Dweller types of weave are classed as checker-

¹³¹ Aboriginal American Basketry, 1904.

¹³² Ibid., 497-498.

work, wicker-work, twillwork, twine-work, and coilwork; the latter is a three-rod-triangular foundation type.¹³³ Pueblo IV and V sites, along the Little Colorado River drainage, contained twilled, wicker, and coiled baskets which resemble Hopi wares.¹³⁴

Of the ethnographic data, Mason is particularly interested in the historic "Old Pueblo" coiled baskets found at Hopi, Zuni, and Zia. The wall types are listed as three-rod-triangular and two-rod-and-splint-(welt)-triangular foundations.¹³⁵

Twenty-six years later, a brief paper by Weltfish provides a comparison of several North American basket-making areas.¹³⁶ The archaeological data centers in the Pueblo, southern California, Lovelock, and Ozark regions.¹³⁷ Except for the Ozark, the areas are part of the archaeological Greater Southwest.

Although the Basket Makers are the producers of a few twill-plaited baskets of globular, cylindrical, and yucca ring forms, the technique is more typical of the Cliff-Dwellers. The Ozark Bluff-Dwellers represent another archaeological area of twill-plaited baskets. Exclusive of Ozark, the two western regions of wicker basketry are Hopi-Zuni and Lovelock Cave-Pomo. According to Weltfish, the two types of wicker-ware are not related.¹³⁸

¹³³ For certain purposes, Mason groups the various kinds of basket weaves without regard to form; if a mat or sandal is constructed in a wicker technique, it is classified as wickerwork. Hence, Mason probably does not mean that the P III complex has wicker and twined baskets but, rather, that this type of weave was present in other artifacts. Furthermore, it should be noted that the term Cliff-Dweller is an old term for P III. Ibid., 496-497.

¹³⁴ Ibid., 508-509.

¹³⁵ Ibid., 253, 502.

¹³⁶ Prehistoric North American Basketry, 1930.

¹³⁷ Ibid., 486.

¹³⁸ Ibid., 490-491.

work, wicker-work, twill-work, and willow-work; the latter in a three-rod-triangular foundation type. 135 Pueblo IV and V sites, along

the Little Colorado River drainage, contained twilled, wicker, and

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135 Ibid., 205-207.
136 Ibid., 223, 202.
137 Ibid., 486.
138 Ibid., 190-191.

Coiled baskets of the Basket Makers are characterized as two-rod-and-bundle-triangular foundation, stitch noninterlocked and slant /. Unusual specimens are bundle-with-rod-core foundation and one-rod foundation, stitch intricate. A wall fragment discovered in a cliff dwelling is listed as three-rod-triangular foundation, stitch noninterlocked and slant /. An undated fragment has a two-rod-and-bundle-stacked foundation which is manipulated in a double coiling technique similar to modern Salinan and San Carlos Apache.¹³⁹

Breaking up the complex of wall features, Weltfish traces the distribution of elements. The variant types of triangular foundation are found archaeologically in the Basket Maker two-rod-and-bundle, the Cliff Dweller three-rod, and Lovelock Cave three-rod; ethnographically among central California and certain Southwest tribes who produce a three-rod type. The archaeological areas mentioned also manufacture a one-rod foundation. Noninterlocked stitch occurs archaeologically in the Basket Maker and southern California regions, while ethnographically it is found among the Yuki, southern California, and Southwestern groups. Stitch slant / is distributed in Basket Maker and Lovelock Cave, ethnographically among the central California, Basin, and Southwest tribes.¹⁴⁰ A number of non-Pueblo traits will be discussed later.

In 1932, Weltfish re-analyzes her previous report.¹⁴¹ In the Pueblo area, the Basket Maker and Pueblo two-rod-and-bundle-triangular foundations are considered essentially the same. The type is also found

¹³⁹ *Ibid.*, 486-487.

¹⁴⁰ *Ibid.*, 492-493.

¹⁴¹ *Problems*, 1932.

Collected from the ...
rod-and-bundle ...
Unusual specimens are ...
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is listed as ...
slant \ ...
which is ...
Salinas and San Carlos ...
Bringing up the ...
distribution of ...
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central California and ...
type. The archaeological ...
foundation. Noninterlocking ...
Mason and southern ...
among the Yuki, ...
slant \ is distributed ...
among the central ...
non-Pueblo traits will ...
In 1932, ...
Pueblo area, the ...
foundations are ...

139 1914, ...
140 1914, ...
141 1914, ...

in Old Navaho and Old Pueblo remains.¹⁴² Two coiled wall types are regarded as intrusive: one-rod foundation, stitch interlocked and slant /; and three-rod-triangular foundation, stitch noninterlocked and slant /.¹⁴³ Ethnographically, the latter type is produced by Havasupai, San Carlos, and Jicarilla Apache.¹⁴⁴

The other archaeological areas have evidence of basketry which is similar to that "found in modern areas closely contiguous to the ancient sites."¹⁴⁵ An abbreviated list of areas and types is presented below:¹⁴⁶

A. California Cave and ethnographic southern California:

1. Multiple-grass foundation, stitch noninterlocked and slant \.

B. Lovelock Cave and indicated central California tribes:

2. One-rod foundation, stitch split or interlocked and slant /; stitch penetrates top rod in the coil below. No modern resemblances.
3. One-rod foundation, stitch interlocked, and slant /; stitch encircles top rod in the coil below; fine weave. Resembles Pomo.
4. Three-rod foundation, stitch split and slant /. Resembles Maidu and Washo.
5. Three-rod-triangular foundation, stitch interlocked and slant /; fine weave. Resembles Pomo.

C. Snake River and ethnographic coastal Salish:

6. Multiple-splint foundation, stitch split and slant \.

142 Ibid., 114.
 143 Ibid., 109.
 144 Ibid., 115.
 145 Ibid., 117.
 146 Ibid., 110-117.

in Old Navaho and Old Pueblo remains, ...
 regarded as intrusive: one-rod ...
 and three-rod-triangular ...
 Ethnographically, the latter ...
 and Jicarilla Apache, ...

The other ...
 is similar to that found ...
 ancient sites, ...
 below, ...

- A. California Cave and ...
1. Multiple ...
2. Lovelock Cave and ...
3. One-rod ...
4. One-rod ...
5. Three-rod ...
6. Three-rod ...
7. Snake River and ...
8. Multiple ...

115	116	117	118	119	120
121	122	123	124	125	126
127	128	129	130	131	132
133	134	135	136	137	138
139	140	141	142	143	144

D. Ozark Bluff Dwellers and ethnographic Basin and Plains tribes:

7. One-rod foundation, stitch interlocked and slant /.
8. Two-rod-stacked foundation, stitch split and slant /.

Having connected a series of archaeological basketry areas with a number of corresponding ethnographic regions, Weltfish in another paper presents a detailed analysis of the Basket Maker-Pueblo data.¹⁴⁷ Two types of twill-plaited baskets are differentiated. The first, associated with Basket Maker sites, is an over-two-under-two interval woven downward from the top. The second is the dominant Pueblo technique which is a yucca ring basket of either over-two-under-two or over-three-under-three weave. The distribution of the latter type is more extended, including the eastern San Juan in Colorado and New Mexico and Bear Creek Ruin in southern Arizona.¹⁴⁸

Twined baskets have a limited distribution in the Pueblo culture, occurring at Palatki, Old Hopi, and Old Zuni. This association is contrasted to the non-Pueblo tribes who manufacture quantities of the ware.

Wicker baskets appear in Pueblo IV, restricted to the Little Colorado River drainage, except for a few similar finds to the south at Bear Creek Ruin. Hopi is the only Pueblo survivor producing this type.¹⁴⁹

The dominant Basket Maker-Pueblo coiled-ware, two-rod-and-bundle-triangular foundation, is divided on the basis of texture into two

¹⁴⁷ Preliminary Classification, 1932.

¹⁴⁸ Ibid., 42.

¹⁴⁹ Ibid., 42.

D. Oscar Smith, Guelph and ethnographic series and plates

- 7. One-piece foundation, which is the most common and simple.
- 8. Two-piece foundation, which is the most common and simple.

Having connected a series of archaeological objects with a number of corresponding ethnographic series, which in another paper presents a detailed analysis of the Basket Maker-Pueblo series. The types of will-plaited baskets are differentiated. The types associated with Basket Maker sites, as an over- and under- two interval series from the top. The second is the dominant Pueblo technique which is a cross ring basket of either over-two-under-two or over-three-under-three weaves. The distribution of the latter type is more extensive, including the eastern San Juan in Colorado and New Mexico and Bear Creek in southern Arizona.

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Wicker baskets appear in Pueblo IV, restricted to the little Colorado River drainage, except for a few similar finds to the south as Bear Creek River. Hopi is the only Pueblo group producing this type. The dominant Basket Maker-Pueblo coiled-wire, two-piece foundation-translation foundation, is divided on the basis of texture into two

sub-types, the Pueblo variant having finer weave.¹⁵⁰ The Basket Maker variant is distributed along the San Juan River from Kane County, Utah, to Piedra, Colorado.¹⁵¹ A second region of concentration exists in southern New Mexico, near Las Cruces.¹⁵² Another type made by Basket Makers is a sifter basket with a two-rod-and-bundle-triangular foundation, stitch involved; labeled B, it is distributed in a narrow strip from southeastern Utah to southeastern Arizona. Type A has a different involved stitch which is manipulated on a one-rod foundation; although it occurs at DuPont Cave and Grand Gulch, Weltfish believes it is intrusive in the Pueblo area.¹⁵³

The Pueblo two-rod-and-bundle-triangular foundation variant has a wide distribution which includes the San Juan drainage, Pajarito Plateau, and south to Bear Creek.¹⁵⁴ A second basketry type found during this period is the three-rod-triangular foundation, stitch noninterlocked and slant /. It is distributed from Pueblo Bonito in the east to Mesa Verde in the north, and from Palatki Ruin in the west to Casa Grande in the south. Weltfish believes that a two-rod-and-reed-triangular foundation, in the Pueblo area, is transitional to the three-rod-triangular foundation. She feels that the latter type, however, is intrusive in the Pueblo area.¹⁵⁵ Ethnographically, the three-rod-triangular method occurs from central California in a strip down through western Nevada into central Arizona.¹⁵⁶ The other coiled foundation

150 Ibid., 6.
 151 Ibid., 3-23.
 152 Ibid., 31.
 153 Ibid., 41, 43.
 154 Ibid., 38-39.
 155 Ibid., 39-40, 44.
 156 Ibid., 39.

types, in the Cliff-Dweller period, are generally vertical forms which are found along the northern Pueblo periphery.¹⁵⁷

Tschopik, starting with basket fragments excavated at Chaco Canyon, presents a survey of basketry for the Southwest and adjacent areas.¹⁵⁸ Plaited-ware is unimportant during the early periods in the Pueblo area, but later it becomes a significant technique of making baskets. To the south, the ware increases in quantity, while to the north it fades out along the Pueblo periphery.¹⁵⁹

The time and area correlations of coiled basketry types are summarized in Figure 2.¹⁶⁰

Morris and Burgh published the last major study on Pueblo basketry.¹⁶¹ Primarily concerned with the archaeological Prayer Rock district in northeastern Arizona, the authors extend their basketry analysis to cover the San Juan drainage from Basket Maker II through Pueblo III.

Their evidence indicates that the basketry in the San Juan area progresses in a number of trait trends. The two-rod-and-bundle-triangular coiled foundation and the one-rod foundation continue in the region until recent times. On the other hand, the intricate stitched sifter basket types do not survive past Basket Maker III.¹⁶² The three-rod-triangular foundation first occurs in Pueblo III, where it is of equal importance to the surviving Basket Maker two-rod-and-bundle-

¹⁵⁷ *Ibid.*, 40-41.

¹⁵⁸ *Artifacts of Perishable Material*, 1939.

¹⁵⁹ *Ibid.*, 102-103.

¹⁶⁰ *Ibid.*, 112-126.

¹⁶¹ *Anasazi Basketry*, 1941.

¹⁶² *Ibid.*, 57.

types, in the Cliff-Dweller period, and are found along the northern edge of the desert.

Typically, however, the Cliff-Dweller period is represented by a series of small, scattered sites.

158. Platted ways in the Cliff-Dweller period are found in the desert, but later in the period they are found in the desert.

159. To the south, the desert is found in the desert, but later in the period they are found in the desert.

The time and area covered by the Cliff-Dweller period is summarized in Figure 1.

160. Harris and Hays have identified the Cliff-Dweller period as a series of small, scattered sites.

161. Primarily composed of small, scattered sites, the Cliff-Dweller period is found in the desert.

162. To cover the area from the desert to the desert, the Cliff-Dweller period is found in the desert.

163. Their evidence indicates that the Cliff-Dweller period is a series of small, scattered sites.

164. The evidence indicates that the Cliff-Dweller period is a series of small, scattered sites.

165. The evidence indicates that the Cliff-Dweller period is a series of small, scattered sites.

166. The evidence indicates that the Cliff-Dweller period is a series of small, scattered sites.

167. The evidence indicates that the Cliff-Dweller period is a series of small, scattered sites.

168. The evidence indicates that the Cliff-Dweller period is a series of small, scattered sites.

169. The evidence indicates that the Cliff-Dweller period is a series of small, scattered sites.

Figure 2

Coiled Basketry: Type-Area-Time Correlations

	<u>BM II - P II</u>	<u>P III - P IV</u>	<u>P V</u>
Pueblo	2-rod-and-bundle triangular; non- interlock, /	same	same
Northern periphery	Mixture of types: Bundle, 1-rod, Bundle-rod-core, vertical forms; noninterlock, split, interlock, /	1-rod, 3-rod- triangular, vertical forms	vertical forms, split, /
Basin	1-rod; interlock, /	No data	1-rod; noninter- locked or inter- lock, / or \
	3-rod-triang; noninterlock, split, interlock, /		3-rod-triang; stitch same as 1-rod
Central California	No data	No data	1-rod; split or interlock, /
			3-rod-triang; stitch same as 1-rod
Southern California	No data	Bundle; noninterlock, \	Same
Chihuahua (Mexico)	BM type	No data	No data
	Bundle; noninter- lock, /		
Coahuila (Mexico)	Bundle; noninter- lock, /	No data	No data
Big Bend	Bundle; split or interlocked, /	same	No data

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Collected specimens

EM 11 - 1-11

Pueblo

2-rod-and-bundle
triangular; no-
interlock, \

Northern
periphery

Mixture of types
Bundle, 1-rod,
Bundle-rod-rod,
vertical form,
noninterlock,
split, interlock,

Basin

1-rod; interlock,

Central
California

No data

3-rod-triangular;
noninterlock,
split, interlock, \

Southern
California

No data

Chihuahua
(Mexico)

EM type

Bundle; noninter-
lock, \

Coahuila
(Mexico)

Bundle; noninter-
lock, \

Big Bend

Bundle; split;
interlock, \

triangular technique. The three-rod-triangular method then becomes dominant in Pueblo IV.¹⁶³

A refinement in stitching coiled baskets is another trend which develops through the periods.¹⁶⁴

A third trend is evident in the changing shape of the carrying basket. The form starts in Basket Maker II as a conical basket with a pointed bottom. In Basket Maker III a wedge shaped basket with a slight basal arch appears to have been made along with the conical form. Developing from the wedge shape, a bifurcated carrying basket appears in Pueblo III.¹⁶⁵

A fourth trend is apparent in the development of ornamentation. In Basket Maker II only black weaving strands form the design; in addition to black, red appears in Basket Maker III.

There was progressive elaboration of design, characterized by involved and intricate balancing of black against red, with coverage of a larger proportion of the field. This movement would seem to have reached its peak in Pueblo I...Yet the Basket Maker III style lived on to appear after the unrepresented interval of Pueblo II, restricted to the ceremonial carrying basket of Pueblo III.

Pueblo III designs employ motifs current in contemporary pottery decoration. Here is an interesting case of reversal. In Basket Maker III when pottery first began to be made, painted decoration was attempted only on bowl interiors. The designs used were direct copies of those on trays and bowls of the time. [i.e., basket vessels.]¹⁶⁶

¹⁶³ Ibid., 14-15.

¹⁶⁴ Ibid., 57-58.

¹⁶⁵ Ibid., 54.

¹⁶⁶ Ibid., 58.

extraneous techniques. The three-red technique method then becomes dominant in Pueblo IV. 163

A refinement in attaching coiled baskets is another trend which develops through the periods. 164

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163 Ibid., 16-15.
164 Ibid., 27-28.
165 Ibid., 26.
166 Ibid., 28.

Morris and Burgh believe, contrary to Weltfish, that the one-rod coiled foundation, stitch interlocked, is indigenous to the Pueblo area. They base their conclusion on (1) quantity, (2) lack of marginal distribution, (3) failure to establish a temporal priority in some other area, (4) association of the type with Basket Maker III, Pueblo I, and Pueblo III material, (5) association with several techniques which the authors consider indigenous, and (6) the fact that interlocked stitches occur on other kinds of Pueblo foundations.¹⁶⁷

On the problem of two-rod-and-reed-triangular foundations, discussed by Weltfish, the authors feel that the type never occurred in the Pueblo area. They believe, however, that the three-rod-triangular foundation method is indigenous.¹⁶⁸ The one-rod, stitch intricate, which is postulated by Weltfish as being intrusive into the Pueblo area, also is regarded as typical.¹⁶⁹

In a review of Morris and Burgh, Weltfish reiterates her belief in the following inferences: (1) two-rod-and-reed-triangular foundation as a transitional step to three-rod-triangular, (2) interlocked stitch as a technique brought by "basket makers from the north...into this region consistently throughout its history and [the people] kept practising interlocking perhaps even along with noninterlocking..."¹⁷⁰

A major trend in the literature of Pueblo basketry is perhaps a part of the trend seen in other aspects of material culture studies. That is, as more field work is conducted, more detailed knowledge is

¹⁶⁷ *Ibid.*, 8-9.

¹⁶⁸ *Ibid.*, 7, 14.

¹⁶⁹ *Ibid.*, 18.

¹⁷⁰ Review of Anasazi Basketry by Morris and Burgh, 1944, 389.

Mountains and hills, and the valleys between them.

red colored limestone, and the hills are covered with it.

area. They have been found in the same place.

distribution. (3) The hills are covered with it.

area, (4) association of the hills with the limestone.

People III area, (5) association of the hills with the limestone.

authors consider this as a new discovery. The hills are covered with it.

occur on other hills of the same type.

On the problem of the hills, the authors have found that the hills are covered with it.

discussed by Williams. The hills are covered with it.

the Pacific area. They believe that the hills are covered with it.

foundation which is indicated by the hills. The hills are covered with it.

is postulated by Williams as being a new discovery. The hills are covered with it.

is regarded as typical.

In a review of the hills, the authors have found that the hills are covered with it.

believed in the following hills. (1) The hills are covered with it.

foundation as a transitional type. The hills are covered with it.

which as a technique of the hills. The hills are covered with it.

region consistently throughout the hills. The hills are covered with it.

listing interesting patterns. The hills are covered with it.

A major trend is the hills. The hills are covered with it.

a part of the trend seen in other aspects of the hills. The hills are covered with it.

That is, as more hills are found, the hills are covered with it.

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acquired. Mason, for example, could list only three or four coiled techniques in the Pueblo area. Morris and Burgh recently enumerated thirty coiling methods for the San Juan area alone. Even if most of these are sub-types of a few basic methods, the increase in the amount of data provides more adequate evidence for dealing with the history of Pueblo basketry.

Another trend is related to the first. As more details are known about the history of basketry in the Pueblo region, there are more investigations conducted into nearby areas to determine the extent of diffusions and inter-area influences. Perhaps the most influential study towards standardizing basketry analysis in the Greater Southwest is Morris and Burgh's *Anasazi Basketry*. Because their terminology has been adopted by most field workers, it is possible to compare basketry features from a number of areas in the Greater Southwest. Site reports reflect this trend. For example, the Tularosa-Cordova Caves study gives a history of basketry for the eastern Mogollon area along with comparable basketry histories of the Hohokam and Pueblo regions.¹⁷¹

C. ORGANIZATION OF THE STUDY

The present chapter contains a formulation of the thesis problem: to determine the cultural processes for the distribution and development of the basketry technology occurring in the Pueblo area. Under the divisions of survey, topic, location, and problem reports, the anthropological literature bearing upon the thesis problem is then reviewed.

¹⁷¹ Martin, and others, *op.cit.*, 249-251.

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Another trend is related to the first. As more details are known about the history of basketry in the Pueblo region, there are more investigations conducted into nearby areas to determine the extent of diffusion and later-time influences. Perhaps the most influential study towards standardizing basketry analysis in the Greater Southwest is Morris and Burghs' *Navaho Basketry*. Because their terminology has been adopted by most field workers, it is possible to compare basketry features from a number of areas in the Greater Southwest. This report reflects this trend. For example, the Tularosa-Gardner Cave study gives a history of basketry for the eastern Mohave area along with comparable basketry histories of the Hohokam and Pueblo regions. IV.

C. ORGANIZATION OF THE STUDY

The present chapter contains a formalization of the thesis problem to determine the cultural processes for the distribution and development of the basketry technology occurring in the Pueblo area. Under the divisions of survey, topic, location, and problem reports, the anthropological literature bearing upon the thesis problem is then reviewed.

The next step is an examination of the procedures which are used to analyze, classify, and interpret the data relevant to the problem. Certain assumptions, theoretical concepts, methods of describing basketry techniques, and problems of analysis, therefore, are presented in Chapter II.

Descriptive basket types, identified by strictly objective criteria, and the sites containing these types are listed in Chapter III.

In Chapter IV, inferences are derived from an examination of the data. The history of each relevant basketry technique is analyzed and presented in terms of the cultural processes which are indicated by the ordering of the data. The techniques appearing in the Pueblo area are then summarized.

Finally, the conclusions which have been determined are presented in Chapter V.

CHAPTER II

METHODOLOGY

A methodology consists of a system of tools which are used to solve a problem. The tools are techniques of analysis and theoretical concepts.

At the base of the methodological system in the present study are the real baskets. On the second level are the analytic techniques for ordering the data, consisting of (1) a list of definitions of descriptive basket types; (2) another list enumerating their locations, quantities, and technical associations; and (3) maps and diagrams, used in conjunction with the interpretations, showing the distributions of descriptive types. Theory, on the third level of the system, consists of general concepts related to culture and specific hypotheses about the history of basketry in the Pueblo area. In the section on the history of the problem the specific hypotheses are reviewed; these hypotheses are again discussed in the interpretative sections of the paper.

A. THEORETICAL CONCEPTS

Two concepts derived from culture theories are applicable to the basketry problem. One concept is concerned with the relationship between material objects and human behavior. Thompson states: "The behavior associated with the manufacture and use of objects should be

CHAPTER II

INTRODUCTION

A methodology consists of a series of steps which are used to solve a problem. The steps are arranged in a logical and systematic order. At the base of the methodological system in the present study are the real concepts. On the second level are the analytic techniques for ordering the data, consisting of (1) a list of definitions of descriptive basket types; (2) a list of descriptive techniques, used quantitatively, and technical associations; and (3) maps and diagrams, used in conjunction with the interpretative techniques, showing the distribution of descriptive types. Theory, on the third level of the system, consists of general concepts related to culture and specific hypotheses about the history of basketry in the Pacific area. In two sections on the history of the problem the analytic hypotheses are reviewed; these hypotheses are again discussed in the interpretative sections of the paper.

1. THEORETICAL CONCEPTS

Two concepts derived from culture theories are applicable to the basketry problem. One concept is concerned with the relationship between material objects and human behavior. Thompson states: "The behavior associated with the manufacture and use of objects should be

combined...there are indications in the description of that object which suggest that behavior."¹

The other concept has reference to the interrelation between behaviors manifested in a number of objects. For example, White speaks of studying the interrelation of "symboling" behaviors.² Baskets, therefore, may indicate their requisite behaviors of manufacture and these techniques may then be compared and related on the basis of how the data is organized.

The present study is also concerned with categories of behavior that are responsible for the differences and similarities in the methods of producing baskets. These categories are the cultural processes which have been discussed in Chapter I.

B. TECHNIQUES OF ANALYSIS

The manner of defining the descriptive types is important, for it provides a basis for inferences about baskets. A descriptive type is a group of baskets or parts which have common technical features. A feature is a visual characteristic implying a unit of behavior. In sequence, a series of unit behaviors is responsible for the production of a basket.³ The series can be divided into clusters of behaviors, each being responsible for a particular part of the basket, such as start, weave, and finish.

¹ Modern Yucatecan Maya Pottery, 1958, 3.

² Concept of Culture, 1959, 231.

³ Ford, A Sample Comparative Analysis, 1937, 226-227.

combined...there are indications in the description of that object which suggest that behavior.¹

The other concept has reference to the interrelation between behaviors manifested in a number of objects. For example, little groups of studying the interrelation of "grouping" behaviors. However, these, may indicate their respective behaviors of individuals and these techniques may then be compared and related on the basis of how the data is organized.

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¹ Modern Yucatec Maya Pottery, 1952, p. 1.
² Concept of Culture, 1952, p. 1.
³ Ford, A Sample Comparative Analysis, 1937, 250-257.

1. The Start

Starts, other than coiled-ware, are characterized either as a number of radiating warps or layered warps. Wicker and twined baskets generally have radial centers, while plaited baskets have layered centers.⁴ Each class is differentiated on the basis of how the warps are held together, i.e., tied, stratified, or lashed.⁵ Coiled centers are distinguished on the basis of the manipulation of the starting foundation. The center thus may begin as a spiral or oval by circling the foundation back upon itself, or it may be tied into a knot with the extended ends bunched to form the spiraling coil. A third kind of coiled beginning occurs when the foundation elements are first plaited and then bunched to form the spiral.

2. The Weave

Broad categories of basketry are defined by the kind of relationship which exists between the warp or foundation and the weft or stitch. The former is called the passive element, the latter active.⁶ Coiled basketry has a continuous foundation spiral and a weaving strand which holds the foundation in place by a series of stitches binding the work coil to the previous coil. Plaited basketry has two active weaving units which are woven over and under each other. Wicker basketry has a passive vertical warp unit and an active horizontal weft unit which proceeds over and under the warps. Twined basketry also has

⁴ Balfet, Basketry, 1957, 11.

⁵ Ibid.

⁶ Balfet uses the terms standard for warp and foundation, and thread for weft and stitch. Ibid., 4.

a passive vertical warp unit, but it contains two active weft units which are given a half twist between the warps; one goes behind, the other in front of the warp.

More specific kinds of relationships between the active and passive elements are a basis for further divisions in the categories of weaves.

Coiled basketry has the following independent features, whose relationships form innumerable variants.

1. Foundation

In form the foundation is bunched (a bundle of grass or a number of bunched rods), triangular, or stacked.⁷ In each, further differentiation occurs on the basis of the number of elements contained in the foundation; e.g., one-rod, two-rod-and-bundle-triangular, three-rod-stacked.

2. Stitch

The stitch holds the foundation elements in place and attaches the work foundation or coil to the previous coil. The manner of stitch manipulation is divided into a number of independent variables:

a. Simple, stitch-and-wrap, or intricate stitch

The simple stitch makes a revolution around the work coil engaging part of the coil beneath.

The stitch-and-wrap has a simple stitch followed by one or more turns of the splint around the work coil.

⁷ Weltfish, Prehistoric North American Basketry, 1930, 465.

a passive vertical warp with the front of the warp.
are given a half twist between the front of the warp.

More specifically, the front of the warp is
passive elements are a vertical twist between the front of the warp.

Colored bands of the front of the warp are
relationships from the front of the warp.

In form the front of the warp is a vertical twist between the front of the warp.
number of turns of the front of the warp is a vertical twist between the front of the warp.
further differentials of the front of the warp are a vertical twist between the front of the warp.
elements of the front of the warp are a vertical twist between the front of the warp.
and double-twisted bands of the front of the warp.

2. Stitch
The stitch is a vertical twist between the front of the warp.
the work is twisted of the front of the warp.
of stitch manipulation is a vertical twist between the front of the warp.
vertical

a. Simple, vertical twist, vertical twist
The stitch is a vertical twist between the front of the warp.
cell carrying the front of the warp.
The stitch is a vertical twist between the front of the warp.
or some other of the front of the warp.

1. Vertical, vertical twist, vertical twist

The intricate stitch engages "adjacent foundation units and is wrapped in a false knot around its standing part..."⁸

b. Noninterlocked, split, or interlocked stitch

The noninterlocked stitch passes between the binding stitches of the coil below.

The split stitch is created when the work stitch splits the binding stitch of the coil below.

The interlocked stitch is formed when the work stitch crosses under the binding stitch of the coil below.

Morris and Burgh point out the advantage of using the ascending stitch pattern to determine noninterlocked or interlocked stitches. "On the surface of the interlocked fabric the ascending chains of stitches are not vertical; instead they curve in the direction of the stitch slant... In uninterlocked basketry the stitch chains lie at right angles to the coils."⁹

c. Stitch slant / or \

In sewing the work coil to the previous coil, new stitch holes are punched in the latter coil. If the surface into which the awl is pushed is on the inside and the spiral of the foundation is observed from this work surface to be counterclockwise, new stitches will proceed in a counterclockwise manner. This means that the bottom of each stitch is offset slightly in the counter-

⁸ Morris and Burgh, *Anasazi Basketry*, 1941, 62.

⁹ *Ibid.*, 6.

The interlock stitch engages "adjacent foundation units and is wrapped in a false knot around the standing part..."

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instead they curve in the direction of the stitch element...

In noninterlocked fabric the stitch course lies at right

angles to the coils."

c. Split along \ or /

In sewing the work coil to the previous coil, new stitch

holes are punched in the latter coil. If the surface

into which the awl is pushed is on the inside and the

spiral of the foundation is observed from this work

surface to be counter-clockwise, new stitches will proceed

in a counter-clockwise manner. This means that the

bottom of each stitch is offset slightly in the counter-

clockwise direction, a practice which results in the stitch slanting up to the viewer's right. Whether the basket is viewed from top or bottom, back or front, the stitch slant will be /. But if the coil spiral is clockwise in relation to the work surface, the opposite kind of slant is achieved.

A clever weaver may create the illusion of vertical stitches, or even a contrary type which appears horse-shoe shaped when viewed from the top, i.e., the stitch leans up to the right on the work surface and up to the left on the reverse surface.

Weltfish believes that the work surface is held toward the weaver; thus, in a shallow bowl the weaving proceeds on the far edge of the circumference if the work surface is on the concave side.¹⁰ On the basis of this assumption and the determination of the work spiral, Weltfish indicates that the direction of coiling or work is either to the right or left of the worker.¹¹ Morris and Burgh, however, point out that it is doubtful whether the work surface is always held toward the worker.¹² If there is doubt, then the direction of the work in relation to the basket maker cannot be determined from an examination of the basket.

Morris and Burgh believe that the stitch slant indicates the direction of the work. "If the sewing is from

¹⁰ Prehistoric North American Basketry, 1930, 461.

¹¹ Ibid.

¹² Op.cit., 63.

clockwise direction, a practice which results in the action starting up to the viewer's right. However, the basket is viewed from top or bottom, and, of course, the tilted plane will be \perp . But in the coil spring is clockwise in relation to the work surface, the reverse kind of plane is achieved.

A clever weaver may create the illusion of vertical stitches, or even a contrary type which appears horizontal, when viewed from the top, i.e., the action leans up to the right on the work surface and on the left on the reverse surface.

Welling believes that the work surface is held level; the weaver, then, is a shallow bowl the weaver proceeds on the far edge of the circumference of the work surface is on the concave side.¹⁰ On the basis of this assumption

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Welling and Burgh believe that the action starts before

the direction of the work. If the action is to

right to left, the stitch slant is / as viewed from either surface."¹³ On the contrary this method of determining the direction of work cannot be used because the authors state that it is possible for the work surface to be held away from the worker. That is, in a shallow bowl the awl could puncture the concave wall nearest the worker and with a counterclockwise spiral of coils in relation to the work surface, the direction of work would be towards the weaver's right but the stitch slant would still be /.

If stitch slant / can be produced either by coiling the basket to the left or right of the worker, then a stitch slant is not a relevant diagnostic feature of the behavior which produces it. Weltfish states that "In hand knitting...two kinetic methods are used, the German and the English, both very different in terms of motion, but producing the same visual result...we know we are dealing with different technological traditions, - one did not arise from the other, neither are they tending to merge on the kinetic level."¹⁴

- d. Stitch encircles or penetrates an element in the foundation below

An example of the variables indicated here is seen in the three-rod-triangular foundation. The stitch may hold

¹³ Ibid., 61.

¹⁴ Op.cit., 390.

right to left, the stitch almost as \ as viewed from
 either surface. 13 On the contrary this method of
 determining the direction of work cannot be used be-
 cause the authors state that it is possible for the
 work surface to be held away from the worker. That is,
 in a shallow bowl the end could protrude the center
 well nearest the worker and with a corresponding
 spiral of coils in relation to the work surface, the
 direction of work would be towards the worker's right
 but the stitch almost would still be \.

If stitch almost \ can be produced either by coiling the
 basket to the left or right of the worker, then a stitch
 almost is not a relevant diagnostic feature of the direction
 which produces it. Weilian states that "in hand
 knitting... two kinetic methods are used, the forward and
 the backward, both very different in terms of action,
 but producing the same visual result... we know we are
 dealing with different technological traditions, - one
 did not arise from the other, neither are they tending
 to merge on the kinetic level." 14

d. Stitch enclaves or penetrates an element in the foundation

below

An example of the variables indicated here is seen in the
 three-rod-triangular foundation. The stitch may hold

the work coil to the previous coil either by encircling the top rod of the previous coil, or by penetrating it. The significance of these variables is pointed out in a recent paper.¹⁵

In plaited basketry the relation of warp and weft occurs in a number of ways dependent upon the interval at which the weaving strands are crossed over each other. Checker plaiting results when the interval is over-one-under-one, while any other combination produces twill plaiting, such as over-two-under-two, over-three-under-three, over-two-under-three.¹⁶ A basket woven in an over-two-under-two interval may have a structural design produced by shifting the elements from their normal interval; however, the basket is still characterized by its normal interval.¹⁷

Wicker basketry has only a few variables. In general the warps may proceed straight from the center to the rim without other warps being added. New warps, on the other hand, may be inserted either randomly or symmetrically. The composition of the individual warp unit varies from one rod to three or four rods. The rods may proceed along the entire length of the basket, or new rods may be inserted at intervals. The weft goes in an over-one-under-one interval for one course then alternates the next course. Occasionally, structural designs are produced by varying the weft.

Twined basketry is differentiated into plain, twilled, and wrapped.¹⁸ Plain twined basketry is the only type which is used by the Pueblo villagers.

¹⁵ Dixon, *Hidden House*, 1956, 61.

¹⁶ Douglas, *Basketry Construction Techniques*, 1935, 68.

¹⁷ Morris and Burgh, *op.cit.*, 19.

¹⁸ Weltfish, *Prehistoric North American Basketry*, 1930, 473.

The work coil in the previous part of the work was
the top of the coil. The work was done in the
the same manner as in the previous part of the work.
The work was done in the same manner as in the previous part of the work.

In the first part of the work, the work was done in the same manner as in the previous part of the work.
number of ways of doing the work. The work was done in the same manner as in the previous part of the work.
are crossed over each other. The work was done in the same manner as in the previous part of the work.
is over-one-under-one, with any other number of crossings. The work was done in the same manner as in the previous part of the work.
such as over-two-under-two, over-three-under-three, etc. The work was done in the same manner as in the previous part of the work.
A basket woven in an over-one-under-one manner is called a basket. The work was done in the same manner as in the previous part of the work.
design produced by using the elements of the basket. The work was done in the same manner as in the previous part of the work.
however, the basket is still the same. The work was done in the same manner as in the previous part of the work.
which baskets are made. The work was done in the same manner as in the previous part of the work.
may proceed straight from the center of the basket. The work was done in the same manner as in the previous part of the work.
added. The work was done in the same manner as in the previous part of the work.
symmetrically. The work was done in the same manner as in the previous part of the work.
one rod to three or four rods. The work was done in the same manner as in the previous part of the work.
length of the basket. The work was done in the same manner as in the previous part of the work.
goes in an over-one-under-one manner. The work was done in the same manner as in the previous part of the work.
next course. The work was done in the same manner as in the previous part of the work.
well.

Twined baskets are woven in the same manner as in the previous part of the work.
wrapped. The work was done in the same manner as in the previous part of the work.
Pueblo villages.

The work was done in the same manner as in the previous part of the work.
The work was done in the same manner as in the previous part of the work.
The work was done in the same manner as in the previous part of the work.
The work was done in the same manner as in the previous part of the work.

3. The Finish

Baskets may end in forms that vary from self rims to elaborate types which include nearly half of the basket wall. The following categories, merely noted here, will be explained under the definition of types.

1. Self or plain rim
2. Self rim with special types of terminations, such as false braiding or diagonal stitching
3. False braided rim constructed in several styles
4. Diagonal stitched rim
5. Rims constructed in different ways from the rest of the basket, such as a wicker basket with a coiled rim

4. Other Variables

Shape is another basketry feature useful for comparisons but particularly difficult to analyze because of the uneven reporting and fragmentary nature of archaeological finds. For the present study, shapes are grouped in broad categories such as tray, bowl, globular forms, and several burden basket forms. Within each class, the range of variations is large, resulting in less accurate historical inferences.

Ornamentation is also designated in broad terms. The present study depends upon Morris and Burgh's excellent summary of basketry ornamentation for the Pueblo area.¹⁹

¹⁹ Morris and Burgh, op.cit., 30-46.

Baroque may not be the only style of the 17th century.

types which include nearly half of the total of 17th century styles.

gories, namely modern, 17th century, 18th century, 19th century, 20th century.

1. Self or plain style

2. Self with special forms of ornamentation, such as a central panel

or diagonal stripes

3. Faces framed in decorative or carved plates

4. Diagonal, striped rim

5. Lines constructed in the 17th century style

each as a whole group with a single rim

Other styles

Shape is another category, namely, 17th century, 18th century, 19th century, 20th century.

particularly difficult to compare because of the great variety of shapes.

fragmentary nature of material and, finally, the great variety of shapes.

shapes are grouped in broad categories, namely, 17th century, 18th century, 19th century, 20th century.

forms, and several other styles, namely, 17th century, 18th century, 19th century, 20th century.

of variations is large, extending in fact to the very nature of the material.

ornamentation is also varied, in fact, 17th century, 18th century, 19th century, 20th century.

study depends upon the nature of the material and the nature of the ornamentation.

ornamentation for the 17th century.

19th century, 18th century, 17th century, 16th century, 15th century, 14th century, 13th century, 12th century, 11th century, 10th century, 9th century, 8th century, 7th century, 6th century, 5th century, 4th century, 3rd century, 2nd century, 1st century, 0th century.

19th century, 18th century, 17th century, 16th century, 15th century, 14th century, 13th century, 12th century, 11th century, 10th century, 9th century, 8th century, 7th century, 6th century, 5th century, 4th century, 3rd century, 2nd century, 1st century, 0th century.

19th century, 18th century, 17th century, 16th century, 15th century, 14th century, 13th century, 12th century, 11th century, 10th century, 9th century, 8th century, 7th century, 6th century, 5th century, 4th century, 3rd century, 2nd century, 1st century, 0th century.

5. Presentation of Techniques

Descriptive basket types are presented in a list of definitions in Chapter III. The list enumerates the types in such a manner that descriptively similar types are numerically adjacent to one another.

In addition to the list of descriptive types, another technique of presenting the data is a list indicating the locations where types are found and the quantity and technical associations of the types at each location; this list is also presented in Chapter III.

A third technique of organizing the data is with the aid of maps and diagrams. The distribution of each important Pueblo basketry technique is plotted on a map. In conjunction with the map, a diagram shows the time at which the technique occurs at various locations. The maps and diagrams are presented in Chapter IV.

On the basis of the theoretical concepts and analytic techniques set forth in this chapter, the basketry data will be analyzed and interpreted in the following two chapters.

CHAPTER III

DEFINITIONS OF DESCRIPTIVE BASKET TYPES AND REFERENCES TO LOCATIONS

This chapter constitutes the data. The basic data are basket types, each consisting of one or more baskets, or parts of baskets, which are classified on the basis of the descriptive criteria examined in the preceding chapter. Also included as data are the locations, quantifications, and technical associations of the descriptive types.

The first list provided in this chapter enumerates the descriptive types under four categories of weave, presented in an order determined by their abundance and usefulness. Hence coiled-ware is listed first, then plaited, wicker, and twined-ware.

Since coiled basketry is the category having the most abundant and useful data and also the most fragmentary remains, it is treated descriptively under the structural sub-categories of center, wall, rim, and shape. Plaited, wicker, and twined baskets are presented solely as whole basket types.

An attempt is made to have similar descriptive types follow one another in the list. Each type has a code number consisting of a letter which designates the appropriate category or sub-category, and a number assigning the type to an ordinal position within the category or sub-category: e.g., A-2 refers to the circular form (2) of a coiled-ware center (A). This method poses a problem in adding new types to the list.

CHAPTER VII

DEFINITIONS OF TECHNIQUES AND METHODS OF ANALYSIS

This chapter contains definitions of the techniques and methods of analysis used in the preceding chapters. Also included are the definitions of the terms used in the preceding chapters, and technical associations of the descriptive terms.

The first list provided in this chapter serves as the basis for the descriptive types under four categories of shape, size, and color, determined by their abundance and distribution. These are listed in the first, then listed, color, and abundance.

Since coiled baskets in the present study are the most abundant and useful type and also the most common, they are listed first, then listed, color, and abundance.

descriptively under the term, shape, size, and color, and shape, listed, color, and abundance.

whole basket types.

An attempt is made to give a brief description of the types of baskets found in the list. Each type is a code number consisting of a letter which designates the shape, size, and color, and a number indicating the type to be analyzed. The number is placed to the left of the letter, e.g., A-2 refers to a coiled basket of type A. This method gives a brief description of the types of baskets found in the list.

While not entirely satisfactory, the technique identifies the new type with the same code number as a similar type and adds a decimal number to the existing designation: e.g., A-2.1, in which the decimal number indicates a variant in which a rod, instead of a thin splint, forms the circular center.

The locations, quantifications, and technical associations of descriptive types are presented in a second list of this chapter. The numbering system for locations proceeds arbitrarily from north to south and west to east. This system makes it possible to assign a sequence of numbers to locations which are geographically contiguous and, consequently, are apt to have similar cultures (See Figure 3).

Presented for each location are location number, name of the location, reference consisting of author and year of publication of the location report, and code numbers of the descriptive types occurring at the location.

After each code number for the basket type, in the location list, there is in parentheses a number which indicates the quantity of the type or a statement of its technical association with another type. Technical association occurs when several coiling techniques are found on one basket. For example, part of a basket may be coiled with a two-rod-and-bundle-triangular foundation technique; the weaver may then have changed to a one-rod foundation in order to complete the basket. After the technical statement or quantity number, another number refers to the page on which the basket type may be found in the reference: for example, A-1(5'p.10) contains the information that five artifacts of type A-1 were found at the designated location and that page ten of the reference deals with these artifacts; at the same location there may occur another

while not entirely satisfactory, the technical classification the new type with the same code number and a similar type and adds a similar number to the existing designation: e.g., A-2, B-1, in which the technical number indicates a variant in which a rod, instead of a coil, is used, forms the circular center.

The location, quantity, and technical associations of descriptive types are presented in a second list of this document. The numbering system for locations is presented in a separate list to which and west to east. This system makes it possible to assign a sequence of numbers to locations which are geographically contiguous and, consequently, are apt to have similar cultures (see Figure 1).

Presented for each location are location number, name of the location, reference consisting of author and year of publication of the location report, and code numbers of the descriptive types occurring at the location.

After each code number for the system type, in the location list, there is in parentheses a number which indicates the number of the type or a statement of the technical association with another type. Technical association occurs when several similar techniques are found on one basket. For example, part of a basket may be coiled with a two-rod-and-bundle-arrangement foundation technique; the weaver may then have changed to a one-rod foundation in order to complete the basket. After the technical statement or quantity number, another number refers to the page on which the basket type may be found in the reference list. For example,

A-1(2)p.10) contains the information that five articles of type A-1 were found at the designated location and that page 10 of the reference deals with these artifacts; at the same location there may occur another

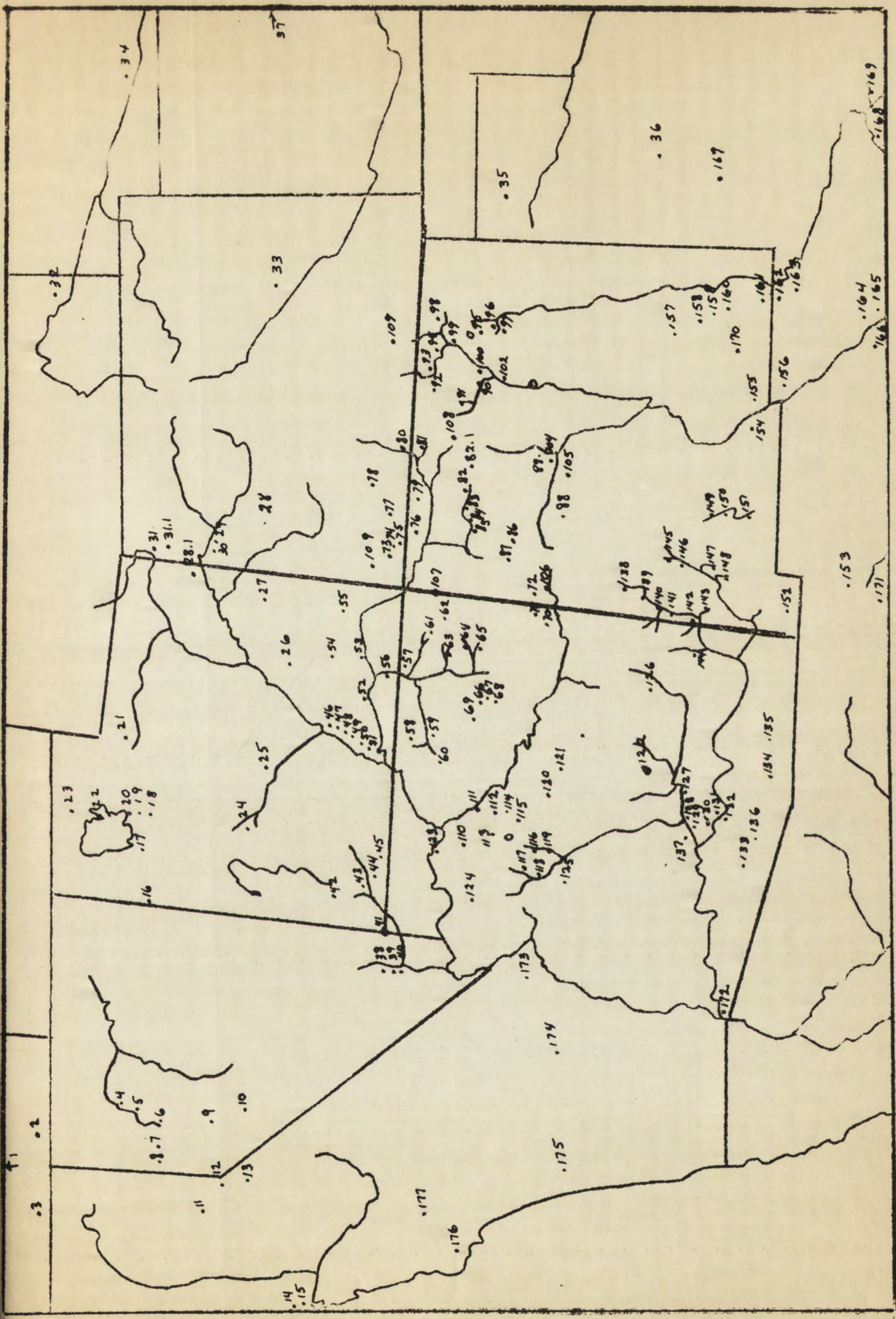


FIGURE 3 LOCATIONS REFERRED TO IN THE TEXT

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basket type, A-2 (tech. ass. with A-1'p.10) which means that the type A-2 is found on the same baskets as A-1 at the location and that the page reference to A-2 is also page ten. Quantity numbers refer to actual finds, either fragments or whole baskets. In some archaeological sites, the quantity of a type is not given; this fact is indicated by a question mark: e.g., (? 'p.10). Since the quantity of a basket type produced by an ethnographic tribe is generally not given, this fact will be indicated by an X: e.g., (X'p.10). Sometimes a report mentions that several or many baskets of a type are present: e.g., (several'p.10), (many'p.10).

A. DEFINITIONS OF DESCRIPTIVE BASKET TYPE

1. Structural Parts of Coiled Baskets

a. Center

A-1. Normal.

This type appears as a tight horizontal spiral. One end of the foundation is wrapped and bent upon itself and the next turn is stitched to this.

A-2. Circular.

A splint is bent into a circle, like a watch-spring, and the foundation for the bottom is stitched to this.

A-2.1 Circular variant number 2.

This type is the same as A-2 except that a rod is used instead of a thin splint.

A-3. Oval.

Morris and Burgh differentiate two types, summing up the similarities thusly: "They were constructed by wrapping a length of foundation...Instead of warping this segment into a circle...the coiling begins...directly upon it, thus producing an eccentric spiral and an oval basket."

¹ Morris and Burgh, op.cit., 21.

*A-4. Plaited.

This type gives the appearance of a unit with four squares. Constructed in an over-one-under-one plait, the extended ends are gathered together to form the foundation of the first coil.

*A-5. Self-knot.

This center has one or more strands twisted in such a manner that a self-knot is formed; the extending ends are gathered together to form the foundation of the first coil.

*A-6. Slip-knot.

This type has one end of the foundation wrapped and bent back upon itself where a slip-knot is formed; the first coil is stitched to this center.

b. Wall

*B-1. Foundation: half-rod

Stitch: simple, noninterlocked, slant \,
encircles or penetrates half-rod below?

*B-2. Foundation: half-rod

Stitch: simple, noninterlocked, slant?,
encircles or penetrates half-rod below?

*B-3 Foundation: half-rod

Stitch: simple, split, slant /,
penetrates half-rod below

*B-4. Foundation: half-rod

Stitch: simple, split, slant \,
penetrates half-rod below

B-5. Foundation: half-rod

Stitch: simple, interlocked, slant /,
encircles half-rod below

*B-6. Foundation: half-rod

Stitch: simple, interlocked, slant /,
penetrates half-rod below

*B-7. Foundation: half-rod

Stitch: simple, interlocked, slant \,
penetrates half-rod below

* An asterisk before a type number denotes that the type does not occur in the Pueblo area.

4A-1. **Plaited.**
This type gives the appearance of a knot with four squares.
Constructed in an over-one-under-one plait, the extended ends
are gathered together to form the foundation of the first coil.

4A-2. **Self-knot.**
This center has one or more strands twisted in such a manner
that a self-knot is formed; the extending ends are gathered
together to form the foundation of the first coil.

4A-3. **Slip-knot.**
This type has one end of the foundation wrapped and bent back
upon itself where a slip-knot is formed; the first coil is
attached to this center.

B. **Wall**

4B-1. **Foundation: half-rod**
**Stitch: simple, noninterlocked, slant **
encircles or penetrates half-rod below

4B-2. **Foundation: half-rod**
**Stitch: simple, noninterlocked, slant **
encircles or penetrates half-rod below

4B-3. **Foundation: half-rod**
**Stitch: simple, split, slant **
penetrates half-rod below

4B-4. **Foundation: half-rod**
**Stitch: simple, split, slant **
penetrates half-rod below

4B-5. **Foundation: half-rod**
**Stitch: simple, interlocked, slant **
encircles half-rod below

4B-6. **Foundation: half-rod**
**Stitch: simple, interlocked, slant **
penetrates half-rod below

4B-7. **Foundation: half-rod**
**Stitch: simple, interlocked, slant **
penetrates half-rod below

—
* An asterisk before a type number denotes that the type
does not occur in the basic set.

- *B-7.1. Foundation: half rod
Stitch: simple, interlocked, slant ?,
encircles or penetrates half-rod below ?
- *B-8. Foundation: half-rod
Stitch: intricate (type 5g of Morris and Burgh), noninterlocked,
slant /,
encircles half-rod below. "Instead of passing the splint over
the new rod to bind it to the coil below, the rod was locked on
by the wrapping below the false knot. The most difficult part
was the manipulation of the upper whorl of the stitch to form a
succession of free-standing loops, to which the next coil was
to be attached."²
- B-9. Foundation: bundle
Stitch: simple, noninterlocked, slant /,
penetrates bundle below
- *B-10. Foundation: bundle
Stitch: simple, noninterlocked, slant \,
penetrates bundle below
- *B-11. Foundation: bundle
Stitch: simple, noninterlocked, slant ?,
penetrates bundle below
- *B-12. Foundation: bundle
Stitch: simple, split, slant /,
penetrates bundle below
- *B-13. Foundation: bundle
Stitch: simple, split, slant \,
penetrates bundle below
- *B-14. Foundation: bundle
Stitch: simple, random whole and split, slant /,
penetrates bundle below
- *B-15. Foundation: bundle
Stitch: simple, split, slant ?,
penetrates bundle below
- *B-16. Foundation: bundle
Stitch: simple, interlocked, slant /,
penetrates bundle below
- *B-17. Foundation: bundle
Stitch: simple, interlocked, slant \,
penetrates bundle below

² Morris and Burgh, op.cit., 17.

- *B-7.1. Foundation: half-ton
Settles: simple, unadorned, plain
penetrates under the
- *B-8. Foundation: half-ton
Settles: simple, unadorned, plain
penetrates under the
- *B-9. Foundation: simple
Settles: simple, unadorned, plain
penetrates under the
- *B-10. Foundation: simple
Settles: simple, unadorned, plain
penetrates under the
- *B-11. Foundation: simple
Settles: simple, unadorned, plain
penetrates under the
- *B-12. Foundation: simple
Settles: simple, unadorned, plain
penetrates under the
- *B-13. Foundation: simple
Settles: simple, unadorned, plain
penetrates under the
- *B-14. Foundation: simple
Settles: simple, unadorned, plain
penetrates under the
- *B-15. Foundation: simple
Settles: simple, unadorned, plain
penetrates under the
- *B-16. Foundation: simple
Settles: simple, unadorned, plain
penetrates under the
- *B-17. Foundation: simple
Settles: simple, unadorned, plain
penetrates under the

- *B-18. Foundation: bundle
Stitch: simple, interlocked, slant ?,
penetrates bundle below
- *B-19. Foundation: bundle
Stitch: simple, noninterlocked, split, or interlocked ?, slant /,
penetrates bundle below
- *B-20. Foundation: two yucca strips set on edge
Stitch: simple, interlocked, slant ?,
encircles or penetrates strips below ?
- *B-21. Foundation: bundle
Stitch: stitch-and-wrap, noninterlocked, slant /,
penetrates or encircles bundle below ?
- *B-22. Foundation: bundle
Stitch: multiple-stitch-and-wrap, noninterlocked, slant /,
encircles or penetrates bundle below ?
- *B-23. Foundation: bundle
Stitch: intricate, interlocked, slant ?,
encircles or penetrates bundle below ?
- *B-25.³ Foundation: bundle-coarse
Stitch: simple, noninterlocked, slant /,
penetrates bundle below
- *B-26. Foundation: bundle-coarse
Stitch: simple, interlocked, slant /,
penetrates bundle below
- *B-27. Foundation: bundle-coarse
Stitch: no data
- B-28. Foundation: one-rod
Stitch: simple, noninterlocked, slant /,
encircles rod below
- B-28.1. Foundation: one-rod
Stitch: simple, noninterlocked, slant /,
encircles or penetrates rod below ?

³ In some instances a consecutive number is missing; for example, there is no type number between B-23 and B-25. The reason for this is that after descriptive types were formulated, coded, and work begun on interpretations, some of the types were scratched or incorporated into other types; since the code numbers are arbitrary, it was not thought practical to make a major revision of the 140 types.

- *B-18. Foundation: bundle
Stitch: single, interlocked, slant \,
penetrates bundle below
- *B-19. Foundation: bundle
Stitch: single, noninterlocked, split, or interlocked \, slant \,
penetrates bundle below
- *B-20. Foundation: two cross strips set on edge
Stitch: single, interlocked, slant \,
encloses or penetrates strips below
- *B-21. Foundation: bundle
Stitch: single-end-wrap, noninterlocked, slant \,
penetrates or encloses bundle below
- *B-22. Foundation: bundle
Stitch: multiple-stitch-end-wrap, noninterlocked, slant \,
encloses or penetrates bundle below
- *B-23. Foundation: bundle
Stitch: interlock, interlocked, slant \,
encloses or penetrates bundle below
- *B-24. Foundation: bundle-cord
Stitch: single, noninterlocked, slant \,
penetrates bundle below
- *B-25. Foundation: bundle-cord
Stitch: single, interlocked, slant \,
penetrates bundle below
- *B-26. Foundation: bundle-cord
Stitch: no data
- *B-27. Foundation: one-rod
Stitch: single, noninterlocked, slant \,
encloses rod below
- *B-28.1. Foundation: one-rod
Stitch: single, noninterlocked, slant \,
encloses or penetrates rod below

In some instances a consecutive number is missing; for example, there is no type number between B-23 and B-25. The reason for this is that after descriptive types were formulated, coded, and work begun on interpretations, some of the types were scratched or incorporated into other types; since the code numbers are arbitrary, it was not thought practical to make a major revision of the list types.

- *B-29. Foundation: one-rod
Stitch: simple, noninterlocked, slant \ ,
encircles rod below
- *B-29.1. Foundation: one-rod
Stitch: simple, noninterlocked, slant \ ,
encircles or penetrates rod below ?
- B-30. Foundation: one-rod
Stitch: simple, noninterlocked, slant / ,
penetrates rod below
- *B-31. Foundation: one-rod
Stitch: simple, noninterlocked, slant ? ,
encircles or penetrates rod below?
- *B-32. Foundation: one-rod
Stitch: simple, split, slant / ,
encircles rod below
- *B-33. Foundation: one-rod
Stitch: simple, split, slant \ ,
encircles rod below
- *B-34. Foundation: one-rod
Stitch: simple, split, slant / ,
penetrates rod below
- *B-35. Foundation: one-rod
Stitch: simple, split, slant / ,
encircles or penetrates rod below ?
- *B-35.1. Foundation: one-rod
Stitch: simple, split, slant \ ,
encircles or penetrates rod below ?
- B-36. Foundation: one-rod
Stitch: simple, interlocked, slant / ,
encircles rod below
- B-37. Foundation: one-rod
Stitch: simple, interlocked, slant \ ,
encircles rod below
- *B-38. Foundation: one-rod
Stitch: simple, interlocked, slant / ,
penetrates rod below
- *B-39. Foundation: one-rod-alternating-large-and-small
Stitch: simple, interlocked, slant / ,
encircles or penetrates rod below ?

- *B-29. Foundation: one-rod
Stitch: single, noninterlocked, slant
anchors rod below
- *B-29.1. Foundation: one-rod
Stitch: single, noninterlocked, slant
anchors or penetrates rod below
- *B-30. Foundation: one-rod
Stitch: single, noninterlocked, slant
penetrates rod below
- *B-31. Foundation: one-rod
Stitch: single, noninterlocked, slant
anchors or penetrates rod below
- *B-32. Foundation: one-rod
Stitch: single, split, slant
anchors rod below
- *B-33. Foundation: one-rod
Stitch: single, split, slant
anchors rod below
- *B-34. Foundation: one-rod
Stitch: single, split, slant
penetrates rod below
- *B-35. Foundation: one-rod
Stitch: single, split, slant
anchors or penetrates rod below
- *B-35.1. Foundation: one-rod
Stitch: single, split, slant
anchors or penetrates rod below
- *B-36. Foundation: one-rod
Stitch: single, interlocked, slant
anchors rod below
- *B-37. Foundation: one-rod
Stitch: single, interlocked, slant
anchors rod below
- *B-38. Foundation: one-rod
Stitch: single, interlocked, slant
penetrates rod below
- *B-39. Foundation: one-rod, staggered, large-rod
Stitch: single, interlocked, slant
anchors or penetrates rod below

- *B-40. Foundation: one-rod
Stitch: simple, interlocked, slant /,
encircles or penetrates rod below ?
- *B-40.1. Foundation: one-rod
Stitch: simple, interlocked, slant \ ,
encircles or penetrates rod below ?
- B-40.2. Foundation: one-rod
Stitch: simple, interlocked, slant ? ,
encircles or penetrates rod below ?
- B-41. Foundation: one-rod
Stitch: stitch-and-wrap, noninterlocked, slant / ,
encircles rod below
- B-42. Foundation: one-rod
Stitch: stitch-and-wrap, interlocked, slant / ,
encircles rod below
- B-43. Foundation: one-rod
Stitch: multiple-stitch-and-wrap, interlocked, slant / ,
encircles rod below
- B-44. Foundation: one-rod
Stitch: intricate (type 6e of Morris and Burgh), noninterlocked,
slant / , penetrates rod below. The stitch goes over the work
foundation, down through the coil below, comes up and makes a
half-hitch around the standing element, and is again carried
over the work foundation.
- B-45. Foundation: one-rod
Stitch: intricate (type 5g of Morris and Burgh), interlocked,
slant / , encircles rod below. The explanation of 5g is listed
under B-8.
- B-46. Foundation: one-rod
Stitch: intricate (type 5g of Morris and Burgh), interlocked,
slant \ , encircles rod below. See B-8 for a definition of
the intricate stitch 5g.
- B-47. Foundation: one-rod
Stitch: intricate (type 6a, b of Morris and Burgh), interlocked,
slant / , encircles rod below. The stitch goes over the work
foundation, encircles the rod below, comes up over the work
foundation, makes two turns around the standing element, and
starts back over the work foundation.
- B-48. Foundation: one-rod
Stitch: intricate (type 6c, d of Morris and Burgh), interlocked,
slant / , encircles rod below. The stitch goes around the work
foundation, encircles the rod below, comes up over the work
foundation, and down around the rod below, makes one turn
around the two standing elements, and starts back over the
work foundation.

- B-10. Foundation: one-rod
Stitch: simple, interlocked, slant \, encircles or penetrates rod below
- B-10.1. Foundation: one-rod
Stitch: simple, interlocked, slant /, encircles or penetrates rod below
- B-10.2. Foundation: one-rod
Stitch: simple, interlocked, slant \, encircles or penetrates rod below
- B-11. Foundation: one-rod
Stitch: stitch-and-wrap, noninterlocked, slant \, encircles rod below
- B-12. Foundation: one-rod
Stitch: stitch-and-wrap, interlocked, slant \, encircles rod below
- B-13. Foundation: one-rod
Stitch: multiple-stitch-and-wrap, interlocked, slant \, encircles rod below
- B-14. Foundation: one-rod
Stitch: intricate (type 6c of Morris and Burgh), noninterlocked, slant \, penetrates rod below. The stitch goes over the work foundation, down through the coil below, comes up and makes a half-stitch around the standing element, and its again curled over the work foundation.
- B-15. Foundation: one-rod
Stitch: intricate (type 5c of Morris and Burgh), interlocked, slant \, encircles rod below. The explanation of 5c is listed under B.8.
- B-16. Foundation: one-rod
Stitch: intricate (type 5c of Morris and Burgh), interlocked, slant /, encircles rod below. See B-6 for a definition of the intricate stitch 5c.
- B-17. Foundation: one-rod
Stitch: intricate (type 6c, b of Morris and Burgh), interlocked, slant \, encircles rod below. The stitch goes over the work foundation, encircles the rod below, comes up over the work foundation, makes two turns around the standing element, and starts back over the work foundation.
- B-18. Foundation: one-rod
Stitch: intricate (type 6c, b of Morris and Burgh), interlocked, slant \, encircles rod below. The stitch goes around the work foundation, encircles the rod below, comes up over the work foundation, and down around the rod below, makes one turn around the two standing elements, and starts back over the work foundation.

- B-49. Foundation: one-rod
Stitch: intricate (type 6f, g of Morris and Burgh), interlocked, slant /, encircles rod below. The stitch goes over the work foundation, encircles the rod below, makes a turn around the standing element, and starts back over the work foundation.
- B-51. Foundation: one-rod
Stitch: no data
- B-52. Foundation: bundle-with-rod-core
Stitch: simple, noninterlocked, slant /, penetrates bundle below
- *B-53. Foundation: bundle-with-rod-core
Stitch: simple, split, slant /, penetrates bundle below
- *B-54. Foundation: bundle-with-rod-core
Stitch: simple, interlocked, slant /, penetrates bundle below
- *B-56. Foundation: bundle-with-rod-core
Stitch: stitch-and-wrap, noninterlocked, slant /, encircles foundation below
- *B-57. Foundation: splints-with-rod-core
Stitch: simple, noninterlocked, slant \, penetrates between splints below
- *B-58. Foundation: small-rods-surrounding-rod-core
Stitch: simple, split, slant /, penetrates between rods below
- *B-59. Foundation: split-twigs-surrounding-rod-core
Stitch: no data
- B-60. Foundation: two-rod-horizontal
Stitch: simple, noninterlocked, slant ?, encircles or penetrates foundation below
- *B-61. Foundation: two-rod-horizontal
Stitch: simple, split, slant /, penetrates one of the rods below
- *B-62. Foundation: two-rod-horizontal
Stitch: simple, interlocked, slant /, encircles or penetrates foundation below ?
- *B-63. Foundation: one-rod-and-slat-horizontal
Stitch: simple, split, slant /, penetrates the slat below.

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- *B-64. Foundation: three-rod-horizontal
Stitch: simple, split, slant /,
encircles or penetrates foundation below ?
- *B-65. Foundation: three-rod-horizontal
Stitch: simple, interlocked, slant ?,
encircles or penetrates foundation below ?
- B-66. Foundation: two-rod-and-bundle-triangular
Stitch: simple, noninterlocked, slant /,
penetrates bundle below
- *B-67. Foundation: two-rod-and-vertical-lateral-bundle-triangular
Stitch: simple, noninterlocked, slant /,
penetrates bundle below
- B-68. Foundation: two-rod-and-bundle-triangular
Stitch: simple, noninterlocked, slant \,
penetrates bundle below
- B-68.1. Foundation: two-rod-and-bundle-triangular
Stitch: simple, noninterlocked, slant ?,
penetrates bundle below
- *B-69. Foundation: two-rod-and-bundle-triangular
Stitch: simple, split, slant /,
penetrates bundle below
- B-70. Foundation: two-rod-and-bundle-triangular
Stitch: simple, interlocked, slant /,
penetrates bundle below
- *B-70.1. Foundation: two-rod-and-bundle-triangular
Stitch: simple, interlocked, slant ?,
penetrates bundle below
- *B-71. Foundation: two-rod-and-bundle-triangular
Stitch: stitch-and-wrap, noninterlocked, slant /,
penetrates bundle below
- B-72. Foundation: two-rod-and-bundle-triangular
Stitch: multiple-stitch-and-wrap, noninterlocked, slant /,
penetrates bundle below
- B-73. Foundation: two-rod-and-bundle-triangular
Stitch: intricate stitch-and-wrap (type 61 of Morris and Burgh), non-
interlocked, slant /, penetrates bundle below. After the stitch
connects the work foundation with the coil below, it again crosses
over the work foundation and engages the top element of the pre-
ceding foundation; then the stitch makes a turn around the stand-
ing elements, encircles the work foundation, goes around the
standing elements again, and starts back over the work foundation.

- B-61. Foundation: three-sided horizontal. Sills: simple, vertical. Penetration of foundation below.
- B-62. Foundation: three-sided horizontal. Sills: simple, vertical. Penetration of foundation below.
- B-63. Foundation: two-sided horizontal. Sills: simple, vertical. Penetration of foundation below.
- B-64. Foundation: two-sided horizontal. Sills: simple, vertical. Penetration of foundation below.
- B-65. Foundation: two-sided horizontal. Sills: simple, vertical. Penetration of foundation below.
- B-66. Foundation: two-sided horizontal. Sills: simple, vertical. Penetration of foundation below.
- B-67. Foundation: two-sided horizontal. Sills: simple, vertical. Penetration of foundation below.
- B-68. Foundation: two-sided horizontal. Sills: simple, vertical. Penetration of foundation below.
- B-69. Foundation: two-sided horizontal. Sills: simple, vertical. Penetration of foundation below.
- B-70. Foundation: two-sided horizontal. Sills: simple, vertical. Penetration of foundation below.
- B-70.1. Foundation: two-sided horizontal. Sills: simple, vertical. Penetration of foundation below.
- B-71. Foundation: two-sided horizontal. Sills: simple, vertical. Penetration of foundation below.
- B-72. Foundation: two-sided horizontal. Sills: simple, vertical. Penetration of foundation below.
- B-73. Foundation: two-sided horizontal. Sills: simple, vertical. Penetration of foundation below.

- B-74. Foundation: two-rod-and-bundle-triangular
 Stitch: intricate stitch-and-wrap (type 6j of Morris and Burgh),
 noninterlocked, slant /, penetrates bundle below. Two stitches
 connect the work foundation with the coil below; the last
 stitch then encircles the work foundation, makes two turns
 around the standing elements, and starts back over the work
 foundation.
- B-75. Foundation: two-rod-and-bundle-triangular
 Stitch: no data
- *B-76. Foundation: two-rod-and-slat-triangular
 Stitch: simple, split, slant /,
 encircles slat below
- *B-77. Foundation: two-rod-and-slat-triangular
 Stitch: simple, split, slant /,
 penetrates slat below
- *B-78. Foundation: two-rod-and-slat-triangular
 Stitch: simple, interlocked, slant /,
 encircles slat below
- *B-79. Foundation: two-rod-and-slat-triangular
 Stitch: simple, noninterlocked, slant \,
 encircles or penetrates foundation below ?
- *B-80. Foundation: two-rod-and-slat-triangular
 Stitch: simple, split, slant \,
 encircles slat below
- B-81. Foundation: two-rod-and-slat-triangular
 Stitch: no data
- *B-82. Foundation: three-rod-triangular
 Stitch: simple, noninterlocked, slant /,
 encircles top rod below
- *B-83. Foundation: three-rod-triangular
 Stitch: simple, noninterlocked, slant \,
 encircles top rod below
- B-84. Foundation: three-rod-triangular
 Stitch: simple, noninterlocked, slant /,
 penetrates top rod below
- *B-85. Foundation: three-rod-triangular
 Stitch: simple, noninterlocked, slant \,
 penetrates top rod below
- *B-86. Foundation: three-rod-triangular
 Stitch: simple, noninterlocked, slant /,
 encircles or penetrates top rod below ?

- *B-87. Foundation: three-rod-triangular
Stitch: simple, noninterlocked, slant \,
encircles or penetrates top rod below ?
- *B-88. Foundation: three-rod-triangular
Stitch: simple, split, slant /,
encircles top rod below
- B-89. Foundation: three-rod-triangular
Stitch: simple, split, slant /,
penetrates top rod below
- *B-89.1. Foundation: three-rod-triangular
Stitch: simple, split, slant /,
encircles or penetrates top rod below ?
- *B-90. Foundation: three-rod-triangular
Stitch: simple, interlocked, slant /,
encircles top rod below
- *B-91. Foundation: three-rod-triangular
Stitch: simple, interlocked, slant /,
penetrates top rod below
- B-92. Foundation: three-rod-triangular
Stitch: simple, interlocked, slant \,
penetrates top rod below
- *B-93. Foundation: three-rod-triangular
Stitch: simple, interlocked, slant /,
encircles or penetrates top rod below ?
- B-94. Foundation: three-rod-triangular
Stitch: stitch-and-wrap, noninterlocked, slant /,
penetrates top rod below
- B-95. Foundation: three-rod-and-bundle-bunched
Stitch: simple, noninterlocked, slant /,
penetrates bundle below
- *B-96. Foundation: three-rod-triangular and one-rod-above
Stitch: simple, split, slant /,
penetrates top rod below
- *B-97. Foundation: three-rod-horizontal and one-rod-above
Stitch: simple, split, slant /,
encircles top rod below
- *B-98. Foundation: three-rod-horizontal and one-rod-above
Stitch: simple, interlocked, slant ?,
encircles top rod below

- 48-87. Foundation: three-rod-triangular
Stitch: single, noninterlocked, slight
anchors or penetrates top rod below
- 48-88. Foundation: three-rod-triangular
Stitch: single, split, slight
anchors top rod below
- 48-89. Foundation: three-rod-triangular
Stitch: single, split, slight
penetrates top rod below
- *48-90.1. Foundation: three-rod-triangular
Stitch: single, split, slight
anchors or penetrates top rod below
- 48-90. Foundation: three-rod-triangular
Stitch: single, interlocked, slight
anchors top rod below
- 48-91. Foundation: three-rod-triangular
Stitch: single, interlocked, slight
penetrates top rod below
- 48-92. Foundation: three-rod-triangular
Stitch: single, interlocked, slight
penetrates top rod below
- *48-93. Foundation: three-rod-triangular
Stitch: single, interlocked, slight
anchors or penetrates top rod below
- 48-94. Foundation: three-rod-triangular
Stitch: single-and-wrap, noninterlocked, slight
penetrates top rod below
- 48-95. Foundation: three-rod-and-bundle-bunched
Stitch: single, noninterlocked, slight
penetrates bundle below
- *48-96. Foundation: three-rod-triangular and one-rod-above
Stitch: single, split, slight
penetrates top rod below
- *48-97. Foundation: three-rod-horizontal and one-rod-above
Stitch: single, split, slight
anchors top rod below
- *48-98. Foundation: three-rod-horizontal and one-rod-above
Stitch: single, interlocked, slight
anchors top rod below

- *B-99. Foundation: three-rod-horizontal and slat-above
Stitch: simple, split, slant /,
encircles slat below
- *B-100. Foundation: three-rod-horizontal and slat-above
Stitch: simple, interlocked, slant \,
encircles slat below
- *B-101. Foundation: three-rod-horizontal and slat-above
Stitch: simple, interlocked, slant ?,
encircles slat below
- B-102. Foundation: five-rod-bunched
Stitch: simple, noninterlocked, slant /,
penetrates top rod below
- *B-103. Foundation: five-rod-bunched
Stitch: simple, split, slant /,
encircles or penetrates top rod below ?
- B-104. Foundation: half-rod-and-bundle-stacked
Stitch: simple, noninterlocked, slant /,
penetrates bundle below
- *B-105. Foundation: half-rod-and-bundle-stacked; bundle is vertical-lateral
Stitch: simple, noninterlocked, slant /,
penetrates bundle below
- B-107. Foundation: half-rod-and-bundle-stacked
Stitch: simple, interlocked, slant /,
penetrates bundle below
- *B-108. Foundation: half-rod-and-bundle-inverted-stacked
Stitch: simple, noninterlocked, slant /,
penetrates bundle below
- B-109. Foundation: half-rod-and-bundle-inverted-stacked
Stitch: simple, interlocked, slant /,
penetrates bundle below
- B-110. Foundation: one-rod-and-bundle-stacked
Stitch: simple, noninterlocked, slant /,
penetrates bundle below
- *B-111. Foundation: one-rod-and-bundle-stacked; bundle is vertical-lateral
Stitch: simple, noninterlocked, slant /,
penetrates bundle below
- *B-112. Foundation: one-rod-and-bundle-stacked
Stitch: simple, noninterlocked, slant \,
penetrates bundle below

- 8-99. Foundation: three-rod-horizontal and steel-shove
 Stitches: simple, simple, simple /
 penetrates steel below
- 8-100. Foundation: three-rod-horizontal and steel-shove
 Stitches: simple, interlocked, simple /
 penetrates steel below
- 8-101. Foundation: three-rod-horizontal and steel-shove
 Stitches: simple, interlocked, simple /
 penetrates steel below
- 8-102. Foundation: five-rod-bunched
 Stitches: simple, noninterlocked, simple /
 penetrates top rod below
- 8-103. Foundation: five-rod-bunched
 Stitches: simple, simple, simple /
 encircles or penetrates top rod below
- 8-104. Foundation: half-rod-and-bundle-stacked
 Stitches: simple, noninterlocked, simple /
 penetrates bundle below
- 8-105. Foundation: half-rod-and-bundle-stacked; bundle in vertical-interval
 Stitches: simple, noninterlocked, simple /
 penetrates bundle below
- 8-106. Foundation: half-rod-and-bundle-inverted-stacked
 Stitches: simple, noninterlocked, simple /
 penetrates bundle below
- 8-107. Foundation: half-rod-and-bundle-stacked
 Stitches: simple, interlocked, simple /
 penetrates bundle below
- 8-108. Foundation: half-rod-and-bundle-inverted-stacked
 Stitches: simple, noninterlocked, simple /
 penetrates bundle below
- 8-109. Foundation: half-rod-and-bundle-inverted-stacked
 Stitches: simple, interlocked, simple /
 penetrates bundle below
- 8-110. Foundation: one-rod-and-bundle-stacked
 Stitches: simple, noninterlocked, simple /
 penetrates bundle below
- 8-111. Foundation: one-rod-and-bundle-stacked; bundle in vertical-interval
 Stitches: simple, noninterlocked, simple /
 penetrates bundle below
- 8-112. Foundation: one-rod-and-bundle-stacked
 Stitches: simple, noninterlocked, simple /
 penetrates bundle below

- *B-113. Foundation: one-rod-and-bundle-stacked
Stitch: simple, noninterlocked, slant ?,
penetrates bundle below
- *B-114. Foundation: one-rod-and-bundle-stacked
Stitch: simple, split, slant /,
penetrates bundle below
- *B-114.1. Foundation: one-rod-and-bundle-stacked
Stitch: simple, split, slant \,
penetrates bundle below
- *B-115. Foundation: one-rod-and-bundle-stacked; bundle is vertical-lateral
Stitch: simple, split, slant /,
penetrates bundle below
- B-116. Foundation: one-rod-and-bundle-stacked
Stitch: simple, interlocked, slant /,
penetrates bundle below
- *B-117. Foundation: one-slat-and-bundle-stacked
Stitch: simple, split, slant /,
penetrates bundle below
- *B-117.1. Foundation: two-half-rod-stacked
Stitch: simple, interlocked, slant /,
penetrates top half-rod below
- *B-118. Foundation: two-rod-stacked
Stitch: simple, noninterlocked, slant /,
encircles top rod below
- *B-118.1. Foundation: two-rod-stacked
Stitch: simple, noninterlocked, slant /,
encircles or penetrates top rod below
- *B-118.2. Foundation: two-rod-stacked
Stitch: simple, noninterlocked, slant \,
encircles or penetrates top rod below
- B-118.3. Foundation: two-rod-stacked
Stitch: multiple-stitch-and-wrap, noninterlocked, slant /,
penetrates top rod below
- B-119. Foundation: two-rod-stacked
Stitch: simple, split, slant /,
encircles top rod below
- *B-119.1. Foundation: two-rod-stacked
Stitch: simple, split, slant /,
encircles or penetrates top rod below

B-113

Foundations of the ...
...
...

B-114

Foundations of the ...
...
...

B-115.1

Foundations of the ...
...
...

B-116

Foundations of the ...
...
...

B-117

Foundations of the ...
...
...

B-118

Foundations of the ...
...
...

B-119.1

Foundations of the ...
...
...

B-120

Foundations of the ...
...
...

B-121.1

Foundations of the ...
...
...

B-122

Foundations of the ...
...
...

B-123.1

Foundations of the ...
...
...

B-124

Foundations of the ...
...
...

B-125.1

Foundations of the ...
...
...

- *B-120. Foundation: two-rod-stacked
Stitch: simple, split, slant \,
encircles or penetrates top rod below
- B-121. Foundation: two-rod-stacked
Stitch: simple, split, slant /,
penetrates top rod below
- *B-122. Foundation: two-rod-stacked
Stitch: simple, interlocked, slant /,
encircles top rod below
- *B-122.1. Foundation: two-rod-stacked
Stitch: no data
- *B-123. Foundation: one-rod-and-slat-stacked
Stitch: simple, split, slant /,
encircles slat below
- *B-124. Foundation: one-rod-and-half-rod-and-bundle-stacked
Stitch: simple, noninterlocked, slant /,
penetrates bundle below
- *B-125. Foundation: one-rod-and-half-rod-and-bundle-stacked; bundle is
vertical-lateral
Stitch: simple, noninterlocked, slant /,
penetrates bundle below
- *B-126. Foundation: one-rod-and-two-bundle-stacked
Stitch: simple, noninterlocked, slant \,
penetrates bundle below
- B-127. Foundation: two-rod-and-bundle-stacked
Stitch: simple, noninterlocked, slant /,
penetrates bundle below
- *B-128. Foundation: two-rod-and-bundle-stacked; bundle is vertical-lateral
Stitch: simple, noninterlocked, slant /,
penetrates bundle below
- *B-129. Foundation: two-rod-and-bundle-stacked
Stitch: simple, split, slant /,
penetrates bundle below
- B-130. Foundation: three-rod-stacked
Stitch: simple, noninterlocked, slant /,
penetrates top rod below
- B-131. Foundation: three-rod-stacked
Stitch: simple, split, slant /,
encircles top rod below

RECORDS OF THE

8-120.

Foundation: Two-story structure
Selling single, 10 ft. x 10 ft.
Construction of concrete and steel

8-121.

Foundation: Two-story structure
Selling single, 10 ft. x 10 ft.
Construction of concrete and steel

8-122.

Foundation: Two-story structure
Selling single, 10 ft. x 10 ft.
Construction of concrete and steel

8-123.1.

Foundation: Two-story structure
Selling single, 10 ft. x 10 ft.
Construction of concrete and steel

8-123.

Foundation: Two-story structure
Selling single, 10 ft. x 10 ft.
Construction of concrete and steel

8-124.

Foundation: Two-story structure
Selling single, 10 ft. x 10 ft.
Construction of concrete and steel

8-125.

Foundation: Two-story structure
Selling single, 10 ft. x 10 ft.
Construction of concrete and steel

8-126.

Foundation: Two-story structure
Selling single, 10 ft. x 10 ft.
Construction of concrete and steel

8-127.

Foundation: Two-story structure
Selling single, 10 ft. x 10 ft.
Construction of concrete and steel

8-128.

Foundation: Two-story structure
Selling single, 10 ft. x 10 ft.
Construction of concrete and steel

8-129.

Foundation: Two-story structure
Selling single, 10 ft. x 10 ft.
Construction of concrete and steel

8-130.

Foundation: Two-story structure
Selling single, 10 ft. x 10 ft.
Construction of concrete and steel

8-131.

Foundation: Two-story structure
Selling single, 10 ft. x 10 ft.
Construction of concrete and steel

RECORDS OF THE
CORPORATION
BOND

- B-133. Foundation: three-rod-stacked
Stitch: simple, split, slant /,
penetrates top rod below
- *B-134. Foundation: three-rod-and-bundle-stacked
Stitch: simple, split, slant /,
penetrates bundle below
- *B-135. Foundation: two-rows of three-slat-stacked
Stitch: simple, split, slant /,
encircles top slats below
- *B-136. Foundation: one-rod-and-bundle-stacked alternating with two-rod-and-bundle-stacked
Stitch: simple, noninterlocked, slant /,
penetrates bundle below
- B-137. Foundation: two-rod (no data)
Stitch: simple, noninterlocked, split, or interlocked ?, slant ?,
encircles or penetrates foundation below
- *B-138. Foundation: two-rod (no data)
Stitch: simple, interlocked, slant ?,
encircles or penetrates foundation below ?
- B-139. Foundation: one-rod-and-bundle (no data)
Stitch: no data
- *B-140. Foundation: three-rod (no data)
Stitch: no data

c. Rim

- C-1. Self: rim coil stitched in same manner as the rest of the basket
- C-1.1. Self
Termination: false braid, back-stitch crossing one forward-stitch
penetrating top element of work (rim) coil
- C-2. Self
Termination: false braid, back-stitch crossing two forward stitches
and penetrating foundation of coil below
- C-2.1. Self
Termination: false braid, back-stitch crossing two forward-stitches
and going around standing element between work coil and the one
below

B-133.

Foundation: three-rod-attached
Stitch: simple, split, slight
penetrates top rod below

*B-134.

Foundation: three-rod-and-bundle-attached
Stitch: simple, split, slight
penetrates bundle below

*B-135.

Foundation: two-rows of three-rod-attached
Stitch: simple, split, slight
penetrates top split below

*B-136.

Foundation: one-rod-and-bundle-attached alternating with two-rod-
and-bundle-attached
Stitch: simple, noninterlocked, slight
penetrates bundle below

B-137.

Foundation: two-rod (no data)
Stitch: simple, noninterlocked, split, or interlocked?, slight?
anchors or penetrates foundation below

*B-138.

Foundation: two-rod (no data)
Stitch: simple, interlocked, slight?
anchors or penetrates foundation below?

B-139.

Foundation: one-rod-and-bundle (no data)
Stitch: no data

*B-140.

Foundation: three-rod (no data)
Stitch: no data

C. 131

C-1.

Self: rim coil attached in same manner as the rest of the basket

C-1.1.

Self
Foundation: false braid, back-stitch crossing one forward-stitch
penetrating top element of work (rim) coil

C-2.

Self
Foundation: false braid, back-stitch crossing two forward stitches
and penetrating foundation of coil below

C-2.1.

Self
Foundation: false braid, back-stitch crossing two forward-stitches
and going around standing element between work coil and the rim
below

- C-2.2. Self
Termination: false braid, back-stitch crossing two forward-stitches and penetrating top element of work coil
- C-3. Self
Termination: false braid, back-stitch crossing three forward-stitches and going around standing element between work coil and the one below
- C-4. Self
Termination: false braid (no data)
- *C-5. Self
Termination: diagonal stitch woven over the self stitched rim
- C-6. Self
Termination: (no data)
- C-7. False braid: back-stitch crossing two forward-stitches and penetrating coil below
- C-8. False braid: back-stitch crossing two forward-stitches and penetrating top element of rim coil
- C-9. False braid: back-stitch crossing three forward-stitches and going around standing element between work coil and one below
- C-9.1. False braid: back-stitch crossing three forward-stitches and penetrating top element of rim coil
- *C-10. False braid: back-stitch crossing four forward-stitches and encircling top element of rim coil
- C-12. False braid: (no data)
- *C-13. Diagonal: diagonal stitch woven over the self stitched rim, penetrating the work coil
- *C-14. Diagonal: same as C-13, except two sewing splints are carried along
- *C-15. Loop braid: sewing element at rim played out and bent in a U shape on one side and above the rim, with rim coiled in a self-stitch style; stitch end then taken under and around the coil and through the inverse U

d. Shape

- D-1. Plaque: flat or slightly concave viewed from side; circular viewed from top

- C-2.2. Self
Termination: false braid, back-stitch crossing two forward-stitches
and penetrating top element of work coil
- C-3. Self
Termination: false braid, back-stitch crossing three forward-
stitches and going around standing element between work coil
and the one below
- C-4. Self
Termination: false braid (no data)
- *C-5. Self
Termination: diagonal stitch woven over the self attached rim
- C-6. Self
Termination: (no data)
- C-7. False braid: back-stitch crossing two forward-stitches and pene-
trating coil below
- C-8. False braid: back-stitch crossing two forward-stitches and pene-
trating top element of rim coil
- C-9. False braid: back-stitch crossing three forward-stitches and
going around standing element between work coil and one below
- C-9.1. False braid: back-stitch crossing three forward-stitches and
penetrating top element of rim coil
- *C-10. False braid: back-stitch crossing four forward-stitches and
encircling top element of rim coil
- C-12. False braid: (no data)
- *C-13. Diagonal: diagonal stitch woven over the self attached rim, pene-
trating the work coil
- *C-14. Diagonal: same as C-13, except two sewing splices are carried
along
- *C-15. Loop braid: sewing element at rim played out and beaten a V shape
on one side and above the rim, with the coil in a self-stitch
style: stitch and then taken under and around the coil and
through the inverse V
- D-1. Blades: flat or slightly concave viewed from side; circular viewed
from top

- D-2. Circular tray: flat base, smaller diameter than mouth; base may curve up slightly at sides
- D-3. Oval tray: similar to D-2, except oval
- D-4. Bowl: concave base ranges from pointed bottom to broad rounded or flattened base; wall is a continuation of up-curving base; mouth greatest diameter
- D-5. Cup: similar to mugs without handles
- D-6. Truncate-cone: flat base, wide mouth, wall rising at an angle straight to the mouth
- *D-7. Composite form: lower half similar to truncate-cone or bowl; upper half similar to shallow tray; upper half flares outward
- D-8. Cylindrical: flat base with same diameter as the mouth
- D-8.1. Elliptical tray: flat base with slightly outward slanting walls
- D-9. Wide base globular form: base with greater diameter than mouth; base may be flat or slightly rounded; mouth set flush with incurving walls; greatest diameter approximately half-way between base and mouth
- *D-10. Small base globular form: base is small and flat; walls rise at an angle then curve in to the mouth; greatest diameter at curvature of wall
- D-11. Flat bottom globular jar: similar to D-9, but with a narrower base and a rim neck
- D-11.1. Round bottom globular jar: similar to D-11, but with a round upward sloping bottom
- D-12. Jar: similar to D-10, but has a rim neck
- D-13. Conical burden basket: V-shaped from all sides
- D-14. Flat bottom, wedge-shaped burden basket: walls rise at a steep angle, but towards the top flare outward; oval shape
- D-16. Dented bottom, wedge-shaped burden basket: the base has a slight arch; walls and form similar to D-14
- D-17. Bifurcated burden basket: V-shaped sideview, but in front an extreme basal arch is apparant; front and back sides tend to be pressed inward
- D-18. Water-carrying basket: small round-pointed base: steep slanting sides which flare out near the top, then curve in to the small mouth
- D-19. Rectangular: flat base; sides nearly perpendicular

2. Plaited Baskets

- *E-1. Interval: over-one-under-one
Rim: strands from wall bent down at angle to the right on outside of basket and plaited over-one-under-one
Shape: square tray
Decoration: none
- E-2. Interval: over-one-under-one
Rim: strands at rim bent down to right and secured with a course of twining
Shape: cone
Decoration: none
- *E-3. Interval: over-one-under-one
Rim: "At the rim the standing leaves are bent out and down, 1 leaf being secured under the first horizontal element... these are bound...by 2 cords...A hoop of wood [is attached] to the selvage by a third cord..."⁴
Shape: deep bucket-like container, tending to be circular when viewed from the top
Decoration: none
- *E-4. Interval: over-one-under-one
Rim: no data
Shape: cylindrical
Decoration: no data
- *E-5. Interval: over-one-under-one
Rim: no data
Shape: no data
Decoration: no data
- *E-6. Interval: over-one-under-one
Rim: weaving strands bent over a wooden rod
Shape: rectangular tray woven into shape
Decoration: none
- *E-7. Interval: over-two-under-two
Rim: self, i.e., strands bent down and tucked under several rows of weaving
Shape: square tray
Decoration: none
- E-8. Interval: over-two-under-two
Rim: self
Shape: bowl
Decoration: none

⁴ Cosgrove, Caves of the Upper Gila, 1947, 110.

- Interval: over the whole range of the spectrum

Kind: spectrum from 100 to 1000 cm⁻¹

of: spectrum and related over the whole range

Shape: regular

Decorations: none
- Interval: over the whole range of the spectrum

Kind: spectrum from 100 to 1000 cm⁻¹

of: spectrum and related over the whole range

Shape: regular

Decorations: none
- Interval: over the whole range of the spectrum

Kind: spectrum from 100 to 1000 cm⁻¹

of: spectrum and related over the whole range

Shape: regular

Decorations: none
- Interval: over the whole range of the spectrum

Kind: spectrum from 100 to 1000 cm⁻¹

of: spectrum and related over the whole range

Shape: regular

Decorations: none
- Interval: over the whole range of the spectrum

Kind: spectrum from 100 to 1000 cm⁻¹

of: spectrum and related over the whole range

Shape: regular

Decorations: none
- Interval: over the whole range of the spectrum

Kind: spectrum from 100 to 1000 cm⁻¹

of: spectrum and related over the whole range

Shape: regular

Decorations: none
- Interval: over the whole range of the spectrum

Kind: spectrum from 100 to 1000 cm⁻¹

of: spectrum and related over the whole range

Shape: regular

Decorations: none
- Interval: over the whole range of the spectrum

Kind: spectrum from 100 to 1000 cm⁻¹

of: spectrum and related over the whole range

Shape: regular

Decorations: none

- *E-10. Interval: over-two-under-two
Rim: self
Shape: globular
Decoration: none

- E-11. Interval: over-two-under-two, woven from top to bottom
Rim: self
Shape: globular, generally with a false bottom of leaves
Decoration: none

- E-12. Interval: over-two-under-two
Rim: self
Shape: no data
Decoration: no data

- E-13. Interval: over-two-under-two
Rim: wooden hoop with weaving strands bent out-over-and-down and fastened by a row of twining
Shape: tray
Decoration: none

- *E-14. Interval: over-two-under-two
Rim: wooden hoop with weaving strands bent out-over-and-down and fastened by a row of twining
Shape: bowl
Decoration: plain or structurally woven concentric diamonds

- E-15. Interval: over-two-under-two
Rim: wooden hoop with weaving strands bent out-over-and-down and fastened by a row of twining
Shape: globular
Decoration: none

- E-16. Interval: over-two-under-two
Rim: wooden hoop with weaving strands bent out-over-and-down and fastened by a row of twining
Shape: not given, but probably a bowl form
Decoration: plain or structurally woven concentric diamonds

- *E-17. Interval: over-two-under-two
Rim: strands wrapped into a roll and tied to a wooden hoop
Shape: no data
Decoration: none

- E-18. Interval: over-two-under-two
Rim: wooden hoop with weaving strands bent out-over-and-down and fastened by a row of twining; plaited ornamental band encircles outside upper part of basket
Shape: bowl
Decoration: none

- E-10. Interval: over-two-under-two
 Rim: soft
 Shape: globular
 Decoration: none
- E-11. Interval: over-two-under-two, woven rim top as before
 Rim: soft
 Shape: globular, generally with a faint bottom of leaves
 Decoration: none
- E-12. Interval: over-two-under-two
 Rim: soft
 Shape: no data
 Decoration: no data
- E-13. Interval: over-two-under-two
 Rim: wooden hoop with weaving strands bent out-over-and-down and
 fastened by a row of twining
 Shape: tray
 Decoration: none
- E-14. Interval: over-two-under-two
 Rim: wooden hoop with weaving strands bent out-over-and-down and
 fastened by a row of twining
 Shape: bowl
 Decoration: plain or alternatively woven concentric diamonds
- E-15. Interval: over-two-under-two
 Rim: wooden hoop with weaving strands bent out-over-and-down and
 fastened by a row of twining
 Shape: globular
 Decoration: none
- E-16. Interval: over-two-under-two
 Rim: wooden hoop with weaving strands bent out-over-and-down and
 fastened by a row of twining
 Shape: not given, but probably a bowl form
 Decoration: plain or alternatively woven concentric diamonds
- E-17. Interval: over-two-under-two
 Rim: strands wrapped into a roll and then to a wooden hoop
 Shape: no data
 Decoration: none
- E-18. Interval: over-two-under-two
 Rim: wooden hoop with weaving strands bent out-over-and-down and
 fastened by a row of twining, placed concentric diamond
 outside upper part of basket
 Shape: bowl
 Decoration: none

- E-19. Interval: over-two-under-two
Rim: wooden hoop with tapered weaving strands bent out-over-and-down and fastened by a row of twining
Shape: large tray
Decoration: none
- E-20. Interval: over-two-under-two
Rim: wooden hoop with weaving strands bent out-over-and-down and fastened by a row of twining
Shape: cylindrical with slightly inward sloping walls
Decoration: structural bands
- E-21. Interval: over-two-under-two, woven from top to bottom
Shape: cylindrical with false bottom
Decoration: none
- *E-22. Interval: over-two-under-two
Rim: no data
Shape: no data
Decoration: no data
- E-23. Interval: over-three-under-three
Rim: self
Shape: square tray
Decoration: structurallywoven concentric diamonds
- *E-24. Interval: over-three-under-three
Rim: strands from wall bent down at an angle to the right on the outside and plaited back a short distance into the wall
Shape: rectangular trunk-like with cover
Decoration: horizontal bands
- *E-24.1. Interval: over-three-under-three
Rim: self
Shape: shallow tray
Decoration: horizontal bands
- *E-25. Interval: over-three-under-three
Rim: same as E-24
Shape: cylindrical with square base
Decoration: structurally woven parallel bands which encircle the wall or run vertical to the wall; structurally woven graduated squares or vertical crosses on the base
- *E-26. Interval: over-three-under-three
Rim: self
Shape: globular bowl
Decoration: none
- E-28. Interval: over-three-under-three
Rim: wooden hoop with weaving strands bent out-over-and-down and fastened by a row of twining
Shape: square tray

E-19. Interval: over-two-under-two
This wooden hoop with tapered strands bent out-over-and-down and fastened by a row of twining
Shape: large tray
Decorations: none

E-20. Interval: over-two-under-two
This wooden hoop with tapered strands bent out-over-and-down and fastened by a row of twining
Shape: cylindrical with slightly inward sloping walls
Decorations: circumferential bands

E-21. Interval: over-two-under-two, woven from top to bottom
Shape: cylindrical with taper below
Decorations: none

E-22. Interval: over-two-under-two
This is data
Shape: no data
Decorations: no data

E-23. Interval: over-three-under-three
This is data
Shape: square tray
Decorations: circumferentially woven concentric diamonds

E-24. Interval: over-three-under-three
This strands from wall bent down at an angle to the right on the outside and pitched back a short distance into the wall
Shape: rectangular, turned like with cover
Decorations: horizontal bands

E-24.1. Interval: over-three-under-three
This is data
Shape: shallow tray
Decorations: horizontal bands

E-25. Interval: over-three-under-three
This is data
Shape: cylindrical with square base
Decorations: circumferentially woven parallel bands which encircle the wall or run vertical to the wall; circumferentially woven graduated squares or vertical crosses on the base

E-26. Interval: over-three-under-three
This is data
Shape: circular bowl
Decorations: none

E-28. Interval: over-three-under-three
This wooden hoop with tapered strands bent out-over-and-down and fastened by a row of twining
Shape: square tray

- E-29. Interval: over-three-under-three
Rim: wooden hoop with weaving strands bent out-over-and-down and fastened by a row of twining
Shape: bowl
Decoration: plain, concentric diamonds, or meanders structurally woven.
- E-30. Interval: over-three-under-three
Rim: wooden hoop with weaving strands bent out-over-and-down and fastened by a row of twining
Shape: no data
Decoration: structurally woven concentric diamonds or plain twill weave
- *E-30.1. Interval: over-three-under-three
Rim: wooden hoop with weaving strands bent out-over-and-down; plaited ornamental band encloses outside upper part of basket
Shape: square tray
Decoration: none
- E-31. Interval: over-three-under-three
Rim: wooden hoop with weaving strands bent out-over-and-down; plaited ornamental band encircles outside upper part of basket
Shape: circular or oval tray
Decoration: none
- E-32. Interval: over-three-under-three
Rim: wooden hoop with weaving strands bent out-over-and-down; plaited ornamental band encircles outside upper part of basket
Shape: bowl
Decoration: structurally woven concentric diamonds or meanders
- *E-33. Interval: over-three-under-three
Rim: wooden hoop with weaving strands bent out-over-and-down; plaited ornamental band encircles outside upper part of basket
Shape: jar, possibly woven from the bottom upward into shape
Decoration: none
- E-35. Interval: over-three-under-three
Rim: wooden hoop with weaving strands bent out-over-and-down; plaited ornamental band encircles outside upper part of basket
Shape: no data
Decoration: no data
- *E-36. Interval: over-three-under-three
Rim: no data
Shape: bowl
Decoration: structurally woven concentric bands
- E-37. Interval: over-three-under-three
Rim: no data
Shape: no data
Decoration: no data

E-29. Interval: over-three-under-three
This wooden hoop with weaving strands is
fastened by a row of lashing
Shape: bowl
Decorations: plain, somewhat irregular, no
woven.

E-30. Interval: over-three-under-three
This wooden hoop with weaving strands is
fastened by a row of lashing
Shape: no data
Decorations: slightly irregular, no woven.

E-30.1. Interval: over-three-under-three
This wooden hoop with weaving strands is
ornamental bands woven on the surface
Shape: square tray
Decorations: none

E-31. Interval: over-three-under-three
This wooden hoop with weaving strands is
ornamental bands woven on the surface
Shape: circular as oval tray
Decorations: none

E-32. Interval: over-three-under-three
This wooden hoop with weaving strands is
plaited ornamental bands woven on the surface
Shape: bowl
Decorations: structurally woven, no woven.

E-33. Interval: over-three-under-three
This wooden hoop with weaving strands is
plaited ornamental bands woven on the surface
Shape: jar, possibly woven to a box bottom toward the top
Decorations: none

E-34. Interval: over-three-under-three
This wooden hoop with weaving strands is
plaited ornamental bands woven on the surface
Shape: no data
Decorations: no data

E-35. Interval: over-three-under-three
This wooden hoop with weaving strands is
Shape: bowl
Decorations: structurally woven, no woven.

E-36. Interval: over-three-under-three
This wooden hoop with weaving strands is
Shape: no data
Decorations: no data

- *E-37.1. Interval: over-three-under-two
 Rim: self ?
 Shape: rectangular trunk-like
 Decoration: horizontal bands
- E-38. Interval: over-three-under-two
 Rim: wooden hoop with weaving strands bent out-over-and-down and fastened by a row of twining
 Shape: no data
 Decoration: no data
- *E-38.1. Interval: over-three-under-two
 Rim: wooden hoop ?
 Shape: deep bowl with flat bottom; sides bulge outward slightly to approximate a globular form
 Decoration: plain or intricate patterns
- E-39. Interval: twilled (no data)
 Rim: no data
 Shape: no data
 Decoration: no data

3. Wickered Baskets

- F-1. Shape: plaque: varying from a slight hump in center and more or less flat walls to a pronounced hump and steep sided walls
 Center: (a) six or more stems wrapped diagonally to form a square with a similar set laid across at right angles, the protruding stems of each set constituting the radial warps of the wall; (b) six or more stems wickered in pairs, the whole forming a square upon which another unit is set
 Wall: three-unit wall type, each unit of wicker-work set off from the preceding by the addition of new warps; each warp composed of two or more stems
 Rim: all warp stems but one cut off; the remaining stem bent to the left, as viewed from inside, and twisted across two other similar warp stems producing a three-rod-triangular foundation for a yucca leaf wrapping
 Decoration: stained weft strands employed to produce geometric patterns in horizontal bands or Katchina masks; occasionally paint applied for decorative purposes after basket is woven
- F-2. Shape: plaque similar to F-1
 No other data, but investigators report the type similar to the Hopi kind (F-1); basket from Chevelon Ruin described as having a three-unit wall with three stems for each warp and geometric band decoration

45-38.1

Intermittent rain - 10-15-45
Ship: no data
Description: no data

45-38.2

Intermittent rain - 10-15-45
Ship: no data
Description: no data

45-38.3

Intermittent rain - 10-15-45
Ship: no data
Description: no data

45-38.4

Intermittent rain - 10-15-45
Ship: no data
Description: no data

45-38.5

Intermittent rain - 10-15-45
Ship: no data
Description: no data

45-38.6

Intermittent rain - 10-15-45
Ship: no data
Description: no data

- *F-3. Shape: plaque similar to F-1
 Center: four units of three stems each plaited into a square
 Wall: three unit wall type using two stems for each warp
 Rim: no data
 Decoration: none
- F-4. Shape: shallow bowl; one specimen with a slight hump in the center
 Center: a set of stems wickered in pairs with another set laid at right angles across the first; weft wickered in and out at the margin of the two sets to hold them together and to start the wall weave
 Wall: three unit wall with warps of two or more stems
 Rim: same as F-1, sometimes as self rim
 Decoration: peeled and non-peeled stems used to produce banded geometric patterns; plain
- F-5. Shape: bowl similar to F-4
 Center: no data
 Wall: wickered
 Rim: two stems from each warp extended past wall zone, then bent down to an angle and plaited back to the wall in an over-one-under-one weave
 Decoration: no data
- F-7. Shape: truncate-cone; bottom appearing flat, but having a slight hump in the center caused by a type of construction similar to F-1
 Center: similar to F-1
 Wall: similar to F-1
 Rim: similar to F-1
 Decoration: banded geometric patterns produced by dyed weft strands
- F-8. Shape: flat bottom with steeply rising sides which flare outward a quarter of the distance to the rim
 Center: two or more layers of several stems, each crossed with stems protruding to form the radial warps of the wall; center not wrapped
 Wall: wickered wall rising for a short distance, with warps then extending outward to form an ornamental rim
 Rim: rim forming one-half to three-quarters of the basket side; each warp unit proceeding past the wicker wefts to rim terminus, bending down to the right and plaited in an over-one-under-one weave among the other rising warp units; on outside at juncture between wicker and plaited sections, the downward moving warp unit incorporated with the other downward moving units in a three strand braid which encircles the basket
 Decoration: generally plain, but some peeled and nonpeeled weft stems used to produce simple geometric banded designs

- 7-3. Shape: plaque similar to 7-1.
Center: four white of three stems each joined into a square
Wall: three white wall types using two stems for each way
Rim: no data
Decorations: none
- 7-4. Shape: shallow bowl; one specimen with a slight hump at the center
Center: a set of stems with a pair with another set laid at
right angles to the first; wall worked in and out at the
margin of the two sets to hold them together and to start the
wall weave
Wall: three white wall with weave of two or more stems
Rim: same as 7-1, sometimes as wall rim
Decorations: beaded and non-beaded stems used to produce beaded
geometric patterns; plain
- 7-5. Shape: bowl similar to 7-4
Center: no data
Wall: worked
Rim: two stems from each wrap extended past wall rim, then bent
down to an angle and placed back to the wall in an over-one-
under-one weave
Decorations: no data
- 7-7. Shape: truncate-cone; bottom appearing flat, but having a slight
hump in the center caused by a type of construction similar to
7-1
Center: similar to 7-1
Wall: similar to 7-1
Rim: similar to 7-1
Decorations: beaded geometric patterns produced by dyed wall stems
- 7-8. Shape: flat bottom with steeply rising sides which flare outward a
quarter of the distance to the rim
Center: two or more layers of beaded stems, each beaded with stems
protruding to form the radial rings of the wall; center not
wrapped
Wall: worked wall rising for a short distance, with wraps then
extending outward to form an ornamented rim
Rim: rim forming one-half to three-quarters of the basket side;
each wrap with protruding part the closer walls to the rim
beading down to the rim and placed in an over-one-under-one
weave among the other rising wrap which on outside at junction
between wider and beaded sections, the downward moving wrap
not incorporated with the other toward away from rim
three strand braid which worked the basket
Decorations: generally plain, but some beaded and ringed with
stems used to produce simple geometric beaded designs

- F-9. Shape: globular
No other data
- F-10. Shape: bottle
No other data
- F-11. Shape: conical burden basket; pointed bottom with walls rising steeply for half their length then proceeding perpendicular to the rim; form square or rectangular as viewed from the top
Center: similar to F-1 or F-4; below wickered center and without wrappings, two heavy rods crossed to form an X with extended ends incorporated in the wall weave at the four corners of the basket
Wall: new warps added when needed; each warp generally containing two stems
Rim: self rim held in place by overhand stitches, each incorporating three or four weft rows
Decoration: plain or peeled and non-peeled weft stems forming banded geometric design
- F-11.1. Shape: rectangular burden basket with rounded or flattened bottom steeply rising sides; near each side a large U-shaped rod separating front and back of the basket; these rods incorporated into the wickered wall but their ends extending above the mouth
Center: wickered like wall of basket
Wall: two or three rod warp units
Rim: similar to F-11
Decoration: none
- F-12. Shape: burden basket flat on the back
No other data, but probably similar to F-11.1.
- F-13. Shape: conical burden basket, pointed bottom and V-shaped
Center: several rows of twining from which warps radiate as part of wall; hole at apex
Wall: two weft strands either layered or progressing side by side as a unit; texture changing from coarse to fine toward rim
Rim: similar to F-8, but with two warp stems worked as a unit
Decoration: peeled and nonpeeled stems with weft twisted to produce contrasting colors
- F-15. No data other than mention of wicker basket

7-15. No data other than mentioned in above.

4. Twined Baskets

- G-1. Shape: similar to F-8
Center: two layers of three stems each or three layers of four stems each, laid one on top of the other; protruding stems forming the radial warps; no wrapping of the center
Wall: twined, each warp increasing from top to five or six stems
Rim: similar to F-8
Decoration: none
- G-2. Shape: truncate-cone with less flaring rim than G-1
Center: similar to G-1 but with two layers of four stems each; layers crossing at right angles
Wall: bottom wickered, sides twined
Rim: similar to F-8
Decoration: none
- *G-3. Shape: shallow bowl
Center: stems crossed in two or more layers to form radiating warps; center not wrapped
Wall: six rows of widely spaced twining over one or two rod warp units; warp units of two rods each continuing to rim, turn back at an angle and plaited over-one-under-one to twined wall
Rim: Upper part of wall composed of plaited section
Decoration: none

L. Tinned Biscuits

- 0-1. Shape: similar to 7-8
Center: two layers of three areas each on three layers of four
areas each, laid one on top of the other; protruding areas
forming the radial wings; no wrapping of the center
Wall: twisted, each with increasing from two to five or six areas
Rim: similar to 7-8
Decorations: none
- 0-2. Shape: somewhat-same with less flaring rim than 0-1
Center: similar to 0-1 but with two layers of four areas each;
layers arranged at right angles
Wall: bottom widened, sides twisted
Rim: similar to 7-8
Decorations: none
- 0-3. Shape: shallow bowl
Center: stems crossed in two or more layers to form radiating wings;
center not wrapped
Wall: six rows of widely spaced twisting over one or two rows
under; with ends of two rows each continuing to rim, then back
at an angle and placed over one another to twisted wall
Rim: upper part of wall composed of twisted sections
Decorations: none

B. REFERENCES TO LOCATIONS

<u>Number</u>	<u>Location</u>	<u>Reference</u>	<u>Descriptive type</u>
1.	Wahluke, Wash.	Weltfish, 1932b	B-36(?p.111) B-93(?p.111)
2.	Roaring Springs Cave, Ore.	Cressman, 1942	B-61(1p.51) B-89(2p.51) B-118.1(1p.51) G-3(1fig.86c)
3.	Catlow Cave, Ore.	Cressman, 1942	B-38(2p.51) B-63(2p.51) B-77(1p.46,51) B-89(2p.48,51) B-123(1p.51; stitch probably encircles slat in coil below)
4.	Cache Pe.8, Nev.	Baumhoff, 1958	B-89(47p.16,17) F-13(236p.15)
5.	Lovelock Cave, Nev.	Loud and Harrington, 1929; Weltfish, 1932b Weltfish, 1932b Loud and Harrington, 1929; Baumhoff and Heizer, 1958 Weltfish, 1932b; Baumhoff and Heizer, 1958 Loud and Harrington, 1929	B-34(28p.65; p.111) B-36(2p.65; p.111) B-38(tech. assoc. with B-34p.111) B-76(264p.65;p.50) B-78(15p.65;p.51) B-89(tech. assoc. with B-76p.110; p.50) B-93(severalp.110; p.51) B-99(tech. assoc. with B-76p.65) C-1 (154p.67) C-12(154p.67) D-2 (many p.66) D-4 (2p.67) D-11.1(1p.66) F-13(1115pp.60-64)

REPORT OF THE

Number	Location	Notes
1.	Wetland, near	
2.	Wetland, near	
3.	Wetland, near	
4.	Wetland, near	
5.	Wetland, near	

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<u>Number</u>	<u>Location</u>	<u>Reference</u>	<u>Descriptive type</u>
6.	Humbolt Cave, Nev.	Heizer and Krieger, 1956	B-35(12'p.52) B-58(tech. assoc. with B-35'p.52) B-76(136'pp.45 to 47) B-80(tech. assoc. with B-76'p.47) B-89(tech. assoc. with B-76'; occurs also on 12 fine stitched fragments, p.51)
		Heizer and Krieger, 1956; Baumhoff and Heizer, 1958	B-93(8'p.50 stitches may slant; for stitch slant / see second report plate 1d)
		Heizer and Krieger, 1956	B-96(tech. assoc. with B-76'p.45; plate 1a) B-97(tech. assoc. with B-76'p.45) B-99(tech. assoc. with B-76'p.45) B-100(tech. assoc. with B-93'p.50) B-103(tech. assoc. with B-76'fig.7e) B-135(tech. assoc. with B-76'fig.7e) C-1 (many'p.46) D-2 (136'p.45) D-4 (36'pp.50 to 51) F-13 (1566'pp.34-39)
7.	Winnemucca Lake	Roust, 1958	B-64(tech. assoc. with B-89'p.5) B-88(2'p.5) B-89(8'p.5) F-13(9'p.2)
8.	Pavlotso, Pyramid Lake, Nev.	Weltfish, 1930b	B-29.1(X'p.469) B-40 (X'p.469) B-85 (X'p.469) B-93 (X'p.469)
9.	Pavlotso, Stillwater, Nev.	Weltfish, 1930b	B-28.1(X'p.469) B-29.1(X'p.469) B-40 (X'p.469) B-40.1(X'p.469)

<u>Number</u>	<u>Location</u>	<u>Reference</u>	<u>Descriptive type</u>
10.	Paviotso, Walker River, Nev.	Weltfish, 1930b	B-86 (X'p.469)
11.	Maidu, Calif.	Weltfish, 1930b Kroeber, 1925	B-89.1(X'p.465) C-1 (X'p.414) D-1 (X'p.414) D-4 (X'p.414)
12.	Washo, Calif.	Weltfish, 1930b Barrett, 1917	B-35 (X'p.465) B-89.1(X'p.465) C-1 (X'p.19) C-13 (X'p.19) D-6 (X'plate VIII, 7) D-9 (X'plate IX, 3)
13.	Miwok, Calif.	Barrett and Gifford, 1933 Weltfish, 1930b; Barrett and Gifford, 1933 Barrett and Gifford, 1933	A-5 (probable'p.238) B-36 (X'p.465;p.239) B-38 (tech. assoc. with B-36, see second report p. 239) B-90 (X'p.465;p.239) B-91 (tech. assoc. with B-90, second report p.239) C-1 (X'p.239) C-13 (X'p.239) D-4 (X'Plate XLIX, 1) D-6 (X'Plate XI) D-9 (X'Plate XLV, 4)
14.	Yuki, Calif.	Kelly, 1930 Weltfish, 1930b Kelly, 1930	A-2 (X'p.424) B-57 (X'p.465) B-79 (X'p.425) B-83 (X'p.425) B-85 (X'p.425) B-112 (probable'p.425) B-126 (X'p.425) C-1 (X'p.425) C-5 (X'p.425) D-4 (X'Plate 125,b) D-6 (X'Plate 125,e) D-9 (X'Plate 124,b)

Number	Location	Reference	Descriptive type
10.	Havlicek, Walker River, Nev.	Weistman, 1930	B-35 (X'p. 185)
11.	Matto, Calif.	Weistman, 1930 Kroeger, 1932	B-35 (X'p. 185) C-2 (X'p. 185) D-1 (X'p. 185) D-2 (X'p. 185)
12.	Wamie, Calif.	Weistman, 1930 Bartlett, 1917	B-35 (X'p. 185) B-35 (X'p. 185) C-1 (X'p. 185) C-2 (X'p. 185) D-1 (X'p. 185) D-2 (X'p. 185)
13.	Wimok, Calif.	Bartlett and Gifford, 1933 Weistman, 1930 Bartlett and Gifford, 1933	A-2 (probable p. 185) B-35 (X'p. 185) B-35 (tech. record with B-35, see second report p. 185) B-35 (X'p. 185) B-35 (tech. record with B-35, second report p. 185) C-1 (X'p. 185) C-2 (X'p. 185) D-1 (X'p. 185) D-2 (X'p. 185) D-3 (X'p. 185)
14.	Yuki, Calif.	Kelly, 1930 Weistman, 1930 Kelly, 1930	A-1 (X'p. 185) B-35 (X'p. 185) B-35 (X'p. 185) B-35 (X'p. 185) B-35 (X'p. 185) B-35 (probable p. 185) B-35 (X'p. 185) C-1 (X'p. 185) C-2 (X'p. 185) D-1 (X'p. 185) D-2 (X'p. 185) D-3 (X'p. 185)

<u>Number</u>	<u>Location</u>	<u>Reference</u>	<u>Descriptive type</u>
15.	Pomo, Calif.	Barrett, 1908	A-3 (X'p.160)
			A-5 (X'p.159)
		Weltfish, 1932b	B-36 (X'p.115)
			B-93 (X'p.115)
		Barrett, 1908	B-110 (X'p.158, probable)
			C-1 (X'p.161)
			D-4 (X'Plate 19no.2)
			D-6 (X'Plate 19no.1)
			D-7 (X'Plate 18no.2)
			D-9 (X'Plate 19no.6)
16.	Danger Cave, Utah	Jennings, 1957	B-5 (6'p.245)
			B-45 (5'p.245)
			B-36 (4'p.245)
			B-60 (2'p.249)
			B-62 (7'p.248)
			B-84 (2'p.250)
			B-91 (28'p.250)
			B-110 (34'p.247)
			B-116 (1'p.247)
			C-1 (1'p.245)
			C-12 (3'p.245)
17.	Grantsville, Utah	Rudy, 1953	B-40.2 (1'p.155)
		Jennings, 1957	B-116 (1'p.248)
		Steward, 1936	D-2 (1'p.55)
18.	Stansbury, Utah	Jameson, 1958	A-1 (1'fig.22c)
			B-36 (1'fig.22c)
19.	Pine Park, Utah	Rudy, 1954	B-2 (1'p.21)
20.	Black Rock, Utah	Enger, 1942; Rudy, 1953	B-36 (3'p.90; p. 155)
21.	Uintah Basin, Utah	Steward, 1936; Jennings, 1957	B-104 (1'p.55; p. 247)
22.	Promontory Caves, Utah	Steward, 1937	B-5 (1'p.34)
			B-31 (1'p.35)
			B-36 (3'p.34,35)
			B-62 (tech. assoc. with B-36'p.34)
			B-110 (4'p.35)
			B-114 (1'p.35)
			B-118 (1'p.35)
			B-122 (1'p.34)

Number	Location	Reference	Notes
15.	1000, Calif.	Barnett, 1900	<p>1-1 (1900)</p> <p>1-2 (1900)</p> <p>1-3 (1900)</p> <p>1-4 (1900)</p> <p>1-5 (1900)</p> <p>1-6 (1900)</p> <p>1-7 (1900)</p> <p>1-8 (1900)</p> <p>1-9 (1900)</p>
16.	Banger Cave, Utah	Jennings, 1907	<p>1-1 (1907)</p> <p>1-2 (1907)</p> <p>1-3 (1907)</p> <p>1-4 (1907)</p> <p>1-5 (1907)</p> <p>1-6 (1907)</p> <p>1-7 (1907)</p> <p>1-8 (1907)</p> <p>1-9 (1907)</p>
17.	Grassville, Utah	<p>1907, 1907</p> <p>Jennings, 1907</p> <p>Stewart, 1907</p>	<p>1-1 (1907)</p> <p>1-2 (1907)</p> <p>1-3 (1907)</p>
18.	Stansbury, Utah	Jennings, 1907	<p>1-1 (1907)</p> <p>1-2 (1907)</p>
19.	Pine Park, Utah	1907, 1907	<p>1-1 (1907)</p>
20.	Black Rock, Utah	<p>1907, 1907</p> <p>1907, 1907</p>	<p>1-1 (1907)</p> <p>1-2 (1907)</p>
21.	Utah Basin, Utah	<p>Stewart, 1907</p> <p>Jennings, 1907</p>	<p>1-1 (1907)</p> <p>1-2 (1907)</p>
22.	Promontory Cave, Utah	Stewart, 1907	<p>1-1 (1907)</p> <p>1-2 (1907)</p> <p>1-3 (1907)</p> <p>1-4 (1907)</p> <p>1-5 (1907)</p> <p>1-6 (1907)</p> <p>1-7 (1907)</p> <p>1-8 (1907)</p> <p>1-9 (1907)</p>

<u>Number</u>	<u>Location</u>	<u>Reference</u>	<u>Descriptive type</u>
23.	Shoshoni, Utah	Weltfish, 1930a Weltfish, 1930b Morris and Burgh, 1941 Weltfish, 1930b Weltfish, 1930a	B-28.1(X'p.290) B-121 (X'p.470) B-130 (X'p.15) B-133 (X'p.470) D-2 (X'fig.47g)
24.	Old Woman, Utah	Taylor, 1957	B-52 (1'p.46) B-104 (2'p.47) D-2 (1'p.47)
25.	Fremont Drainage, Utah	Morss, 1931 Morris and Burgh, 1941 Jennings, 1957 Morss, 1931	A-1 (1'p.73) B-36 (4'p.7) B-104 (? 'p.11) B-110 (? 'p.247) B-116 (? 'p.248) D-2 (? 'p.73) D-5 (3'Plate 39a)
26.	Beef Basin, Utah	Rudy, 1955	A-1 (1'Plate 8c) B-8 (1'Plate 8c)
27.	La Sal Mountain, Utah	Hunt, 1953	B-104 (1'p.177) B-107 (1'p.177) B-138 (1'p.177)
28.	Uncompaghre Plateau, Colo.	Wormington, 1955	B-113 (? 'p.125)
28.1	Turner-Lock, Utah	Wormington, 1955	B-7.1 (1'p.67)
29.	Roth Cave, Colo.	Lister and Dick, 1952	B-104 (2'p.82)
30.	Luster Cave, Colo.	Lister and Dick, 1952	B-52 (1'p.79)
31.	Castle Park, Colo.	Burgh and Scoggin, 1948	B-5 (11'p.57) B-40.2(1'p.58) B-104 (8'p.57) B-117.1(1'p.58)
31.1	Blue Mountain, Colo.	Wormington, 1955	B-2 (1'p.142) B-31 (2'p.142) B-137 (4'p.142)

Number	Location	Reference	Descriptive Type
23.	Shoshone, Utah	Wheeler, 1930a Wheeler, 1930b Wheeler and Smith, 1931 Wheeler, 1930c Wheeler, 1930d	B-128 (1930a) B-129 (1930b) B-130 (1930c) B-131 (1930d) B-132 (1930e)
24.	Old Woman, Utah	Taylor, 1937	B-133 (1937) B-134 (1937) B-135 (1937)
25.	Fremont, Utah	Wheeler, 1931 Wheeler and Smith, 1931 Wheeler, 1931 Wheeler, 1931 Wheeler, 1931 Wheeler, 1931 Wheeler, 1931 Wheeler, 1931	B-136 (1931) B-137 (1931) B-138 (1931) B-139 (1931) B-140 (1931) B-141 (1931) B-142 (1931) B-143 (1931)
26.	Beef Bend, Utah	Wheeler, 1931	B-144 (1931) B-145 (1931)
27.	La Sal Mountain, Utah	Wheeler, 1931	B-146 (1931) B-147 (1931) B-148 (1931)
28.	Uncompaghe, Colorado	Wheeler, 1931	B-149 (1931)
28.1	Turner-Lock, Utah	Wheeler, 1931	B-150 (1931)
29.	Both Cave, Colorado	Wheeler and Smith, 1931	B-151 (1931)
30.	Leuter Cave, Colorado	Wheeler and Smith, 1931	B-152 (1931)
31.	Castle Park, Colorado	Wheeler and Smith, 1931	B-153 (1931) B-154 (1931) B-155 (1931) B-156 (1931)
31.1	Blue Mountain, Colorado	Wheeler, 1931	B-157 (1931) B-158 (1931) B-159 (1931)

<u>Number</u>	<u>Location</u>	<u>Reference</u>	<u>Descriptive type</u>
32.	Cheyenne, Wyo.	Weltfish, 1930a	B-28.1(tech. assoc. with B-35'pp. 288 to 290) B-29.1(tech. assoc. with B-35'pp. 288 to 290) B-35 (X'pp.288 to 290) B-35.1(tech. assoc. with B-35'pp. 288 to 290) B-118.1(tech. assoc. with B-119.1; pp. 288 to 290) B-118.2(tech. assoc. with B-119.1; pp. 288 to 290) B-119.1(X'pp. 288 to 290) B-120 (tech. assoc. with B-119.1; pp.288 to 290) D-6 (X'fig.47b)
33.	Arapaho, Colo.	Weltfish, 1930a	Same wall types as number 32'pp.288 to 290 D-6 (X'fig.49)
34.	Pawnee, Nebraska	Weltfish, 1930a	A-2 (X'p.282) A-6 (X'p.282) B-29 (X'p.283) B-37 (X'p.283) C-1 (X'p.284) C-16 (X'p.284) D-7 (X'fig.47a)
35.	Kiowa, Tex.	Weltfish, 1930a	Same wall types as number 32'pp.288 to 290
36.	Comanche, Tex.	Weltfish, 1930a	Same wall types as number 32'pp.288 to 290
37	Ozark Bluff Dwellers, Ark.	Weltfish, 1932b	A-4 (2'p.114) B-36 (1'p.114) B-122 (2'p.114; probably stitch encircles rod in coil below) D-2 (2'p.114) E-1 (1'Plate IC,b) E-37.1(1'Plate IV,d) E-38.1(1'Plate IV,f)
		Harrington, 1924	

<u>Number</u>	<u>Location</u>	<u>Reference</u>	<u>Descriptive type</u>
38.	Paiute Cave, Nev.	Harrington, 1930	B-90 (?p.118)
39.	Etna Cave, Nev.	Lister and Dick, 1952	B-52 (?p.247)
		Jennings, 1957	B-110 (?p.247)
40.	Mesa House, Nev.	Hayden, 1930	B-65 (66'pp.59,60)
			B-98 (tech. assoc. with B-65'pp. 59,60)
			B-101 (tech. assoc. with B-65'pp. 59,60)
41.	Southern Paiute, Nev., Ariz., Utah	Tschopik, Jr., 1940	B-66 (X'p.449; rope bundle)
		Morris and Burgh	B-84 (X'p.14)
		Weltfish, 1930b	B-93 (X'p.469)
		Ellis and Walpole, 1959	C-12 (X'p.194)
		Stewart, 1942	D-11.1 (X'p.271)
42.	Paragonah, Utah	Meighan, et.al., 1956	B-1 (7'p.106)
43.	Zion, Utah	Schroeder, 1955	A-1 (1'fig.24b)
			B-66 (2'fig.24b)
44.	DuPont, Utah	Nusbaum, 1922	A-1 (3'Plate XLV)
			A-2 (1'Plate XLIX,b)
			A-3 (1'Plate XLIX,a)
		Morris and Burgh, 1941	B-45 (2'p.17)
			B-52 (1'p.11)
			B-66 (25'p.12)
			B-69 (1'p.15)
		Nusbaum, 1922	C-1 (1'Plate XLVII)
			C-4 (3'Plate XLV)
			D-2 (3'Plate XLV)
			D-4 (1'Plate XLVI)
			D-5 (1'Plate XLVII)
		Morris and Burgh, 1941	D-6 (?fig.11)
45.	Kanab, Utah	Judd, 1928	A-1 (4'p.148)
			B-40.2 (2'p.148, Plate 56,d)
			B-139 (2'Plate 56,b,c)

Number	Location	Reference	Descriptive notes
38.	Palace Cave, Nev.	Hartington, 1938	B-30 (1'p.1A6)
39.	Bank Cave, Nev.	Latham and Clark, 1938	B-32 (1'p.2A7)
40.	House House, Nev.	Hartington, 1938	B-110 (1'p.4A7) B-55 (1'p.5A8, 5A9) B-91 (1'p.5A8, 5A9) B-101 (1'p.5A8, 5A9) B-66 (1'p.5A8, 5A9) B-67 (1'p.5A8, 5A9) B-68 (1'p.5A8, 5A9) B-69 (1'p.5A8, 5A9) B-70 (1'p.5A8, 5A9) B-71 (1'p.5A8, 5A9) B-72 (1'p.5A8, 5A9) B-73 (1'p.5A8, 5A9) B-74 (1'p.5A8, 5A9) B-75 (1'p.5A8, 5A9) B-76 (1'p.5A8, 5A9) B-77 (1'p.5A8, 5A9) B-78 (1'p.5A8, 5A9) B-79 (1'p.5A8, 5A9) B-80 (1'p.5A8, 5A9) B-81 (1'p.5A8, 5A9) B-82 (1'p.5A8, 5A9) B-83 (1'p.5A8, 5A9) B-84 (1'p.5A8, 5A9) B-85 (1'p.5A8, 5A9) B-86 (1'p.5A8, 5A9) B-87 (1'p.5A8, 5A9) B-88 (1'p.5A8, 5A9) B-89 (1'p.5A8, 5A9) B-90 (1'p.5A8, 5A9) B-91 (1'p.5A8, 5A9) B-92 (1'p.5A8, 5A9) B-93 (1'p.5A8, 5A9) B-94 (1'p.5A8, 5A9) B-95 (1'p.5A8, 5A9) B-96 (1'p.5A8, 5A9) B-97 (1'p.5A8, 5A9) B-98 (1'p.5A8, 5A9) B-99 (1'p.5A8, 5A9) B-100 (1'p.5A8, 5A9) B-101 (1'p.5A8, 5A9) B-102 (1'p.5A8, 5A9) B-103 (1'p.5A8, 5A9) B-104 (1'p.5A8, 5A9) B-105 (1'p.5A8, 5A9) B-106 (1'p.5A8, 5A9) B-107 (1'p.5A8, 5A9) B-108 (1'p.5A8, 5A9) B-109 (1'p.5A8, 5A9) B-110 (1'p.5A8, 5A9) B-111 (1'p.5A8, 5A9) B-112 (1'p.5A8, 5A9) B-113 (1'p.5A8, 5A9) B-114 (1'p.5A8, 5A9) B-115 (1'p.5A8, 5A9) B-116 (1'p.5A8, 5A9) B-117 (1'p.5A8, 5A9) B-118 (1'p.5A8, 5A9) B-119 (1'p.5A8, 5A9) B-120 (1'p.5A8, 5A9) B-121 (1'p.5A8, 5A9) B-122 (1'p.5A8, 5A9) B-123 (1'p.5A8, 5A9) B-124 (1'p.5A8, 5A9) B-125 (1'p.5A8, 5A9) B-126 (1'p.5A8, 5A9) B-127 (1'p.5A8, 5A9) B-128 (1'p.5A8, 5A9) B-129 (1'p.5A8, 5A9) B-130 (1'p.5A8, 5A9) B-131 (1'p.5A8, 5A9) B-132 (1'p.5A8, 5A9) B-133 (1'p.5A8, 5A9) B-134 (1'p.5A8, 5A9) B-135 (1'p.5A8, 5A9) B-136 (1'p.5A8, 5A9) B-137 (1'p.5A8, 5A9) B-138 (1'p.5A8, 5A9) B-139 (1'p.5A8, 5A9) B-140 (1'p.5A8, 5A9) B-141 (1'p.5A8, 5A9) B-142 (1'p.5A8, 5A9) B-143 (1'p.5A8, 5A9) B-144 (1'p.5A8, 5A9) B-145 (1'p.5A8, 5A9) B-146 (1'p.5A8, 5A9) B-147 (1'p.5A8, 5A9) B-148 (1'p.5A8, 5A9) B-149 (1'p.5A8, 5A9) B-150 (1'p.5A8, 5A9) B-151 (1'p.5A8, 5A9) B-152 (1'p.5A8, 5A9) B-153 (1'p.5A8, 5A9) B-154 (1'p.5A8, 5A9) B-155 (1'p.5A8, 5A9) B-156 (1'p.5A8, 5A9) B-157 (1'p.5A8, 5A9) B-158 (1'p.5A8, 5A9) B-159 (1'p.5A8, 5A9) B-160 (1'p.5A8, 5A9) B-161 (1'p.5A8, 5A9) B-162 (1'p.5A8, 5A9) B-163 (1'p.5A8, 5A9) B-164 (1'p.5A8, 5A9) B-165 (1'p.5A8, 5A9) B-166 (1'p.5A8, 5A9) B-167 (1'p.5A8, 5A9) B-168 (1'p.5A8, 5A9) B-169 (1'p.5A8, 5A9) B-170 (1'p.5A8, 5A9) B-171 (1'p.5A8, 5A9) B-172 (1'p.5A8, 5A9) B-173 (1'p.5A8, 5A9) B-174 (1'p.5A8, 5A9) B-175 (1'p.5A8, 5A9) B-176 (1'p.5A8, 5A9) B-177 (1'p.5A8, 5A9) B-178 (1'p.5A8, 5A9) B-179 (1'p.5A8, 5A9) B-180 (1'p.5A8, 5A9) B-181 (1'p.5A8, 5A9) B-182 (1'p.5A8, 5A9) B-183 (1'p.5A8, 5A9) B-184 (1'p.5A8, 5A9) B-185 (1'p.5A8, 5A9) B-186 (1'p.5A8, 5A9) B-187 (1'p.5A8, 5A9) B-188 (1'p.5A8, 5A9) B-189 (1'p.5A8, 5A9) B-190 (1'p.5A8, 5A9) B-191 (1'p.5A8, 5A9) B-192 (1'p.5A8, 5A9) B-193 (1'p.5A8, 5A9) B-194 (1'p.5A8, 5A9) B-195 (1'p.5A8, 5A9) B-196 (1'p.5A8, 5A9) B-197 (1'p.5A8, 5A9) B-198 (1'p.5A8, 5A9) B-199 (1'p.5A8, 5A9) B-200 (1'p.5A8, 5A9)

<u>Number</u>	<u>Location</u>	<u>Reference</u>	<u>Descriptive type</u>
46.	Lost Canyon, Utah	Morris and Burgh, 1941 Weltfish, 1932a	B-36 (1'p.7) B-41 (tech. assoc. with B-66'p.20) B-66 (4'p.20) D-2 (2'p.20) D-4 (2'p.20) D-8 (1'p.20)
47.	Redd Canyon, Utah	Morris and Burgh, 1941 Weltfish, 1932a	B-66 (1'p.12) E-32 (1'p.19; probably bowl shape)
48.	Battle Canyon, Utah	Weltfish, 1932a Morris and Burgh, 1941 Weltfish, 1932a	B-37 (1'p.15) B-66 (6'p.14) B-84 (1'p.14) B-104 (2'p.14) B-130 (1'p.15) D-2 (?p.15) D-4 (?p.15) D-13 (1'p.15) B-108 (1'p.9) B-109 (tech. assoc. with B-108'p.9) C-1 (1'fig.21) D-4 (1'fig.21) D-17 (1'p.308)
		Judd, 1954	
50.	East Canyon, Utah	Morris and Burgh, 1941	A-2 (1'fig.20) B-46 (1'p.17) C-2 (1'fig.20) D-4 (1'fig.20)
51.	Lake Canyon, Utah	Weltfish, 1932a Morris and Burgh, 1941 Weltfish, 1932a	B-46 (1'p.19) B-84 (1'p.14) D-2 (1'p.19)

<u>Number</u>	<u>Location</u>	<u>Reference</u>	<u>Descriptive type</u>
52.	Grand Gulch, Utah	Pepper, 1902	A-1 (?Plate 10)
		Weltfish, 1932a	B-36 (3'p.12)
		Morris and Burgh, 1941	B-45 (2'p.17)
		Weltfish, 1932a	B-66 (15'p.12)
		Morris and Burgh, 1941	C-1 (1'fig.21)
		Guernsey and Kidder, 1921	C-4 (1'p.60)
		Weltfish, 1932a	D-2 (?p.12)
			D-4 (?p.12)
			D-6 (?p.12)
			D-9 (?p.12)
			D-13 (?p.12)
			E-11 (2'p.13)
			E-15 (3'p.13)
		Mason, 1904	E-29 (1'Plate 210)
53.	Buttler Wash, Utah	Weltfish, 1932a	B-66 (1'p.16)
			D-4 (1'p.16)
			E-16 (1'p.16)
54.	Allen Canyon, Utah	Weltfish, 1932a	B-52 (1'p.16)
			B-66 (3'p.16)
			D-2 (1'p.16)
			D-4 (1'p.16)
			D-13 (1'p.16)
		Judd, 1954	D-17 (2'p.308)
55.	Certain Abajo Phase sites	Brew, 1946	B-51 (?p.93)
			B-139 (?p.93)
56.	Poncho House, Utah	Guernsey, 1931	E-39 (1'p.108)
57.	Broken Roof Cave, Ariz.	Guernsey, 1931	A-1 (8'p.70)
			B-66 (?pp.74,75)
			C-1 (3'Plate 13)
			C-6 (5'Plate 16)
			D-2 (3'Plate 13)
			D-6 (5'Plate 16)

Number	Location	Reference	Descriptive name
22.	Grand Gulch, Utah	Pepper, 1902 Wells, 1922 Morris and Brown, 1941 Wells, 1922 Morris and Brown, 1941 Gunnery and Wells, 1921 Wells, 1922	X-1 (Plate 10) X-2 (Plate 11) X-3 (Plate 12) X-4 (Plate 13) X-5 (Plate 14) X-6 (Plate 15) X-7 (Plate 16) X-8 (Plate 17) X-9 (Plate 18) X-10 (Plate 19) X-11 (Plate 20) X-12 (Plate 21) X-13 (Plate 22) X-14 (Plate 23) X-15 (Plate 24)
23.	Battle Mountain, Utah	Wells, 1922	B-1 (Plate 25) B-2 (Plate 26) B-3 (Plate 27)
24.	Allen Canyon, Utah	Wells, 1922	A-1 (Plate 28) A-2 (Plate 29) A-3 (Plate 30) A-4 (Plate 31) A-5 (Plate 32) A-6 (Plate 33) A-7 (Plate 34)
25.	Certain Area Phase sites	Brown, 1902	B-1 (Plate 35) B-2 (Plate 36)
26.	French House, Utah	Gunnery, 1921	F-1 (Plate 37)
27.	Broken Rock Cave, Ariz.	Gunnery, 1921	G-1 (Plate 38) G-2 (Plate 39) G-3 (Plate 40) G-4 (Plate 41) G-5 (Plate 42) G-6 (Plate 43)

<u>Number</u>	<u>Location</u>	<u>Reference</u>	<u>Descriptive types</u>
58.	Kayenta District, Ariz.	Kidder and Guernsey, 1919	A-1 (?Plate 76,h) A-3 (?Plate 76,k) B-66 (many'fig.80) B-110 (1'Plate 76,a) C-12 (1'p.60)
		Guernsey and Kidder, 1921	
		Kidder and Guernsey, 1919	D-2 (?Plate 76,h)
		Guernsey and Kidder, 1921	D-4 (?p.61)
		Kidder and Guernsey, 1919	D-6 (?Plate 76,m) D-9 (?Plate 76,l) D-13 (?Plate 77)
		Guernsey, 1931	D-16 (1'p.95)
		Guernsey and Kidder, 1921	D-18 (1'p.61)
		Kidder and Guernsey, 1919	E-2 (2'pp.110,111)
		Weltfish, 1932a	E-11 (1'p.4) E-16 (many'p.5) E-29 (many'p.108)
		Kidder and Guernsey, 1919	
59.	Woodchuck Cave, Ariz.	Lockett, 1953	B-66 (?p.15) B-137 (?p.17)
60.	Betatakin, Ariz.	Weltfish, 1932	B-66 (3'p.7) E-16 (1'p.7)
61.	Prayer Rock, Ariz.	Morris and Burgh, 1941	A-1 (19'fig.19,20) A-3 (7'fig.19,20) B-9 (2'p.10) B-36 (1'p.7) B-42 (1'p.15) B-45 (1'p.17) B-47 (1'p.18) B-49 (1'p.18) B-66 (64'p.12) B-72 (2'p.17) B-74 (3'p.19) C-1 (3'fig.19,20) C-2 (8'fig.19,20) C-6 (3'fig.19,20) C-7 (1'fig.19,20) C-9 (1'fig.19,20) D-2 (11'fig.19,20) D-4 (19'fig.19,20) D-8 (1'fig.19,20) D-9 (1'fig.19,20) D-13 (8'fig.19,20) E-13 (4'fig.22) E-19 (3'fig.22) E-37 (1'fig.22)

Number	Location	Reference	Section
58.	Revere District, Ala.	Revere and Johnson, 1919	Section 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100
59.	Woodstock Cave, Ala.	Locke, 1921	Section 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100
60.	Bedford, Ala.	Wells, 1921	Section 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100
61.	Preyer Rock, Ala.	Howe and Smith, 1911	Section 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

<u>Number</u>	<u>Location</u>	<u>Reference</u>	<u>Descriptive type</u>
62.	Lukachukai Mountains, Ariz.	Morris and Burgh, 1941	B-73 (1 sherd either B-73 or B-74' fig.43,1) B-74 (see above)
63.	Painted Cave, Ariz.	Haury, 1945a	A-1 (1'p.44) A-3 (1'p.44) B-28.1 (1'p.44) B-66 (2'p.44) B-70 (tech. assoc. with B-66'p.44) C-3 (1'p.44) C-6 (2'p.44) D-6 (1'p.44) D-14 (1'p.47 at nearby Vandal Cave) D-15 (1'p.44) E-8 (1'p.43)
64.	Canyon del Muerto, Ariz.	Morris and Burgh, 1941 Weltfish, 1932a Morris and Burgh, 1941 Weltfish, 1932a Morris and Burgh, 1941 Weltfish, 1932a	A-1 (11'fig.19,20) A-3 (10'fig.19,20) B-9 (1'p.10) B-36 (1'p.7) B-66 (23'p.13) B-72 (1'fig.20) B-73 (1'fig.6) B-84 (1'p.14) B-109 (1'p.9) C-1 (2'fig.19,20) C-2 (7'fig.19,20) C-3 (1'fig.19,20) C-6 (4'fig.19,20) D-2 (4'fig.19,20) D-4 (9'fig.19,20) D-6 (2'fig.19,20) D-8 (1'fig.19,20) D-9 (2'p.9) D-13 (5'fig.19,20) D-14 (1'fig.19,20) D-15 (4'fig.19,20) D-17 (1'fig.19,20) E-16 (2'p.10) E-21 (1'p.9) E-30 (2'p.10)
65.	Canyon de Chelly, Ariz.	Morris and Burgh, 1941 Weltfish, 1932a	B-36 (1'p.7) B-66 (2'p.12) B-73 (1'p.19) E-11 (1'p.11) E-16 (2'p.11)

Number	Location	Reference	Investigator
62.	Laconia, N.H.	Wells, 1931	Wells, 1931
63.	Painted Cave, Ariz.	Wells, 1931	Wells, 1931
64.	Canyon del Muerto, Ariz.	Wells, 1931	Wells, 1931
65.	Canyon de Chelly, Ariz.	Wells, 1931	Wells, 1931

<u>Number</u>	<u>Location</u>	<u>Reference</u>	<u>Descriptive type</u>
66.	Awatobi, Ariz.	Mason, 1904	B-9 (?p.509) E-37 (?p.509) F-2 (?p.509)
67.	Jetyto Wash, Ariz.	Mason, 1904	(same types as number 66'p.509)
68.	Sikyatki, Ariz.	Mason, 1904	(same types as number 66'p.509)
69.	Hopi, Ariz.	Field Notes, 1958 Weltfish, 1932a Field Notes, 1958 Mason, 1904 Bartlett, 1949 Field Notes, 1958 Ellis and Walpole, 1959 Hough, 1915 Field Notes, 1958 Clark Field Collection, 1957	A-1 (X) A-3 (X) B-9 (X) B-66 (4'p.34) B-84 (6'p.35) C-1 (X) D-1 (X) D-6 (X) D-9 (several'Plate 215) D-11 (several'Plate 218) E-20 (several'Plate 16) E-28 (X'fig.4,c) E-29 (X'pp.38,39) F-1 (X) F-4 (X) F-7 (X) F-8 (X'p.183) F-9 (several'pp. 90,94) F-11 (X) F-11.1(X'Plate 21)
70.	Kiatuthlana, Ariz.	Roberts, 1931	B-137 (several'p.150)
71.	Whitewater, Ariz.	Roberts, 1940	B-75 (several'p.1)
72.	Village of Great Kivas, N.M.	Morris and Burgh, 1941 Roberts, 1932	B-66 (several'p.12) E-12 (2'p.134)

Number	Location	Collector	Date
66.	Amherst, Ariz.	Barrett, 1932	1932
67.	Jeffrey Wash, Ariz.	Barrett, 1932	1932
68.	Stywell, Ariz.	Barrett, 1932	1932
69.	Hopi, Ariz.	Field Notes, 1932	1932
70.	Katichiana, Ariz.	Robert, 1932	1932
71.	Whiteaker, Ariz.	Robert, 1932	1932
72.	Village of Great River, N.H.	Robert, 1932	1932

<u>Number</u>	<u>Location</u>	<u>Reference</u>	<u>Descriptive type</u>
73.	Mesa Verde, Colo.	Morris and Burgh, 1941	A-1 (28'fig.21) A-2 (1'fig.21) A-3 (1'fig.21) B-28 (2'p.11) B-36 (3'p.11) B-41 (1'p.16) B-42 (3'p.15, one is tech. assoc. with B-130) B-43 (1'p.16) B-66 (15'p.12) B-84 (29'p.14) B-92 (1'p.9) B-94 (1'p.17) B-95 (1'p.15) B-104 (3'p.11) B-118.3 (tech. assoc. with B-84'p.16) B-127 (1'p.13) B-130 (1'p.15) C-1 (9'fig.21) C-3 (5'fig.21) C-6 (1'fig.21) C-9 (1'fig.21) D-1 (2'fig.21) D-2 (5'fig.21) D-4 (8'fig.21) D-6 (5'fig.21) D-8 (1'fig.21) D-19 (1'fig.21) E-18 (1'fig.22) E-32 (23'fig.22) E-35 (3'fig.22) E-37 (2'fig.22)
74.	Johnson Canyon, Colo.	Morris and Burgh, 1941	B-66 (3'p.13) B-104 (1'p.11) D-4 (2'fig.21)
75.	#33, La Plata, Colo.	Morris and Burgh, 1941	B-36 (18'p.8)
76.	#41, La Plata, Colo.	Morris and Burgh, 1941	A-1 (1'fig.20) B-36 (1'p.8) B-66 (1'p.13)
77.	#23, La Plata, Colo.	Morris and Burgh, 1941	B-44 (1'fig.20) B-48 (tech. assoc. with B-44'fig.20)

<u>Number</u>	<u>Location</u>	<u>Reference</u>	<u>Descriptive type</u>
78.	Durango, Colo.	Morris and Burgh, 1954	A-1 (4'p.68) B-5 (1'p.68) B-45 (2'p.68) B-66 (1'p.68) B-104 (16'p.67) B-107 (tech. assoc. with B-104'p.68) C-1 (4'p.68) D-2 (?'p.68) D-4 (1'p.68) D-9 (1'p.68)
79.	Aztec, N.M.	Morris and Burgh, 1941 Spier, 1928 Weltfish, 1932a Morris, 1919	B-28 (1'fig.43,d) C-12 (2'p.136) D-1 (?'p.22) D-4 (?'p.22) D-8 (?'p.22) E-30 (several'p.177)
80.	Piedra, Colo.	Morris and Burgh, 1941	B-66 (1'p.13)
81.	Canyon Frances, Gobernador, N.M.	Morris and Burgh, 1941	B-66 (1'p.13) D-4 (1'fig.20)
82.	Pueblo Bonito, N.M.	Judd, 1954	A-1 (12'pp.163 to 167) A-3 (8'pp.165,166) B-28 (1'p.321) B-36 (1'p.163) B-66 (41'pp.163 to 168) B-84 (4'p.164) B-110 (tech. assoc. with B-127'p. 168) B-127 (3'pp.166,168) C-2.1 (1'p.164) C-4 (4'pp.166,168) C-9 (1'p.168) D-3 (4'p.165) D-4 (2'p.162) D-5 (2'p.163) D-8 (19'p.168) D-8.1 (6'p.165) D-17 (5'p.38) E-23 (1'p.160) E-29 (1'p.160) E-31 (2'p.160) E-32 (1'p.160)

<u>Number</u>	<u>Location</u>	<u>Reference</u>	<u>Descriptive type</u>
82.1.	Chacra Mesa, N.M.	Vivian, 1957	B-28 (1'p.151) F-11 (1'p.149)
83.	Chaco Canyon Pit Houses, N.M.	Judd, 1924	B-81 (2'p.399)
84.	Leyit Kin, N.M.	Tschopik, 1939	B-139 (1'p.98) E-16 (1'p.98)
85.	Bc 50-51, N.M.	Tschopik, 1939	B-30 (1'p.96) B-66 (1'p.96)
86.	L.A. 2507, N.M.	Bullard and Cassidy, 1956	B-66 (1'p.59)
87.	Near Gallup, N.M.	Field Notes, 1959	A-1 (1) B-66 (1) C-3 (1) D-6 (1)
88.	Cebolleta Mesa N.M.	Ruppe and Dittert, 1952	B-75 (1'p.202)
89.	Correo, N.M.	Sandburg, 1950	A-1 (1'Plate 54) B-36 (1'fig.132) B-66 (1'Plate 54) C-1 (1'Plate 54)
90.	Pithouse near Zia, N.M.	Vytlacil and Brody, 1958 Field Notes, 1959 Vytlacil and Brody, 1958	B-40.2(20) B-66 (20) B-70 (3'p.182) C-12 (1'p.176) D-2 (3'p.182)
91.	Jemez Cave, N.M.	Alexander and Reiter, 1935 Morris and Burgh, 1941 Alexander and Reiter, 1935	B-51 (2'pp.49,50) B-66 (3'p.13) B-122.1(1'pp.49,50) F-15 (1'pp.49,50)
92.	Gallina, N.M.	Field Notes, 1959 Wilkinson, 1958 Lange, 1941	B-36 (6) B-66 (many) D-4 (?p.194) F-15 (several'p.55)
93.	Chama, N.M.	Morris and Burgh, 1941 Hibben, 1937	B-66 (several'p.12) E-38 (1'p.44)

Number	Location	Reference	Descriptive type
82.1	Chaco Mesa, N.M.	Vivian, 1937	B-11 (1'p.131) B-11 (1'p.131)
83.	Chaco Canyon Site Houses, N.M.	Isak, 1931	B-11 (1'p.131)
84.	Ley's Hill, N.M.	Tschopp, 1937	B-11 (1'p.131) B-11 (1'p.131)
85.	Bc 50-51, N.M.	Tschopp, 1937	B-11 (1'p.131) B-11 (1'p.131)
86.	L.A. 2507, N.M.	Ballard and Gassner, 1936	B-11 (1'p.131)
87.	Near Gallup, N.M.	Field Notes, 1937	A-1 (1) B-11 (1) C-1 (1) D-1 (1)
88.	Cebollita Mesa N.M.	Hughes and Hester, 1937	B-11 (1'p.131)
89.	Correo, N.M.	Sandberg, 1936	A-1 (1'p.131) B-11 (1'p.131) C-1 (1'p.131) D-1 (1'p.131)
90.	Pithouse near Zia, N.M.	Vivian and Brody, 1938 Field Notes, 1937	B-11 (1'p.131) B-11 (1'p.131)
91.	James Cave, N.M.	Alexander and Hester, 1937	B-11 (1'p.131) B-11 (1'p.131)
92.	Gallina, N.M.	Field Notes, 1937	B-11 (1'p.131) B-11 (1'p.131) C-1 (1'p.131) D-1 (1'p.131)
93.	Grass, N.M.	Wilkinson, 1938 Lange, 1931	B-11 (1'p.131) B-11 (1'p.131) C-1 (1'p.131) D-1 (1'p.131)

<u>Number</u>	<u>Location</u>	<u>Reference</u>	<u>Descriptive type</u>
94.	Leafwater, N.M.	Luebben, 1953	B-66 (1'Plate VIII)
95.	Pindi, N.M.	Stubbs and Stallings, 1953	E-16 (2'pp.139,140)
96.	Pecos, N.M.	Kidder, 1932	B-68.1 (several'p.296) D-4 (several'p.296) E-16 (2'fig.245)
97.	Fork Lightning, N.M.	Kidder, 1932	B-75 (1'p.296)
99.	Tewa, N.M. San Juan	Art Series, 1936 Ellis and Walpole, 1959 Field Notes, 1960	B-24 (X'p.4) B-84 (X'p.191) C-8 (X) F-8 (X) G-1 (X) G-2 (X)
	San Ildefonso	Gifford, 1940 Field Notes, 1960	B-140 (X'p.43) G-1 (X)
	Santa Clara	Hill, MS. Field Notes, 1960 Hill, MS.	B-25 (X'p.80) B-86 (X'p.80) B-137 (X'p.80) C-8 (X) E-29 (X'p.81) F-8 (X'p.82) G-1 (X'p.82)
	Nambe	Ellis and Walpole, 1959	B-68 (1'p.190)
100.	Eastern Keres, N.M. Cochiti	Lange, 1951	E-29 (X'pp.177,178)
	Santo Domingo	Field Notes, 1959 Ellis and Walpole, 1959 Field Notes, 1959	E-29 (X) F-8 (X) G-1 (X)
	San Felipe	Ellis and Walpole, 1959 Field Notes, 1959	B-66 (1'p.189) E-29 (X'p.183) G-1 (?)
	Santa Ana	Ellis and Walpole, 1959 Field Notes, 1960 Weltfish, 1932a	B-66 (X'p.189) B-84 (X'p.189) C-8 (X) D-4 (X) D-11 (1'p.35)

Number Location	Reference	Descriptive Data
94. Leinster, N.M.	Leinster, 1933	3-35 (1/2, 1/2, 1/2)
95. Pindi, W.M.	Stallings, 1933	3-15 (1/2, 1/2, 1/2)
96. Pecos, N.M.	Kidd, 1933	3-55.1 (over 1/2, 1/2, 1/2) 3-15 (1/2, 1/2, 1/2)
97. Fork Lightning, N.M.	Kidd, 1933	3-15 (1/2, 1/2, 1/2)
98. Tewa, N.M. San Juan	Art. Series, 1933 Ellis and Walpole, 1933	3-55 (1/2, 1/2, 1/2) 3-15 (1/2, 1/2, 1/2)
99. San Lidalonso	Gifford, 1930 Field Notes, 1930	3-15 (1/2, 1/2, 1/2) 3-15 (1/2, 1/2, 1/2)
100. Santa Clara	Hill, MS.	3-15 (1/2, 1/2, 1/2) 3-15 (1/2, 1/2, 1/2) 3-15 (1/2, 1/2, 1/2)
101. Santa Clara	Field Notes, 1930 Hill, MS.	3-15 (1/2, 1/2, 1/2) 3-15 (1/2, 1/2, 1/2) 3-15 (1/2, 1/2, 1/2)
102. Santa Clara	Ellis and Walpole, 1933	3-15 (1/2, 1/2, 1/2)
103. Eastern Texas, N.M. Coehel	Range, 1931	3-15 (1/2, 1/2, 1/2)
104. Santa Domingo	Field Notes, 1933 Ellis and Walpole, 1933	3-15 (1/2, 1/2, 1/2) 3-15 (1/2, 1/2, 1/2)
105. San Felipe	Ellis and Walpole, 1933 Field Notes, 1933	3-15 (1/2, 1/2, 1/2) 3-15 (1/2, 1/2, 1/2)
106. Santa Ana	Ellis and Walpole, 1933 Field Notes, 1933	3-15 (1/2, 1/2, 1/2) 3-15 (1/2, 1/2, 1/2)
107. Santa Ana	Walpole, 1933	3-15 (1/2, 1/2, 1/2)

<u>Number</u>	<u>Location</u>	<u>Reference</u>	<u>Descriptive type</u>
100.	Eastern Keres, N.M. Zia	Ellis and Walpole, 1959	A-1 (X'p.186) A-2.1 (X'p.187) B-28.1 (X'p.185) B-66 (X'p.188) B-84 (1'p.188)
		Field Notes, 1960	B-102 (1)
		Ellis and Walpole, 1959	B-137 (X'p.185)
		Field Notes, 1960	C-8 (X) D-4 (X)
		Mason, 1904	D-11 (2'Plate 214)
101.	Jemez, N.M.	Ellis and Walpole, 1959	A-2.1 (X'p..93)
		Field Notes, 1959	A-3 (X)
		Ellis and Walpole, 1959	B-84 (X'p.193)
		Field Notes, 1959	B-102 (X) C-8 (X) D-4 (X) E-29 (X) F-8 (X)
102.	Sandia, N.M.	Field Notes, 1959	G-1 (?)
104.	Laguna, N.M.	Field Notes, 1959	F-8 (X)
105.	Acoma, N.M.	Ellis and Walpole, 1959	B-66 (3'p.189)
		Paytiano, 1932	F-12 (X'p.41)
106.	Zuni, N.M.	Weltfish, 1932a	B-66 (5'p.87)
		Morris and Burgh, 1941	B-89 (1'tech. assoc. with B-66'p.15)
		Mason, 1904	B-116 (1'p.502) D-91 (1'Plate 214) D-11 (3'Plate 214)
		Cushing, 1920	E-20 (1'Plate XIII,f)
		Morris and Burgh, 1941	E-29 (X'p.20)
		Douglas, 1955	F-4 (X'fig.S)
		Cushing, 1920	F-5 (X'Plate VIII)
		Mason, 1904	F-9 (X'Plate 213)
		Cushing, 1920	F-10 (X'p.88) F-12 (X'p.238)

Number Location	Reference	Descriptive Name
100. Eastern Texas, N.M. Zia	Ellis and Weipole, 1959	A-1 (X'p.1959) A-2.1 (X'p.1959) H-25.1 (X'p.1959) B-65 (X'p.1959) B-81 (X'p.1959) B-102 (1) B-137 (X'p.1959)
	Field Notes, 1959 Ellis and Weipole, 1959	C-3 (1) D-4 (1) D-11 (2' Plate XII)
	Neeson, 1961	
101. Texas, N.M.	Ellis and Weipole, 1959	A-2.1 (X'p.1959)
	Field Notes, 1959	A-3 (1) B-81 (X'p.1959)
	Ellis and Weipole, 1959	B-102 (X) C-8 (1) D-4 (1) E-29 (1) F-6 (1)
	Field Notes, 1959	G-1 (7) H-8 (1)
102. Santa Fe, N.M.	Field Notes, 1959	
103. Laguna, N.M.	Field Notes, 1959	
104. Acuna, N.M.	Ellis and Weipole, 1959	B-65 (X'p.1959)
	Payson, 1935	H-12 (X'p.44)
105. Zuni, N.M.	Weipole, 1959	H-65 (X'p.67) H-89 (1' rock, acuna, with B-65'p.12)
	Neeson, 1961	B-115 (X'p.1959) D-91 (1' Plate XII) E-11 (3' Plate XII) F-20 (1' Plate XII, 1) H-29 (X'p.20)
	Neeson and Burg, 1961	F-6 (X'p.2) F-7 (1' Plate VII) H-9 (1' Plate XII) F-10 (X'p.68) F-12 (X'p.73)
	Goshute, 1950	
	Neeson and Burg, 1961	
	Burg, 1961	
	Neeson, 1961	
	Goshute, 1950	
	Goshute, 1950	
	Goshute, 1950	

<u>Number</u>	<u>Location</u>	<u>Reference</u>	<u>Descriptive type</u>
107.	Navaho, N.M., Ariz.	Vivian, 1957 Morris and Burgh, 1941 Field Notes, 1959 Vivian, 1957	F-28 (1'p.151) B-66 (X'p.13) B-84 (? 'p.14) C-8 (X) D-4 (X) F-11 (1'fig.3)
108.	Jicarilla, N.M.	Weltfish, 1930b	B-84 (X'p.472) B-102 (X) C-8 (X) D-4 (X) D-8 (X)
109.	Ute, Colo.	Morris and Burgh, 1941 Weltfish, 1930b Field Notes, 1959 Stewart, 1942	B-66 (X'p.13) B-84 (X'p.14) B-119 (X'p.470) B-121 (tech. assoc. with B-119' p.470) B-131 (X'p.470) B-133 (tech. assoc. with B-131'p. 470) C-8 (X) D-4 (X) D-11.1 (X'p.271; a few northern Ute groups make a flat-bottom type.)
110.	Cohonino, Ariz.	Colton, 1946	B-75 (many'p.314)
111.	Wupatki sites, Ariz.	King, 1949 Smith, 1952	B-28 (several'p.105) B-75 (1'p.146)
112.	Site near Flagstaff, Ariz.	Haury, 1945b	B-82 (1'pp.171,172)
113.	Medicine Cave, Ariz.	Bartlett, 1934	A-1 (1'fig.33) B-66 (1'pp.44,45) D-6 (1'fig.33) E-22 (2'p.44)
114.	Winona and Ridge Ruin, Ariz.	McGregor, 1941	A-3 (1'p.241) B-28 (several'p.235) B-66 (8'p.238) B-68 (tech. assoc. with B-66'p.238) B-82 (2'p.240) B-84 (8'p.241)

<u>Number</u>	<u>Location</u>	<u>Reference</u>	<u>Descriptive type</u>
114.	Winona and Ridge Ruin, Ariz.	McGregor, 1941	B-88 (tech. assoc. with B-82 'p.240) B-113 (1 'p.238) D-6 (5 'p.241) D-8 (? 'p.235) E-17 (several 'p.243)
115.	Sinagua, Ariz.	Colton, 1946	B-75 (rare 'p.314) B-81 (rare 'p.314) B-139 (rare 'p.314) B-140 (rare 'p.314) E-39 (many 'p.314)
116.	Palatki, Ariz.	Morris and Burgh, 1941 Fewkes, 1898	B-84 (1 'p.14) F-15 (? 'p.572)
117.	Hidden House, Ariz.	Dixon, 1956	A-1 (2 'p.60) B-84 (2 'p.60) C-4 (2 'p.60) D-6 (1 'p.60) D-10 (1 'p.60)
118.	Tuzigoot, Ariz.	Caywood and Spicer, 1935	B-27 (1 'p.90) B-59 (several 'p.90) B-137 (several 'p.90)
119.	Honanki, Ariz.	Fewkes, 1898	F-15 (? 'p.572)
120.	Chavez Pass, Ariz.	Morris and Burgh, 1941	B-84 (several 'p.14)
121.	Chevelon, Ariz.	Fewkes, 1904 Dixon, 1956 Mason, 1904	A-1 (1 'fig.63) B-82 (13 'p.61) F-2 (several 'p.508)
122.	Sierra Ancha, Ariz.	Haury, 1934 Morris and Burgh, 1941 Haury, 1934	A-1 (3 'Plate LI,a) B-19 (several 'p.10) B-25 (1 'p.10) B-26 (1 'p.10) C-1 (5 'Plate LI) D-1 (6 'Plate LI) D-12 (1 'Plate LI) E-7 (? 'Plate XLIV,b) E-14 (? 'Plate XLIX,a) F-3 (many 'Plate LIII)

Number Location	Reference	Descriptive name
111. Winona and Ridge Ridge, Ariz.	McGregor, 1941	5-28 (several, p. 280) B-113 (1 p. 280) B-8 (2 p. 281) B-8 (2 p. 282) B-17 (several, p. 283)
112. Almagre, Ariz.	Gordon, 1946	E-72 (several, p. 311) B-81 (several, p. 311) E-119 (several, p. 311) B-110 (several, p. 311) B-39 (several, p. 311)
116. Palatka, Ariz.	North and Burgin, 1941 Newman, 1956	5-84 (1 p. 311) F-12 (1 p. 312)
117. Hidden House, Ariz.	Blanton, 1956	A-1 (1 p. 313) B-41 (1 p. 313) C-1 (1 p. 313) E-6 (1 p. 313) D-10 (1 p. 313)
118. Tulefoot, Ariz.	Gaywood and Spencer, 1935	E-27 (1 p. 313) B-29 (several, p. 313) B-117 (several, p. 313)
119. Honanki, Ariz.	Newman, 1956	F-12 (1 p. 313)
120. Chavez Pass, Ariz.	North and Burgin, 1941	B-84 (several, p. 311)
121. Chavon, Ariz.	Townes, 1904 Blanton, 1956 Blanton, 1956	A-1 (1 p. 313) B-82 (1 p. 313) E-2 (several, p. 313)
122. Sierra Ancha, Ariz.	Henry, 1936 North and Burgin, 1941 Henry, 1936	A-1 (1 p. 313) B-10 (several, p. 313) B-22 (1 p. 313) B-26 (1 p. 313) C-1 (1 p. 313) D-1 (1 p. 313) D-12 (1 p. 313) E-7 (1 p. 313) E-11 (1 p. 313) E-3 (1 p. 313)

<u>Number</u>	<u>Location</u>	<u>Reference</u>	<u>Descriptive type</u>
123.	Havasupai, Ariz.	Spier, 1928	A-5 (X'p.134) B-82 (X'p.134) B-84 (X'p.14)
		Morris and Burgh, 1941	
		Spier, 1928	C-1 (X'p.135)
		Field Notes, 1960	C-9.1 (X)
		Spier, 1928	C-10 (X'p.136) C-14 (X'p.135)
124.	Walapai, Ariz.	Kroeber, 1935	B-82 (X'p.79) B-84 (tech. assoc. with B-82'p.79)
		Roberts, 1929	C-12 (X'p.130)
		Kroeber, 1935	D-2 (X'p.79) D-4 (X'p.79)
125.	Yavapai, Ariz.	Robinson, 1954	A-1 (X'Plate XLIX) B-82 (X'p.97) C-1 (X'Plate XLVII) D-4 (X'Plate L) D-6 (X'Plate LIII) D-9 (X'Plate LIII) D-12 (X'Plate XLVII)
126.	Western Apache, San Carlos, Ariz.	Roberts, 1929	A-1 (X'p.156) B-84 (X'pp.156,157) C-1 (X'p.158) D-4 (X'fig.18) D-6 (X'fig.18) D-7 (X'fig.18) D-12 (X'fig.17)
127.	Roosevelt 9:6, Ariz.	Morris and Burgh, 1941	E-5 (1'p.19)
128.	Los Pueblitos, Ariz.	Haury, 1945b	B-82 (several'p.171)
129.	Los Acequincas, Ariz.	Haury, 1945b	B-82 (several'p.171) D-1 (1'p.170) D-4 (1'p.170)
130.	Snaketown, Ariz.	Gladwin, et.al., 1937	B-82 (? 'p.159) B-137 (? 'p.159)
131.	Near Casa Grande, Ariz.	Voll, 1959	B-82 (70'Field Notes)
132.	Casa Grande, Ariz.	Weltfish, 1932a	B-86 (many'p.28)

Number	Location	Reference	Genetic type
123.	Havasu, Ariz.	Spicer, 1923	A-1 (1911) B-2 (1911) C-3 (1911)
124.	Walapai, Ariz.	Spicer, 1923 Field Notes, 1923	A-1 (1911) B-2 (1911) C-3 (1911) D-4 (1911) E-5 (1911)
125.	Yavapai, Ariz.	Robertson, 1923	A-1 (1911) B-2 (1911) C-3 (1911) D-4 (1911) E-5 (1911)
126.	Western Apache, San Carlos, Ariz.	Robertson, 1923	A-1 (1911) B-2 (1911) C-3 (1911) D-4 (1911) E-5 (1911)
127.	Roosevelt, Ariz.	Moore and Wright, 1921	A-1 (1911) B-2 (1911) C-3 (1911) D-4 (1911) E-5 (1911)
128.	Los Presidios, Ariz.	Henry, 1925	A-1 (1911) B-2 (1911) C-3 (1911) D-4 (1911) E-5 (1911)
129.	Los Acapulcos, Ariz.	Henry, 1925	A-1 (1911) B-2 (1911) C-3 (1911) D-4 (1911) E-5 (1911)
130.	Snakefoot, Ariz.	Gibson, et al., 1927	A-1 (1911) B-2 (1911) C-3 (1911) D-4 (1911) E-5 (1911)
131.	Wear Gass Grange, Ariz.	Voll, 1929	A-1 (1911) B-2 (1911) C-3 (1911) D-4 (1911) E-5 (1911)
132.	Gass Grange, Ariz.	Wells, 1928	A-1 (1911) B-2 (1911) C-3 (1911) D-4 (1911) E-5 (1911)

<u>Number</u>	<u>Location</u>	<u>Reference</u>	<u>Descriptive type</u>
133.	Ventana Cave, Ariz.	Haury, 1950	A-1 (?p.408) B-9 (32'table,33) B-10 (tech. assoc. with B-9'table,33) B-12 (tech. assoc. with B-9'table,33) B-13 (tech. assoc. with B-9'table,33) B-16 (tech. assoc. with B-9'table,33) B-17 (tech. assoc. with B-9'table,33) B-28 (23'table,33) B-29 (tech. assoc. with B-28'table,33) B-32 (tech. assoc. with B-28'table,33) B-33 (tech. assoc. with B-28'table,33) B-52 (25'table,33) B-53 (tech. assoc. with B-52'table,33) B-54 (tech. assoc. with B-52'table,33) B-66 (14'table,33) B-69 (tech. assoc. with B-66'table,33) B-70 (tech. assoc. with B-66'table,33) B-76 (2'table,33) B-88 (8'table,33) B-114 (2'table,33) B-118 (1'table,33) B-123 (1'table,33) C-1 (several'p.407) C-4 (?p.409) E-22 (5'p.402)
134.	Tumacacori, Ariz.	DiPeso, 1956	B-34 (1'p.410) E-37 (several'p.410)
135.	Quibuiiri, Ariz.	DiPeso, 1956	B-34 (1'p.410)
136.	Papago, Ariz.	Kissell, 1916 DiPeso, 1956 Kissell, 1916 Field Notes, 1959	A-4 (X'p.206) B-9 (X'p.209) B-25 (X'fig.61) B-51 (1'p.410) C-1 (X'fig.67,f) C-8 (X) C-13 (X) C-14 (X)

Number Location	Reference	Descriptive type
133. Ventana Cave, Ariz.	Barry, 1950	A-1 (1' x 100) A-2 (1' x 100) B-10 (1' x 100) B-11 (1' x 100) B-12 (1' x 100) B-13 (1' x 100) B-14 (1' x 100) B-15 (1' x 100) B-16 (1' x 100) B-17 (1' x 100) B-18 (1' x 100) B-19 (1' x 100) B-20 (1' x 100) B-21 (1' x 100) B-22 (1' x 100) B-23 (1' x 100) B-24 (1' x 100) B-25 (1' x 100) B-26 (1' x 100) B-27 (1' x 100) B-28 (1' x 100) B-29 (1' x 100) B-30 (1' x 100) B-31 (1' x 100) B-32 (1' x 100) B-33 (1' x 100) B-34 (1' x 100) B-35 (1' x 100) B-36 (1' x 100) B-37 (1' x 100) B-38 (1' x 100) B-39 (1' x 100) B-40 (1' x 100) B-41 (1' x 100) B-42 (1' x 100) B-43 (1' x 100) B-44 (1' x 100) B-45 (1' x 100) B-46 (1' x 100) B-47 (1' x 100) B-48 (1' x 100) B-49 (1' x 100) B-50 (1' x 100) B-51 (1' x 100) B-52 (1' x 100) B-53 (1' x 100) B-54 (1' x 100) B-55 (1' x 100) B-56 (1' x 100) B-57 (1' x 100) B-58 (1' x 100) B-59 (1' x 100) B-60 (1' x 100) B-61 (1' x 100) B-62 (1' x 100) B-63 (1' x 100) B-64 (1' x 100) B-65 (1' x 100) B-66 (1' x 100) B-67 (1' x 100) B-68 (1' x 100) B-69 (1' x 100) B-70 (1' x 100) B-71 (1' x 100) B-72 (1' x 100) B-73 (1' x 100) B-74 (1' x 100) B-75 (1' x 100) B-76 (1' x 100) B-77 (1' x 100) B-78 (1' x 100) B-79 (1' x 100) B-80 (1' x 100) B-81 (1' x 100) B-82 (1' x 100) B-83 (1' x 100) B-84 (1' x 100) B-85 (1' x 100) B-86 (1' x 100) B-87 (1' x 100) B-88 (1' x 100) B-89 (1' x 100) B-90 (1' x 100) B-91 (1' x 100) B-92 (1' x 100) B-93 (1' x 100) B-94 (1' x 100) B-95 (1' x 100) B-96 (1' x 100) B-97 (1' x 100) B-98 (1' x 100) B-99 (1' x 100) B-100 (1' x 100)
134. Transcort, Ariz.	Barry, 1950	B-31 (1' x 100) B-32 (1' x 100)
135. Gubler, Ariz.	Barry, 1950	B-33 (1' x 100)
136. Negro, Ariz.	Barry, 1950	B-34 (1' x 100) B-35 (1' x 100) B-36 (1' x 100) B-37 (1' x 100) B-38 (1' x 100) B-39 (1' x 100) B-40 (1' x 100) B-41 (1' x 100) B-42 (1' x 100) B-43 (1' x 100) B-44 (1' x 100) B-45 (1' x 100) B-46 (1' x 100) B-47 (1' x 100) B-48 (1' x 100) B-49 (1' x 100) B-50 (1' x 100) B-51 (1' x 100) B-52 (1' x 100) B-53 (1' x 100) B-54 (1' x 100) B-55 (1' x 100) B-56 (1' x 100) B-57 (1' x 100) B-58 (1' x 100) B-59 (1' x 100) B-60 (1' x 100) B-61 (1' x 100) B-62 (1' x 100) B-63 (1' x 100) B-64 (1' x 100) B-65 (1' x 100) B-66 (1' x 100) B-67 (1' x 100) B-68 (1' x 100) B-69 (1' x 100) B-70 (1' x 100) B-71 (1' x 100) B-72 (1' x 100) B-73 (1' x 100) B-74 (1' x 100) B-75 (1' x 100) B-76 (1' x 100) B-77 (1' x 100) B-78 (1' x 100) B-79 (1' x 100) B-80 (1' x 100) B-81 (1' x 100) B-82 (1' x 100) B-83 (1' x 100) B-84 (1' x 100) B-85 (1' x 100) B-86 (1' x 100) B-87 (1' x 100) B-88 (1' x 100) B-89 (1' x 100) B-90 (1' x 100) B-91 (1' x 100) B-92 (1' x 100) B-93 (1' x 100) B-94 (1' x 100) B-95 (1' x 100) B-96 (1' x 100) B-97 (1' x 100) B-98 (1' x 100) B-99 (1' x 100) B-100 (1' x 100)

<u>Number</u>	<u>Location</u>	<u>Reference</u>	<u>Descriptive type</u>
136.	Papago, Ariz.	Field Notes, 1959	D-4 (X) D-6 (X)
		Kissell, 1916	D-7 (X'fig.44)
		Robinson, 1954	D-8 (X'Plate XXXI) D-9 (X'Plate XXX) D-10 (X'Plate XXXI)
		Kissell, 1916	E-24 (X'p.165) E-25 (X'p.165)
137.	Pima, Ariz.	Kissell, 1916	A-1 (X'fig.31) A-4 (X'p.206) B-9 (X'p.209)
		Field Notes, 1959	C-1 (X) C-8 (X) C-13 (X) C-14 (X) D-4 (X)
		Kissell, 1916	D-5 (X'fig.44) D-6 (X'fig.44)
		Robinson, 1954	D-9 (X'Plate XIX) D-12 (X'Plate XXI)
		Kissell, 1916	E-25 (X'fig.21; E-24 may also occur among the Pima)
138.	Higgins Flat, N.M.	Martin, et.al., 1956	A-1 (3'p.132) B-66 (3'p.132) E-35 (1'fig.69,d)
139.	Tularosa Cave,	Martin, et.al., 1952	A-1 (1'p.306) A-3 (1'p.306) B-9 (2'p.310) B-52 (3'p.310) B-66 (19'p.306) B-108 (4'fig.115,c) C-6 (1'p.308) D-4 (2'p.308) E-32 (2'p.312)
140.	Reserve Area Caves, N.M.	Martin, et.al., 1954	B-66 (1'p.173)
141.	Cordova Cave, N.M.	Martin, et.al., 1952	B-52 (1'p.310) B-66 (6'p.306) B-108 (3'fig.115,c)
142.	Cave #1, Goat Basin, N.M.	Cosgrove, 1947	B-66 (1'p.103) D-6 (1'p.103)

Number	Location	Reference	Descriptive Data
136.	Papago, Ariz.	Field Notes, 1952	B-4 (1) B-5 (1) B-6 (1) B-7 (1) B-8 (1) B-9 (1) B-10 (1) B-11 (1) B-12 (1) B-13 (1)
137.	Pinon, Ariz.	Kassell, 1916	A-1 (1) A-2 (1) B-3 (1) C-4 (1) C-5 (1) C-6 (1) C-7 (1) C-8 (1) C-9 (1) C-10 (1) C-11 (1) C-12 (1) C-13 (1) C-14 (1) C-15 (1) C-16 (1) C-17 (1) C-18 (1) C-19 (1) C-20 (1) C-21 (1) C-22 (1) C-23 (1) C-24 (1) C-25 (1) C-26 (1) C-27 (1) C-28 (1) C-29 (1) C-30 (1) C-31 (1) C-32 (1) C-33 (1) C-34 (1) C-35 (1) C-36 (1) C-37 (1) C-38 (1) C-39 (1) C-40 (1) C-41 (1) C-42 (1) C-43 (1) C-44 (1) C-45 (1) C-46 (1) C-47 (1) C-48 (1) C-49 (1) C-50 (1) C-51 (1) C-52 (1) C-53 (1) C-54 (1) C-55 (1) C-56 (1) C-57 (1) C-58 (1) C-59 (1) C-60 (1) C-61 (1) C-62 (1) C-63 (1) C-64 (1) C-65 (1) C-66 (1) C-67 (1) C-68 (1) C-69 (1) C-70 (1) C-71 (1) C-72 (1) C-73 (1) C-74 (1) C-75 (1) C-76 (1) C-77 (1) C-78 (1) C-79 (1) C-80 (1) C-81 (1) C-82 (1) C-83 (1) C-84 (1) C-85 (1) C-86 (1) C-87 (1) C-88 (1) C-89 (1) C-90 (1) C-91 (1) C-92 (1) C-93 (1) C-94 (1) C-95 (1) C-96 (1) C-97 (1) C-98 (1) C-99 (1) C-100 (1)
138.	Hagline Flat, N.M.	Hartman, et al., 1956	A-1 (1) B-2 (1) B-3 (1) B-4 (1) B-5 (1) B-6 (1) B-7 (1) B-8 (1) B-9 (1) B-10 (1) B-11 (1) B-12 (1) B-13 (1) B-14 (1) B-15 (1) B-16 (1) B-17 (1) B-18 (1) B-19 (1) B-20 (1) B-21 (1) B-22 (1) B-23 (1) B-24 (1) B-25 (1) B-26 (1) B-27 (1) B-28 (1) B-29 (1) B-30 (1) B-31 (1) B-32 (1) B-33 (1) B-34 (1) B-35 (1) B-36 (1) B-37 (1) B-38 (1) B-39 (1) B-40 (1) B-41 (1) B-42 (1) B-43 (1) B-44 (1) B-45 (1) B-46 (1) B-47 (1) B-48 (1) B-49 (1) B-50 (1) B-51 (1) B-52 (1) B-53 (1) B-54 (1) B-55 (1) B-56 (1) B-57 (1) B-58 (1) B-59 (1) B-60 (1) B-61 (1) B-62 (1) B-63 (1) B-64 (1) B-65 (1) B-66 (1) B-67 (1) B-68 (1) B-69 (1) B-70 (1) B-71 (1) B-72 (1) B-73 (1) B-74 (1) B-75 (1) B-76 (1) B-77 (1) B-78 (1) B-79 (1) B-80 (1) B-81 (1) B-82 (1) B-83 (1) B-84 (1) B-85 (1) B-86 (1) B-87 (1) B-88 (1) B-89 (1) B-90 (1) B-91 (1) B-92 (1) B-93 (1) B-94 (1) B-95 (1) B-96 (1) B-97 (1) B-98 (1) B-99 (1) B-100 (1)
139.	Tufarosa Cave	Hartman, et al., 1952	A-1 (1) A-2 (1) A-3 (1) A-4 (1) A-5 (1) A-6 (1) A-7 (1) A-8 (1) A-9 (1) A-10 (1) A-11 (1) A-12 (1) A-13 (1) A-14 (1) A-15 (1) A-16 (1) A-17 (1) A-18 (1) A-19 (1) A-20 (1) A-21 (1) A-22 (1) A-23 (1) A-24 (1) A-25 (1) A-26 (1) A-27 (1) A-28 (1) A-29 (1) A-30 (1) A-31 (1) A-32 (1) A-33 (1) A-34 (1) A-35 (1) A-36 (1) A-37 (1) A-38 (1) A-39 (1) A-40 (1) A-41 (1) A-42 (1) A-43 (1) A-44 (1) A-45 (1) A-46 (1) A-47 (1) A-48 (1) A-49 (1) A-50 (1) A-51 (1) A-52 (1) A-53 (1) A-54 (1) A-55 (1) A-56 (1) A-57 (1) A-58 (1) A-59 (1) A-60 (1) A-61 (1) A-62 (1) A-63 (1) A-64 (1) A-65 (1) A-66 (1) A-67 (1) A-68 (1) A-69 (1) A-70 (1) A-71 (1) A-72 (1) A-73 (1) A-74 (1) A-75 (1) A-76 (1) A-77 (1) A-78 (1) A-79 (1) A-80 (1) A-81 (1) A-82 (1) A-83 (1) A-84 (1) A-85 (1) A-86 (1) A-87 (1) A-88 (1) A-89 (1) A-90 (1) A-91 (1) A-92 (1) A-93 (1) A-94 (1) A-95 (1) A-96 (1) A-97 (1) A-98 (1) A-99 (1) A-100 (1)
140.	Reserve Area, N.M.	Hartman, et al., 1952	A-1 (1) A-2 (1) A-3 (1) A-4 (1) A-5 (1) A-6 (1) A-7 (1) A-8 (1) A-9 (1) A-10 (1) A-11 (1) A-12 (1) A-13 (1) A-14 (1) A-15 (1) A-16 (1) A-17 (1) A-18 (1) A-19 (1) A-20 (1) A-21 (1) A-22 (1) A-23 (1) A-24 (1) A-25 (1) A-26 (1) A-27 (1) A-28 (1) A-29 (1) A-30 (1) A-31 (1) A-32 (1) A-33 (1) A-34 (1) A-35 (1) A-36 (1) A-37 (1) A-38 (1) A-39 (1) A-40 (1) A-41 (1) A-42 (1) A-43 (1) A-44 (1) A-45 (1) A-46 (1) A-47 (1) A-48 (1) A-49 (1) A-50 (1) A-51 (1) A-52 (1) A-53 (1) A-54 (1) A-55 (1) A-56 (1) A-57 (1) A-58 (1) A-59 (1) A-60 (1) A-61 (1) A-62 (1) A-63 (1) A-64 (1) A-65 (1) A-66 (1) A-67 (1) A-68 (1) A-69 (1) A-70 (1) A-71 (1) A-72 (1) A-73 (1) A-74 (1) A-75 (1) A-76 (1) A-77 (1) A-78 (1) A-79 (1) A-80 (1) A-81 (1) A-82 (1) A-83 (1) A-84 (1) A-85 (1) A-86 (1) A-87 (1) A-88 (1) A-89 (1) A-90 (1) A-91 (1) A-92 (1) A-93 (1) A-94 (1) A-95 (1) A-96 (1) A-97 (1) A-98 (1) A-99 (1) A-100 (1)
141.	Gordons Cave, N.M.	Hartman, et al., 1952	A-1 (1) A-2 (1) A-3 (1) A-4 (1) A-5 (1) A-6 (1) A-7 (1) A-8 (1) A-9 (1) A-10 (1) A-11 (1) A-12 (1) A-13 (1) A-14 (1) A-15 (1) A-16 (1) A-17 (1) A-18 (1) A-19 (1) A-20 (1) A-21 (1) A-22 (1) A-23 (1) A-24 (1) A-25 (1) A-26 (1) A-27 (1) A-28 (1) A-29 (1) A-30 (1) A-31 (1) A-32 (1) A-33 (1) A-34 (1) A-35 (1) A-36 (1) A-37 (1) A-38 (1) A-39 (1) A-40 (1) A-41 (1) A-42 (1) A-43 (1) A-44 (1) A-45 (1) A-46 (1) A-47 (1) A-48 (1) A-49 (1) A-50 (1) A-51 (1) A-52 (1) A-53 (1) A-54 (1) A-55 (1) A-56 (1) A-57 (1) A-58 (1) A-59 (1) A-60 (1) A-61 (1) A-62 (1) A-63 (1) A-64 (1) A-65 (1) A-66 (1) A-67 (1) A-68 (1) A-69 (1) A-70 (1) A-71 (1) A-72 (1) A-73 (1) A-74 (1) A-75 (1) A-76 (1) A-77 (1) A-78 (1) A-79 (1) A-80 (1) A-81 (1) A-82 (1) A-83 (1) A-84 (1) A-85 (1) A-86 (1) A-87 (1) A-88 (1) A-89 (1) A-90 (1) A-91 (1) A-92 (1) A-93 (1) A-94 (1) A-95 (1) A-96 (1) A-97 (1) A-98 (1) A-99 (1) A-100 (1)
142.	Cave #1, Goshute Basin, N.M.	Goshute, 1917	A-1 (1) A-2 (1) A-3 (1) A-4 (1) A-5 (1) A-6 (1) A-7 (1) A-8 (1) A-9 (1) A-10 (1) A-11 (1) A-12 (1) A-13 (1) A-14 (1) A-15 (1) A-16 (1) A-17 (1) A-18 (1) A-19 (1) A-20 (1) A-21 (1) A-22 (1) A-23 (1) A-24 (1) A-25 (1) A-26 (1) A-27 (1) A-28 (1) A-29 (1) A-30 (1) A-31 (1) A-32 (1) A-33 (1) A-34 (1) A-35 (1) A-36 (1) A-37 (1) A-38 (1) A-39 (1) A-40 (1) A-41 (1) A-42 (1) A-43 (1) A-44 (1) A-45 (1) A-46 (1) A-47 (1) A-48 (1) A-49 (1) A-50 (1) A-51 (1) A-52 (1) A-53 (1) A-54 (1) A-55 (1) A-56 (1) A-57 (1) A-58 (1) A-59 (1) A-60 (1) A-61 (1) A-62 (1) A-63 (1) A-64 (1) A-65 (1) A-66 (1) A-67 (1) A-68 (1) A-69 (1) A-70 (1) A-71 (1) A-72 (1) A-73 (1) A-74 (1) A-75 (1) A-76 (1) A-77 (1) A-78 (1) A-79 (1) A-80 (1) A-81 (1) A-82 (1) A-83 (1) A-84 (1) A-85 (1) A-86 (1) A-87 (1) A-88 (1) A-89 (1) A-90 (1) A-91 (1) A-92 (1) A-93 (1) A-94 (1) A-95 (1) A-96 (1) A-97 (1) A-98 (1) A-99 (1) A-100 (1)

<u>Number</u>	<u>Location</u>	<u>Reference</u>	<u>Descriptive type</u>
143.	Mule Creek, N.M.	Cosgrove, 1947	A-1 (1'fig.97,d) B-66 (several'p.103) D-6 (1'fig.97,d) E-33 (1'p.111)
144.	Bear Creek, Ariz.	Weltfish, 1932a	A-1 (12'p.29) B-21 (6'p.29) B-56 (3'p.29) B-66 (4'p.28) B-68 (2'p.28) B-71 (3'p.29) C-4 (12'p.30) D-4 (2'p.28) D-9 (2'p.28) E-30.1 (1'p.88) E-33 (1'fig.179)
		Hough, 1914	
145.	Water Canyon, N.M.	Cosgrove, 1947	A-1 (1'fig.97,a) B-43 (1'p.99) B-66 (? 'p.103) D-6 (2'fig.97,c,e)
146.	Cave #2, West Fork, Upper Gila, N.M.	Cosgrove, 1947	B-66 (? 'p.103) D-6 (? 'p.103)
147.	Cave Canyon, N.M.	Cosgrove, 1947	A-1 (2'fig.98) B-66 (2'p.103) C-1.1 (1'fig.34,b) C-6 (1'fig.98) D-6 (2'fig.98)
148.	Steamboat Cave, N.M.	Cosgrove, 1947	A-1 (1'fig.97,b) B-57 (1'p.103) B-66 (? 'p.103) D-6 (? 'p.103)
149.	Harris, N.M.	Wheat, 1955	B-70.1 (several'p.154)
150.	Swarts, N.M.	Morris and Burgh, 1941	B-66 (1'p.12)
151.	Doolittle Cave, N.M.	Cosgrove, 1947	B-66 (? 'p.103) D-6 (? 'p.103)
152.	Hacita Cave #3, N.M.	Cosgrove, 1947	B-32 (? 'p.99) B-34 (? 'p.99)
153.	Sierra Madre, Mex.	Lister, 1958	B-31 (5'p.85)

<u>Number</u>	<u>Location</u>	<u>Reference</u>	<u>Descriptive type</u>
154.	Chavez Cave, N.M.	Cosgrove, 1947	A-1 (2'fig.95,a) B-3 (4'p.103) B-4 (1'p.103) B-6 (23'p.103) B-7 (1'p.103) B-9 (4'p.105) B-10 (3'p.105) B-12 (6'p.105) B-13 (2'p.105) B-16 (16'p.105) B-17 (1'p.105) B-26 (10'p.104) B-32 (4'p.99) B-34 (1'p.99) B-66 (23'p.102) B-68 (1'p.102) B-69 (2'p.102) B-70 (1'p.102) B-111 (4'p.101) B-115 (10'p.101) D-2 (1'p.102) D-6 (?p.104)
155.	Las Cruces, N.M.	Morris and Burgh, 1941 Hough, 1932	B-66 (4'p.12) A-3 (1'p.52) D-16 (1'Plate 3no.1)
156.	Hueco Mountains Tex.	Cosgrove, 1947	(these sites have the same types as Chavez Cave and both local- ities are quantitatively summarized together) D-8 (1'fig.101,c) E-3 (1'fig.36)
157.	Feather Cave, N.M.	Hopkins, 1959	B-17 (1'Field Notes) B-67 (1'Field Notes) B-104 (4'Field Notes) B-105 (35'Field Notes) B-111 (8'Field Notes) B-124 (1'Field Notes) B-125 (8'Field Notes) B-128 (4'Field Notes) B-136 (1'Field Notes)

Number Location
 151. Chaves Canyon, N.M.
 152. Las Cruces, N.M.
 153. White Mountains, Tex.
 154. Panther Cove, N.M.

155. Las Cruces, N.M.
 156. White Mountains, Tex.
 157. Panther Cove, N.M.

<u>Number</u>	<u>Location</u>	<u>Reference</u>	<u>Descriptive type</u>
158.	Guadalupe Mountain Sites, N.M.	Mera, 1938	A-1 (1'Plate 13,A2) A-3 (1'Plate 13,A1) B-9 (4'Plate 14,1) B-16 (2'Plate 14,5) B-52 (1'p.51) B-66 (2'Plate 14,8) B-69 (1'Plate 14,7) B-110 (1'Plate 13,A1) B-114.1 (1'Plate 14,6) C-1 (1'Plate 13,A1) D-4 (1'Plate 13,A2) D-6 (1'Plate 13,A1) E-6 (1'p.52)
159.	Guadalupe Mountain Sites, N.M.	Howard, 1930	B-13 (1'p.197) B-39 (2'p.197) B-66 (2'p.197)
		Howard, 1932	D-2 (1'p.9) D-13 (1'p.9)
160.	Burnet Cave, N.M.	Morris and Burgh, 1941	B-52 (1'p.11) B-66 (several'p.13)
161.	Hermit Cave, N.M.	Ferdon, 1946	A-1 (1'Plate VII,a) B-14 (2'p.15) B-15 (1'p.15) C-1 (1'Plate VII,a) D-6 (1'Plate VII,a)
162.	Williams Cave, Tex.	Ayers, 1936	B-15 (2'p.603) B-18 (1'p.603) B-68 (2'p.603) B-70 (1'p.603)
163.	Culberson County, Tex.	Jackson, 1937	B-13 (2'p.151) B-18 (1'p.157) C-6 (1'Plate 25) D-6 (1'Plate 25)
164.	Bee Cave, Tex.	Coffin, 1932	B-15 (9'p.38) B-20 (1'p.38) B-27 (3'p.38) D-2 (2'p.38) E-4 (1'p.37)
165.	Shumla Cave, Tex.	Martin, 1933	B-9 (?p.55) B-10 (?p.55) B-12 (?p.55) B-17 (?p.55) B-23 (?p.55) E-5 (1'p.58)

<u>Number</u>	<u>Location</u>	<u>Reference</u>	<u>Descriptive type</u>
116.	Chihuahua sites, Mex.	Sayles, 1931	E-10 (1'Plate XXIV,a) E-24.1(1'Plate XXIV,d) E-26 (1'Plate XXIV,b) E-36 (1'Plate XXVI,c)
167.	Colorado River, Tex.	Holden, 1949	B-11 (1'p.115) D-2 (3'p.129)
168.	Coahuilla sites, Mex.	Cosgrove, 1947	B-6 (?p.104)
169.	Seminole, Tex.	Pearce and Jackson, 1933	A-1 (2'p.109) B-10 (13'p.109) B-13 (5'p.109) B-17 (26'p.109)
170.	Mescalero, N.M.	Field Notes, 1959 Weltfish, 1932b Field Notes, 1959 Roberts, 1929 Field Notes, 1959	A-1 (X) B-117 (X) B-129 (X'p.115) B-134 (X'p.115) C-1 (X) C-12 (X'p.130) D-6 (X)
171.	Tarahumara, Mex.	Mason, 1904 Field Notes, 1960	E-24 (X'p.527) E-25 (X)
172.	Yuma, Ariz.	Douglas, 1939	B-25 (X'p.159) B-122.1(X'p.159)
173.	Chemehuevi, Calif.	Robinson, 1954 Weltfish, 1930b Robinson, 1954	A-1 (X'Plate LXIV) B-86 (X'p.467) B-87 (X'p.467) C-1 (X'Plate LXV) D-4 (X'Plate LXVI) D-12 (X'Plate LXV)
174.	29 Palms, Calif.	Campbell, 1931	A-1 (?p.63) B-11 (4'p.63) D-2 (1'p.62) D-6 (4'p.62)

Number	Location	Notes	Remarks
166.	Chihuahua at sea, Mex.	1-10-1917	1-10-1917
167.	Colorado River, Tex.	1-10-1917	1-10-1917
168.	Coahuila River, Mex.	1-10-1917	1-10-1917
169.	Seminole, Tex.	1-10-1917	1-10-1917
170.	Neosho, K.M.	1-10-1917	1-10-1917
171.	Texas, Mex.	1-10-1917	1-10-1917
172.	Yuma, Ariz.	1-10-1917	1-10-1917
173.	Chihuahua, Calif.	1-10-1917	1-10-1917
174.	San Joaquin, Calif.	1-10-1917	1-10-1917

<u>Number</u>	<u>Location</u>	<u>Reference</u>	<u>Descriptive type</u>
175.	Mission tribes, Calif.	Kroeber, 1922	A-1 (X'Plate 1,b) A-3 (X'Plate 2) B-10 (X'p.156) C-1 (X'Plate 2) D-2 (X'p.160) D-4 (X'p.159) D-6 (X'p.160) D-12 (X'p.160)
176.	Chumash, Calif.	Kroeber, 1925 Weltfish, 1930b Kroeber, 1925	A-1 (X'p.52) B-87 (X'p.466) C-1 (X'p.52) D-4 (X'p.52) D-9 (X'p.52)
177.	Yokuts, Calif.	Kroeber, 1925 Morris and Burgh, 1941 Kroeber, 1925	B-10 (X'p.820) B-22 (X'p.17) D-12 (XIPlate 50,a)

Number location	Reference	Descriptive notes
175. Mission tribes, Calif.	Kroeber, 1935	A-1 (X'p. 128) A-3 (X'p. 128) B-10 (X'p. 128) C-1 (X'p. 128) D-2 (X'p. 128) D-4 (X'p. 128) D-8 (X'p. 128) D-12 (X'p. 128)
176. Gwinn, Calif.	Kroeber, 1935 Wells, 1930 Kroeber, 1935	A-1 (X'p. 128) B-87 (X'p. 128) C-1 (X'p. 128) D-4 (X'p. 128) D-7 (X'p. 128)
177. Yonkers, Calif.	Kroeber, 1935 Morris and Guth, 1961 Kroeber, 1935	B-10 (X'p. 128) B-82 (X'p. 128) B-12 (X'p. 128)

CHAPTER IV

INTERPRETATIONS

This chapter is divided into two major parts. The first deals with the history of individual and related basketry techniques in the Greater Southwest. On the basis of this detailed technological history, the second part presents a general picture of basketry development in the Pueblo area.

A. Technological Basketry Trends

1. Circular Coiled Center

Although the normal spiral center is widely distributed in the Greater Southwest, the circular beginning is limited to a few locations. The fact that Morris and Burgh find the method manifested in some baskets along the northern portion of the Pueblo region and at DuPont Cave between 200 A.D. and 500 A.D., suggests that these circular starts are culturally related. Since only one specimen was recovered from each site, it is not known whether the method diffused or the baskets were traded, nor can the direction of movement be inferred. A similar beginning was used by the Pawnee and another using a whole rod was found at Zia and Jemez. Although not enough information is available, a circular start similar to the Zia-Jemez type may be characteristic of some baskets produced by Jicarilla, Ute, and Paiute weavers. Because of the apparent hiatus of one thousand years between the archaeological and Zia-Jemez

CHAPTER IV

INTERPRETATION

This chapter is divided into two major parts. The first deals with the history of individual and related economic activities in the Greater Southwest. On the basis of archaeological history, the second part presents a general picture of economic development in the Pueblo area.

A. Technological History

1. Circular Colored Pottery

Although the earliest pottery is widely distributed in the Greater Southwest, the circular beginning is limited to a few locations. The fact that Morris and Burgh find the earliest examples in some locations along the northern portion of the Pueblo region and at Indian Cave between 200 A.D. and 500 A.D., suggests that these circular vessels are culturally related. Since only one specimen was recovered from each site, it is not known whether the method differed or the vessels were related, nor can the direction of movement be inferred. A similar specimen was used by the Pawnee and another using a wheel was found at Elia and Jensen. Although not enough information is available, a circular style similar to the Elia-Jensen type may be characteristic of some pueblos produced by Jicarilla, Ute, and Paiute weavers. Because of the apparent hiatus of one thousand years between the archaeological and historical

starts, the two are not considered related. The Pawnee type constitutes a third analogous method.

2. Oval Coiled Center

The oval center first occurs at Tularosa Cave between 300 B.C. and 150 B.C. It next appears at DuPont Cave, 217 A.D.; then it is found in the Pueblo area until 1300 A.D. Because certain forms suggest an oval start, the technique could have originated several times and may have been transferred later to other shapes. If this is true, the oval beginning may have been invented south of the Pueblo area in the vicinity of Tularosa Cave; at DuPont Cave or in the western part of the Pueblo area; in the Guadalupe mountains; in southern California; or in central California.

The oval beginning in the Pueblo area may have diffused from DuPont Cave, or it may have been used in the former area earlier than it is found. It occurs in the eastern sector only at Mesa Verde and Pueblo Bonito during the archaeological period. In Pueblo II or III, a basket utilizing such a start is found at Winona, Arizona. The technique is missing between 1300 A.D. and 1540 A.D., but in the next period a similar coiling start is used at Hopi and Jemez and also to the west among the Havasupai. It cannot be assumed that the modern occurrences in the Pueblo area are traditions continuing from the archaeological period.

3. One-rod Foundation

Baskets of one-rod foundation descriptive types are widely distributed in the Greater Southwest. On the basis of stitch manipulation,

stairs, the two are not considered related. The former type constitutes a third analogous method.

2. Oval Colored Center

The oval center first occurs at Tolares Cave between 300 B.C. and 150 B.C. It next appears at DePont Cave, 215 A.D.; then it is found in the Pacific area until 1300 A.D. Because certain forms suggest an oval start, the technique could have originated several times and may have been transferred later to other shapes. If this is true, the oval beginning may have been invented south of the Pacific area in the vicinity of Tolares Cave; at DePont Cave or in the western part of the Pacific area; in the Guadalupe mountains; in southern California; or in central California.

The oval beginning in the Pacific area may have differed from DePont Cave, or it may have been used in the former area earlier than it is found. It occurs in the eastern sector only at Mesa Verde and Pueblo Bonito during the archaeological period. In Pueblo II or III, a basket utilizing such a start is found at Phoenix, Arizona. The technique is missing between 1300 A.D. and 1500 A.D., but in the next period a similar coiling start is used at Hopi and James and also in the west among the Havasupai. It cannot be assumed that the western occurrences in the Pacific area are traditions continuing from the archaeological period.

3. One-rod Foundation

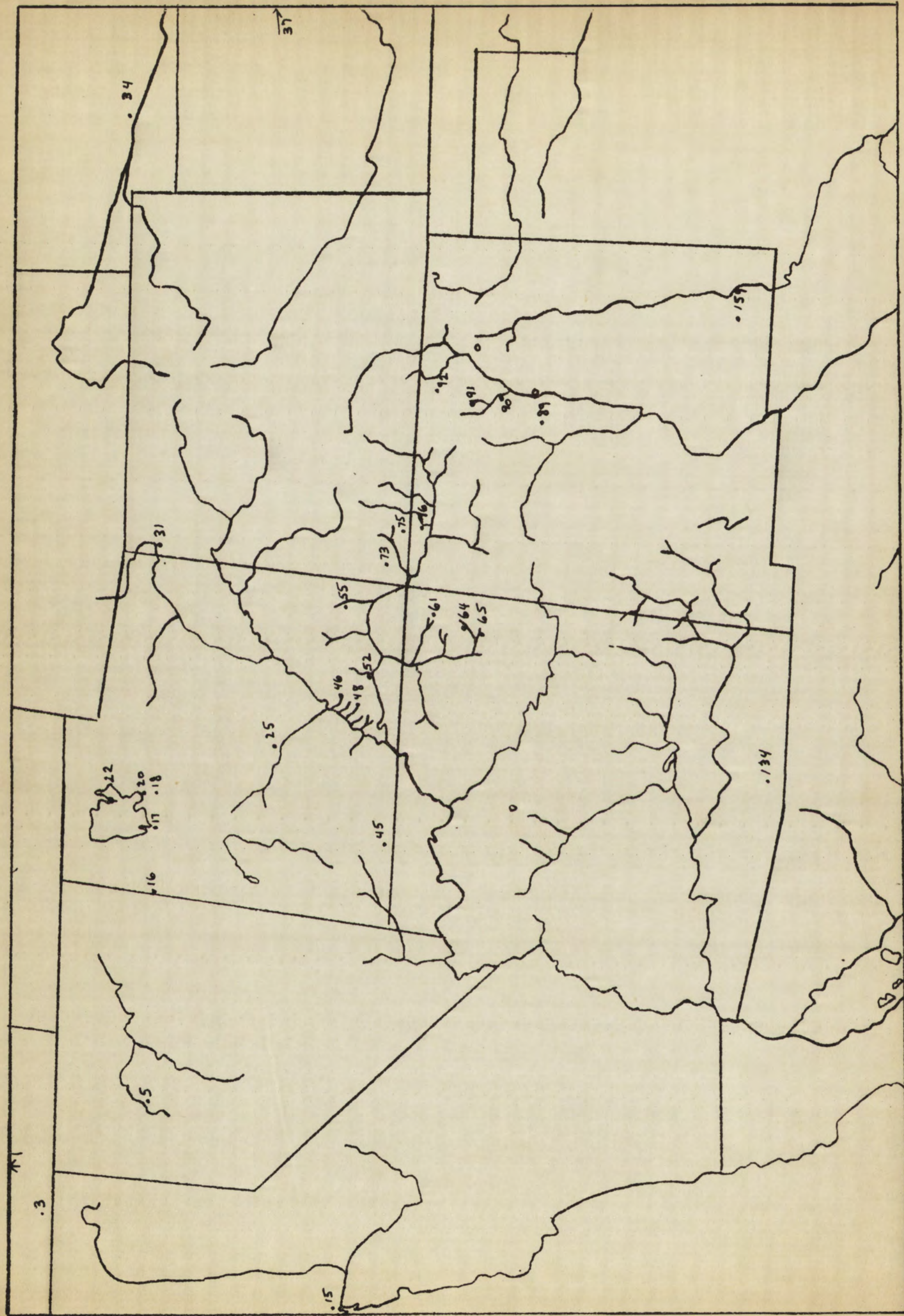
Baskets of one-rod foundation descriptive types are widely distributed in the Greater Southwest. On the basis of slight manipulations,

excluding stitch-and-wrap and intricate stitch, tentative regional variations are discerned. The interlocked stitch is distributed north of the Pueblo region and throughout its northern half. The noninterlocked stitch is found in three regions with a gap between each. In the north it occurs in a devious pattern across the Great Basin and down the High Plains. In the southern Colorado Plateau, the type forms an inverted T distribution pattern with the base stretching across the southern half of the Pueblo area and the stem projecting northwest from Pueblo Bonito to Mesa Verde. South of the Pueblo area, the type occurs in the middle Salt-Gila region. The split stitch type does not occur in the Pueblo area. However, baskets of the descriptive type have a similar distribution to those of the noninterlocked type. Figures 4 and 5 show the occurrences of interlocked and noninterlocked stitch types which are associated with a one-rod foundation.

The interlocked stitch is the earliest form. It first appears in the northeastern part of the Great Basin at Danger Cave between 4500 B.C. and 3500 B.C.; it persists at this site until 250 A.D. Two hundred miles west of Danger Cave the type is found at Lovelock Cave between 1500 B.C. and 500 B.C., continuing possibly until 200 A.D. or later. Baumhoff and Heizer believe that some finely coiled interlocked stitches on one-rod foundations were traded into the Lovelock region from central California even though no archaeological specimens have been recovered from the latter region. The interlocked stitch at Lovelock Cave occurs in two forms; in one the stitch encircles the rod in the coil below (B-36), and in the other it penetrates the lower rod (B-38). The latter penetrating method is also associated with a dominant split stitch variant (B-34). The interlocked, penetrating stitch type is manifested on two specimens to the

FIGURE 4

DISTRIBUTION OF ONE-ROD FOUNDATION WITH INTERLOCKED STITCH



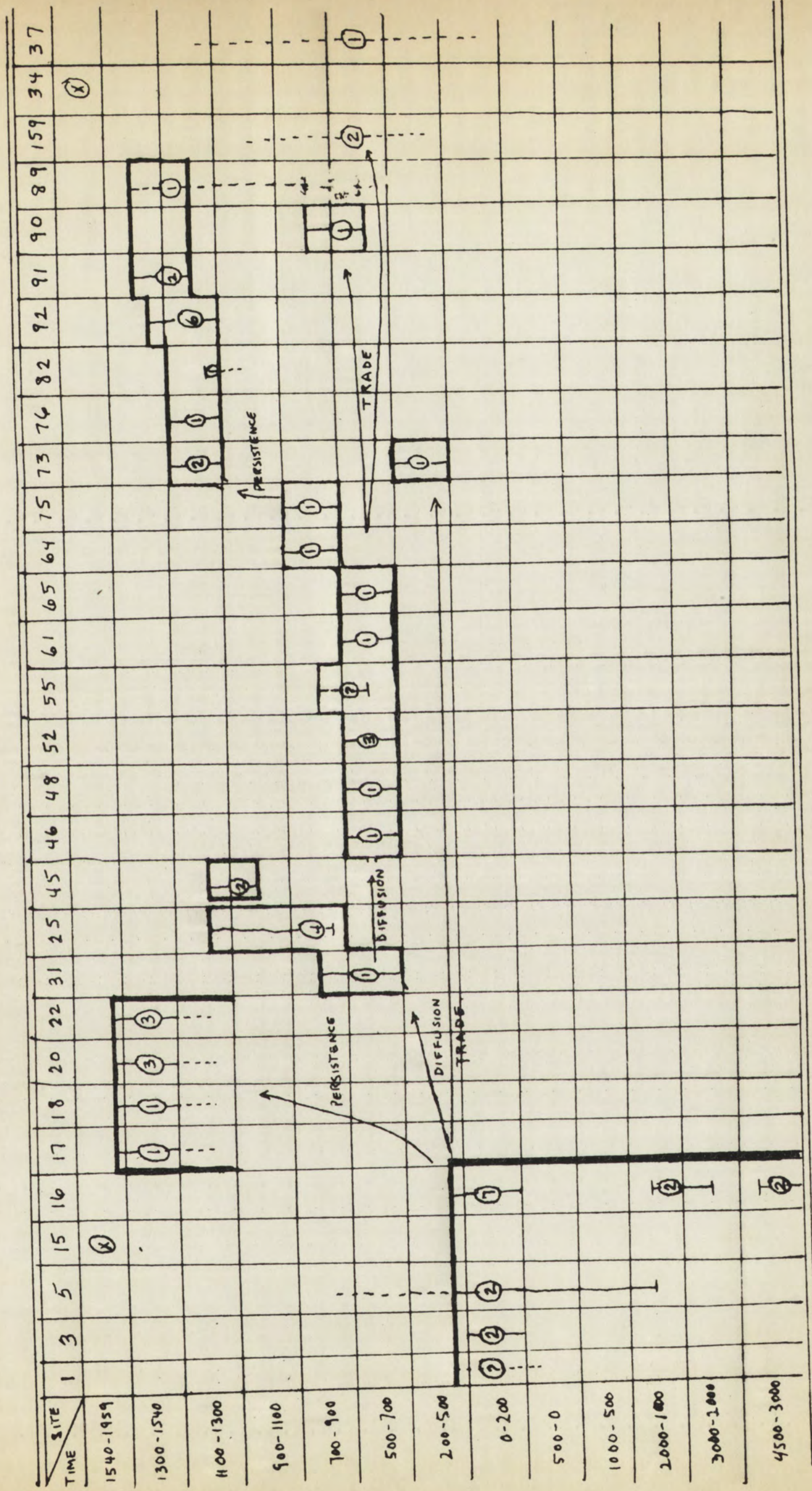


FIGURE 4
DISTRIBUTION OF ONE-ROD FOUNDATION WITH INTERLOCKED STITCH

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north at Catlow Cave, Oregon (500 B.C. to 0 A.D.), while the interlocked, encircling stitch appears with an intrusive complex at Wahluke, Washington. Danger Cave, Lovelock Cave, and possibly central California form an early block in time and space for the occurrence of the one-rod foundation, interlocked stitch technique. Within this region, two sub-variants are found; the widespread encircling stitch technique and the penetrating stitch method occurring locally at Lovelock Cave and probably traded to southern Oregon, while is a twined-ware region.

The interlocked stitch type next occurs at seven sites from Castle Park (500 A.D. to 800 A.D.) in northwestern Colorado to Canyon de Chelly in northeastern Arizona between 500 A.D. and 700 A.D. Two specimens further south in the Guadalupe mountains may date between 500 A.D. and 800 A.D. Artifacts from Castle Park are considered an early manifestation of the widespread Fremont culture which was distributed across the northern Colorado Plateau roughly between 750 A.D. and 1175 A.D. Jennings and Norbeck consider the Fremont culture a blend between the Desert culture, which includes the Humbolt Valley and Danger Cave representations, and the Anasazi culture in the Pueblo area. The Fremont sites, both early and late, showing the interlocked technique on a one-rod foundation form a spatial link between the early northwestern occurrences and the later occurrences in the Pueblo area.

In the Pueblo area the interlocked, encircling stitch on a one-rod foundation is found on one specimen between 200 A.D. and 500 A.D. at Mesa Verde; this basket probably represents an early contact with the northern basket makers. During the next two periods, 500 A.D. to 900 A.D., the technique is used in the western part of the Pueblo region along a northwest-southeast axis from Lost Canyon to Canyon de Chelly. Between

900 A.D. and 1300 A.D., it moves to the east-central section from Mesa Verde to Pueblo Bonito. During the same period as Mesa Verde or perhaps a little later, the method is found in the extreme eastern section from Gallina south to Correo.

The interlocked stitch associated with the one-rod foundation disappears between 1300 A.D. and 1400 A.D. from the Pueblo area. Its manifestation in four sites near Great Salt Lake, Utah, cannot be definitely dated. Investigators indicate that the basketry fragments are found in the top deposits, attributed to Shoshonean occupation. According to Schroeder, the Shoshonean pattern was introduced about 1150 A.D.¹ The pattern may represent "a survival of a far northern variant of the basic Basin Culture that lacked southern influences."² The baskets may also be evidence of a long-lived one-rod foundation with interlocked stitch which was first found at Danger Cave just west of Great Salt Lake. The technique exhibited by the specimens is not necessarily evidence of a direct contact with the Pueblo region, for it may represent a regional persistence of the widely diffused interlocked, encircling stitch method.

During the ethnographic period, interlocked stitches on one-rod foundations occur northwest of the Pueblo region among the Pomo and Paviotso. The method is also found among certain northern Shoshoni groups.³ Steward records a one-rod foundation among three groups of Ute just northwest (Moanuts) and northeast (Taviwatsiu and Mbwatci) of the Pueblo region. Five hundred miles northeast of the Pueblo area, the one-

¹ Wormington, A Reappraisal of the Fremont Culture, 1955, 119.

² *Ibid.*

³ Steward, Northern and Gosiute Shoshoni, 1943, 372.

900 A.D. and 1100 A.D., it moves to the east-central region from where
 Verde to Pueblo Heights. During the same period as Mesa Verde or perhaps
 a little later, the method is found in the extreme eastern section from
 Gila to Cerro.

The interlocked style associated with the one-rod foundation

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1150 A.D.¹ The pattern may represent "a survival of a far northern

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The baskets may also be evidence of a long-lived one-rod foundation with

interlocked style which was first found at Canyon Cave just west of Great

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a regional persistence of the widely diffused interlocked, enclosing

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During the ethnographic period, interlocked styles on one-

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Great Northwest (Kootenai and Nez Percé) (Tavistock and Stewart) of the

Pueblo region. Five baskets with a northwest of the Pueblo area, the one-

¹ Worthington, A. Development of the Pueblo Culture, 1922, 119.

² Ibid.

³ Steward, Northern and Southern Shoshoni, 1925, 375.

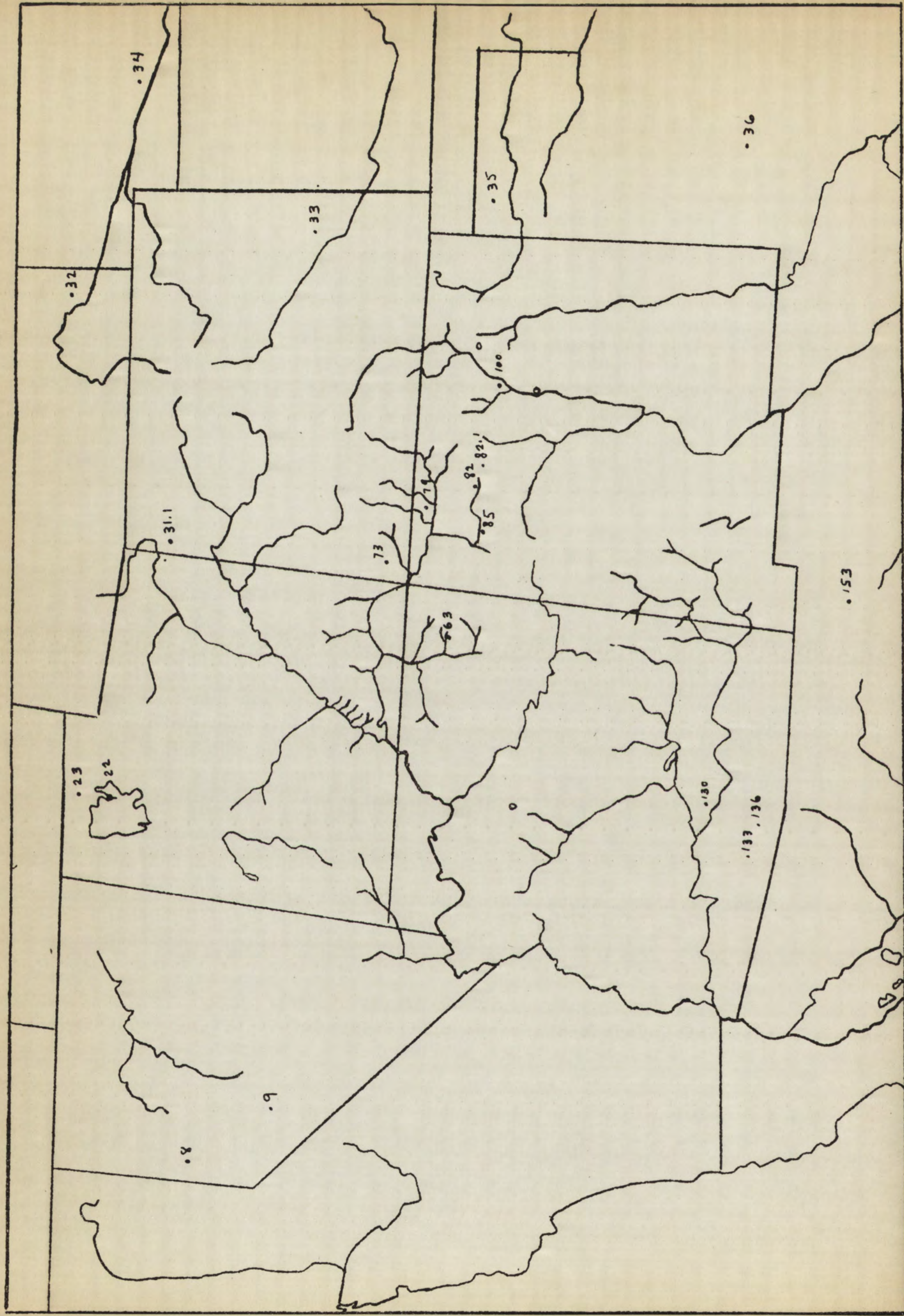
rod foundation, stitch interlocked and encircling occurs among the Pawnee. The western occurrences probably are a continuance of the archaeological technique. The Pawnee method also may be connected with the Basin-Pueblo technique, but there is not enough evidence to establish a valid relationship; hence the Pawnee technique is classified separately. In reference to stitch slant, there are only three occurrences of slant \ in association with the interlocked stitch on a one-rod foundation; one at Battle Canyon is an individual variation; another among the Paviotso possibly represents a lack of standardization; and the Pawnee type may be a standard form.

In review of what other investigators infer about the interlocked stitch, one-rod foundation, Weltfish believes it is intrusive, while Morris and Burgh believe it is indigenous in the Pueblo area. Weltfish bases her inference upon the fact that the bulk of Pueblo basketry is noninterlocked stitching and that the interlocked type occurs ethnographically north of the Pueblo region. Morris and Burgh reach the opposite conclusion because of the fact that the interlocked stitch is found on other kinds of Pueblo coiled foundations and that the interlocked stitch appears archaeologically restricted to the Pueblo region. Recent excavations show that the technique has a wide northern distribution and is found early in the Great Basin. This evidence supports Weltfish's contention that the method is intrusive into the Pueblo area. Yet its prolific occurrence deep within the Pueblo region suggests that the one-rod foundation with interlocked stitch was manufactured by weavers who shared the Pueblo culture.

At present it is not known whether the noninterlocked stitch associated with a one-rod foundation originated in one region and diffused

FIGURE 3

DISTRIBUTION OF ONE-ROD FOUNDATION WITH NONINTERLOCKED STITCH



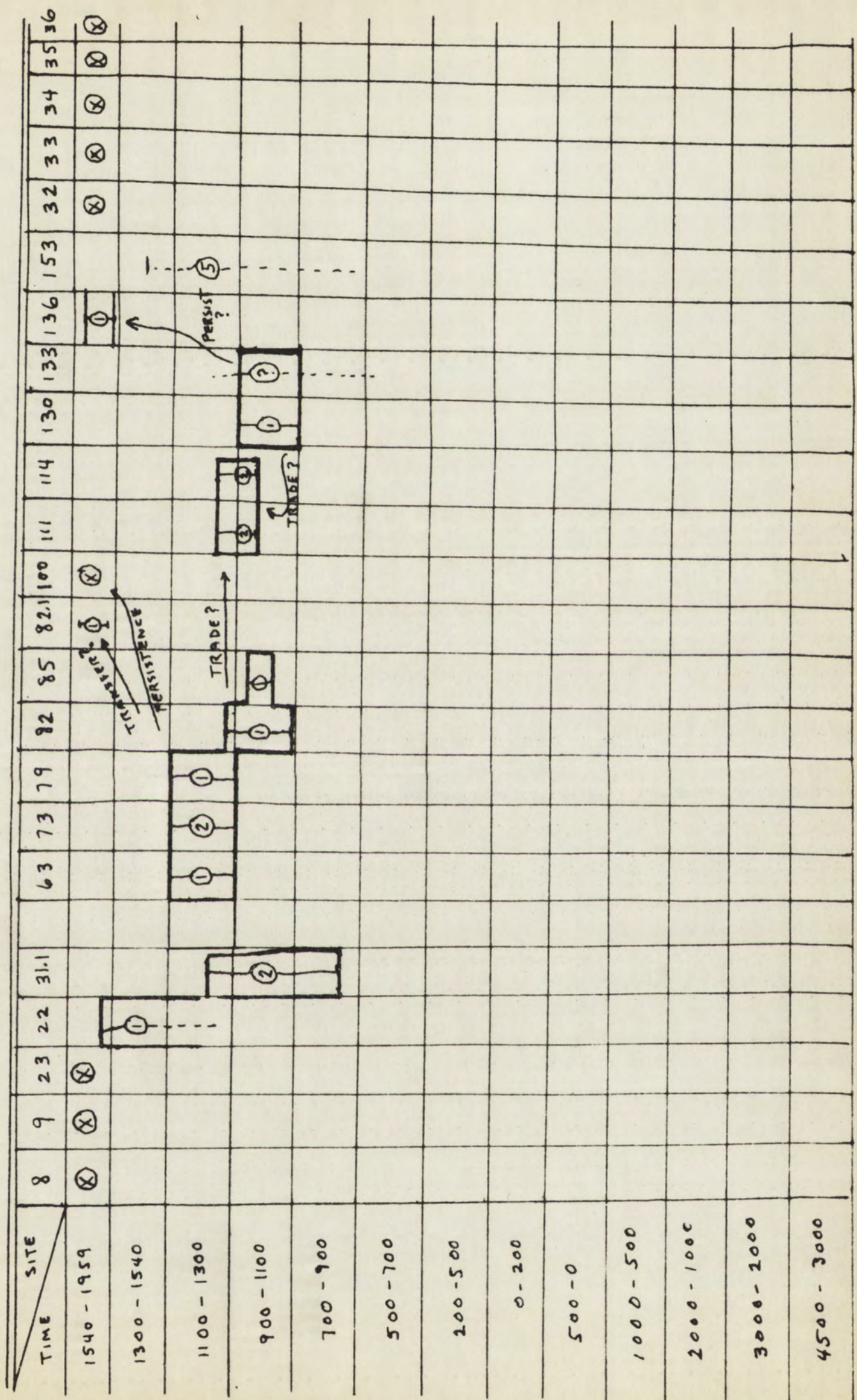


FIGURE 5
DISTRIBUTION OF ONE-ROD FOUNDATION WITH NONINTERLOCKED STITCH

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to the others or was invented in several regions. The technique may have been used independently in two regions as an alternative to the interlocked stitch on a one-rod foundation. Archaeologically, baskets of the noninterlocked stitch, one-rod type are found at nearly the same time in the eastern Great Basin-northern Colorado Plateau, southern Colorado Plateau, and middle Salt-Gila. The type occurs ethnographically in nearly the same regions, as well as in the High Plains.

In the Pueblo area, the first occurrence of the one-rod foundation with noninterlocking stitches is in Chaco Canyon. A method whereby the stitch penetrates the rod in the coil below is found at Bc 51, Chaco Canyon, between 975 A.D. and 1045 A.D. An encircling stitch technique occurs at Pueblo Bonito between 950 A.D. and 1130 A.D.

From this east-central location, the noninterlocked, encircling stitch method appears to spread outward along three lines. Between 1100 A.D. and 1300 A.D., it occurs west of the Chaco Canyon sites at Painted Cave and in the Flagstaff district at Nalakihi and Winona. McGregor considers the Winona specimen similar to one at Snaketown in the middle Salt-Gila region. The one-rod foundation with noninterlocked stitch method also occurs northwest of Pueblo Bonito at Aztec, and Mesa Verde.

The last line of distribution is in the ethnographic period, east of Pueblo Bonito at a cache on Chacra Mesa and at Zia. The technique, at Zia, was an alternate choice along with two-rod and two-rod-and-bundle-triangular foundations; these foundations were used until about 1900 A.D. The basket in the Chacra Mesa cache is attributed to Navaho manufacture. The Navaho use of the noninterlocked stitch, one-rod foundation has three

to the other side of the mountain range
have been the same. The mountain range
interests in the same way. The mountain range
of the same kind. The mountain range
also in the same way. The mountain range
Colorado Plateau. The mountain range
in nearly the same way. The mountain range
in the same way. The mountain range
location of the mountain range. The mountain range
where the mountain range. The mountain range
to the same way. The mountain range
technique of the mountain range. The mountain range
from this mountain range. The mountain range
also the same way. The mountain range
1900 A.D. and 1905. The mountain range
Puebloan and the mountain range. The mountain range
Hudsonian and the mountain range. The mountain range
middle of the mountain range. The mountain range
also the same way. The mountain range

Verde.

The first time the mountain range
east of Pueblo. The mountain range
so the mountain range. The mountain range
triangular. The mountain range
The mountain range. The mountain range
The mountain range. The mountain range

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plausible explanations. First, the Navaho could have retained the one-rod foundation from their homeland in the Mackenzie region. The Athapascan tribes in the north produce a one-rod foundation with stitch split or interlocked; the change to noninterlocked stitch could have been accomplished by the Navaho weavers without influence from other people. Second, the Navaho could have adopted the one-rod technique anywhere across the Great Basin, northern Colorado Plateau, or High Plains. Third, they could have borrowed the technique from the Zia, other historic period pueblos, or earlier occupants in the Pueblo area.

In summary, the one-rod foundation has a wide distribution in the Greater Southwest. Such a distribution may represent a spatial scattering of one basket making tradition with regional variations occurring on the basis of stitch manipulation. The interlocked stitch technique probably was introduced into the Pueblo region from the north. Later the noninterlocked stitch method developed in the Pueblo area as an alternate way of manipulating the stitch on a one-rod foundation. As judged by the evidence, the noninterlocked technique replaced the interlocked weave during the ethnographic period; the former then became extinct in the early part of the nineteen-hundreds in the Pueblo area.

4. Half-rod Foundation

The half-rod foundation with interlocked and encircling stitch first occurs at Danger Cave between 4500 B.C. and 3500 B.C. The foundation appears to be an alternate technique to the interlocked stitch, one-rod foundation.

plausible explanations. First, the Navaho could have retained the one-red foundation from their homeland in the Montezuma region. The Navaho tribes in the north produce a one-red foundation with slight variations; the change to noninterlocking sites could have been accomplished by the Navaho weavers without falling into their traps. Second, the Navaho could have adopted the one-red technique anywhere across the Great Basin, northern Colorado Plateau, or High Plains. Third, they could have borrowed the technique from the IIA, other historic period peoples, or earlier occupants in the Pueblo area.

In summary, the one-red foundation has a wide distribution in the Greater Southwest. Such a distribution may represent a general scattering of one-handed making tradition with regional variations occurring on the basis of ethnic manipulation. The interlocking sites technique probably was introduced into the Pueblo region from the north. Later the noninterlocking sites method developed in the Pueblo area as an alternate way of manipulating the sites on a one-red foundation. As judged by the evidence, the noninterlocking technique replaced the interlocking weave during the ethnographic period; the former then became extinct in the early part of the nineteenth-century in the Pueblo area.

4. Half-red foundation

The half-red foundation with interlocking and enclosing sites first occurs at Dugway Cave between 1500 B.C. and 1000 B.C. The foundation appears to be an alternate technique to the interlocking sites one-red foundation.

Durango, in the northeastern part of the Pueblo area, is the next site manifesting the half-rod foundation, stitch interlocked-encircling type. It is difficult to determine the origin of this specimen since the area intermediate to Danger Cave does not have evidence of the type at such an early date, 46 A.D. to 330 A.D.

The half-rod foundation, stitch interlocked-encircling next occurs at Castle Park in northwestern Colorado between 500 A.D. and 800 A.D. It also is found at the Turner Look site in east-central Utah. Both sites are manifestations of the Fremont culture. One specimen at Promontory Caves can not be dated except for a general time span of 1150 A.D. to the beginning of the ethnographic period; this basket could be a relic from an earlier period.

5. Bundle Foundation

The bundle foundation of grass, yucca, or small twigs is similar to the one-rod foundation in that the bundle acts as an indivisible unit.

Descriptive bundle foundation types are distributed in the southern part of the Greater Southwest from Southern California across Arizona, New Mexico, and southwestern Texas. In the southern part of this area, a variety of stitch forms are found; often several different stitches occur at the same site and occasionally in the same basket.

Stitch slant \ is dominant on a bundle foundation in southern California whereas stitch slant / is encountered north through central Arizona into the Pueblo region. Stitch slant / and \ are found sporadically

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Drum, in the northwestern part of the state.

next also manifesting the half-rod character, the half-rod character is also manifesting type. It is difficult to see any difference between the two types.

man alone the two types are not different. It is difficult to see any difference between the two types. The type is not an early type, but a late type.

The half-rod character, which is also manifesting type, is also manifesting type. It is difficult to see any difference between the two types.

occurs at Castle Park in northwestern Arizona. It is also manifesting type. It is difficult to see any difference between the two types.

Both also are manifesting type. It is difficult to see any difference between the two types. Promontory Caves can not be dated except for a general time of about 1150 A.D. to the beginning of the archaeological period.

be a relic from an earlier period. It is difficult to see any difference between the two types.

2. Small Foundations

The small foundations of small houses, which are also manifesting type, are also manifesting type. It is difficult to see any difference between the two types.

smaller to the one-rod foundation in that the small foundations are also manifesting type. It is difficult to see any difference between the two types.

Descriptive small foundations, which are also manifesting type, are also manifesting type. It is difficult to see any difference between the two types.

southern part of the greater Southwest from Sonora, Mexico, to Arizona, New Mexico, and southwestern Texas. In the Arizona part of this area, a variety of other forms are found, which are also manifesting type.

stitches occur at the same site and are also manifesting type. It is difficult to see any difference between the two types.

stitches occur at the same site and are also manifesting type. It is difficult to see any difference between the two types.

stitches occur at the same site and are also manifesting type. It is difficult to see any difference between the two types.

from Ventana Cave to a site near Seminole, Texas; the slant / generally predominates. Figure 6 depicts the distribution of the bundle foundation with the various types of stitches.

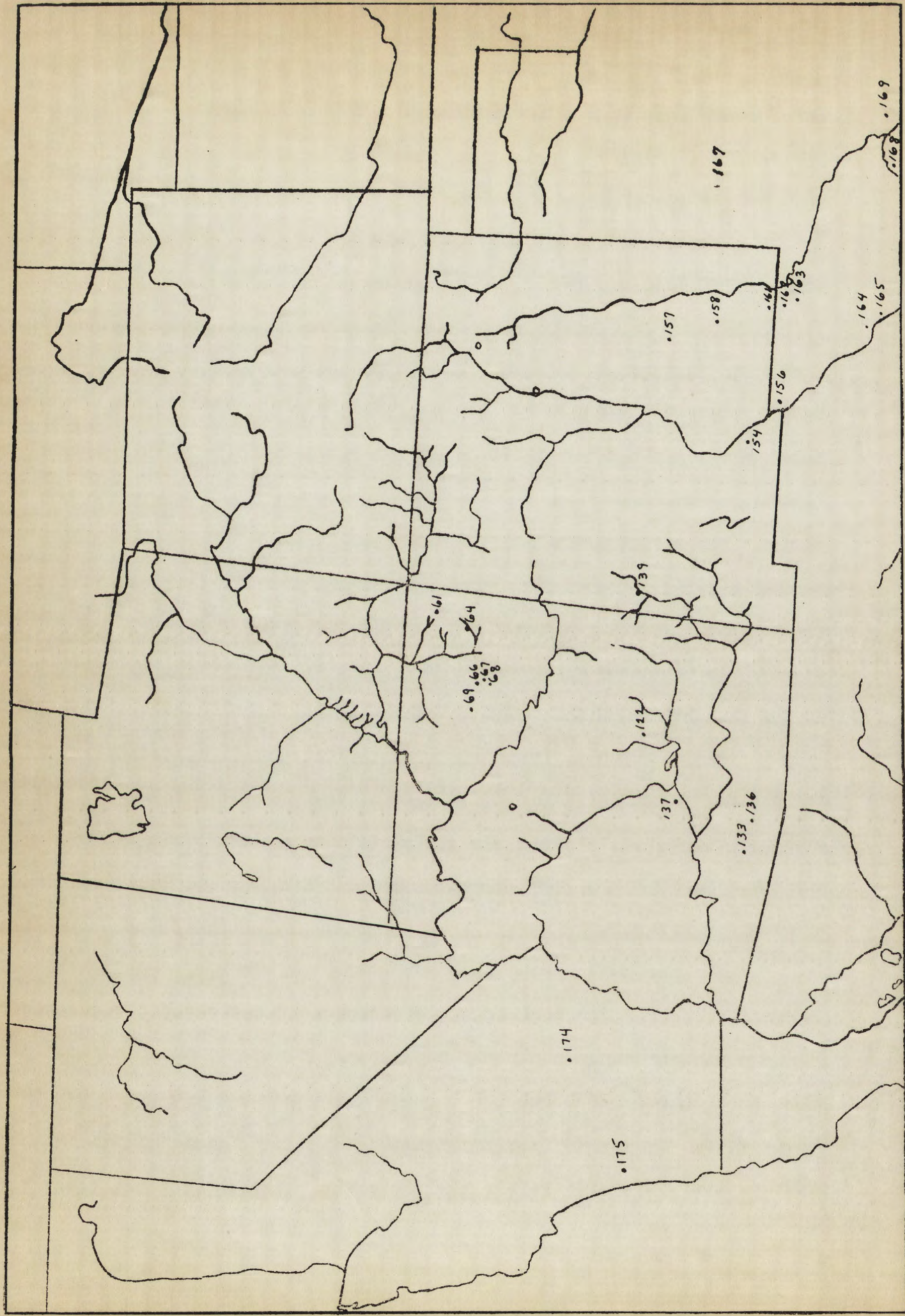
Ventana Cave shows the first evidence of the noninterlocked stitch between 2000 B.C. and 1000 B.C. It appears to be one of the permissible techniques used on a bundle foundation; split and interlocked stitches also occur together on baskets. At an indeterminate early period the bundle foundation was used in the Trans-Pecos region from the Hueco mountains to the juncture of the Pecos and Rio Grande Rivers. A few bundle foundations also are found in caves along the Guadalupe mountains of New Mexico. The stitch manipulation in the Trans-Pecos-Guadalupe area is variable; split stitches tend to be used in the west and interlocked ones in the east. As with Ventana Cave, noninterlocked stitches are a minor permissible technique which occurs throughout the area, often appearing in the same baskets with the other stitch methods.

Noninterlocked, interlocked, and split stitches on bundle foundations are found during all periods of Ventana Cave history. In the ethnographic period, however, the Papago tend to use the noninterlocked variant. In the Trans-Pecos-Guadalupe area, evidence of basketry ends after about 1400 A.D.

In the Pueblo area, between 500 A.D. and 700 A.D., two bundle-foundation baskets with noninterlocked stitches (/) are found at Prayer Rock and another occurs at Canyon del Muerto. The basket at the latter site has a false-braided rim tip; a technique considered diagnostic of the Pueblo area. The bundle foundation method, therefore, seems to have diffused into the Pueblo region from the south. Whether this idea came

FIGURE 6

DISTRIBUTION OF BUNDLE FOUNDATION



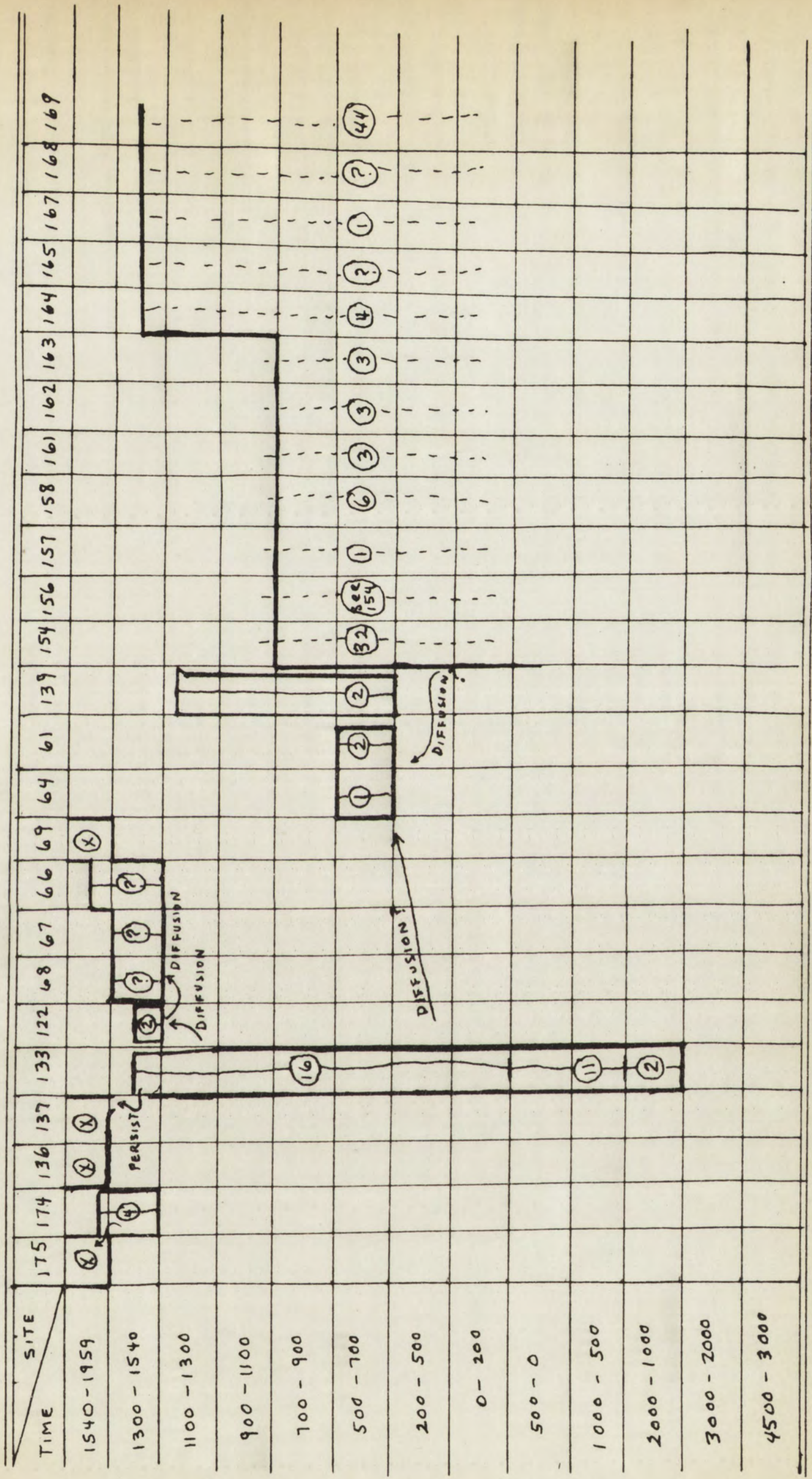


FIGURE 6
DISTRIBUTION OF BUNDLE FOUNDATION

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from Ventana Cave or the Trans-Pecos area is not known. The bundle foundation as a coiling technique did not become popular right away in the Pueblo area for no specimens representing the method are evident in the region between 700 A.D. and 1300 A.D.

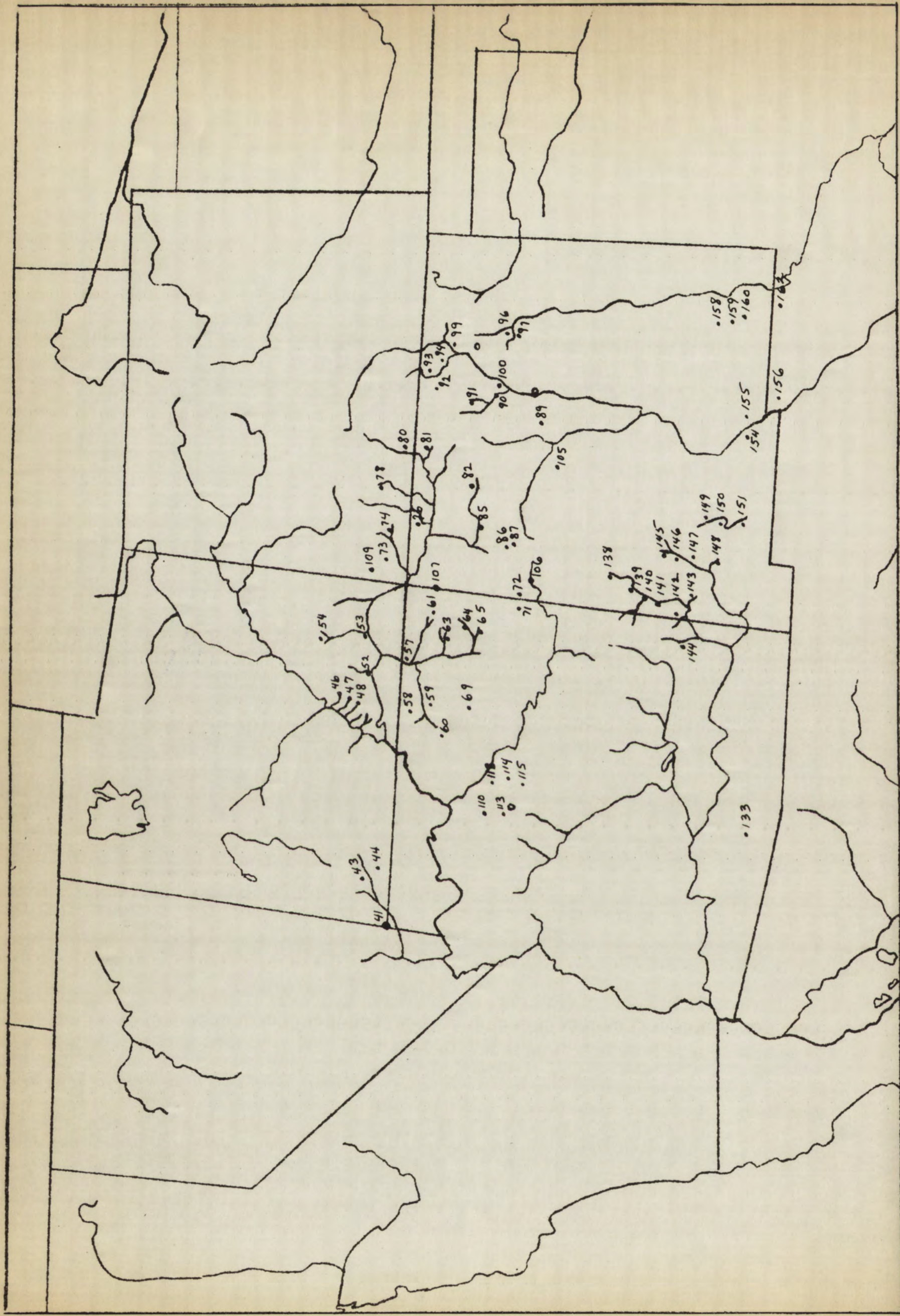
A second diffusion of the bundle foundation technique into the Pueblo area from the south is indicated. The people of Sierra Ancha (1300 A.D. to 1400 A.D.), intermediate geographically, manufactured a bundle foundation. Northeast, during the same time and a little later, are the Jeddito Wash, Sikyatki, and Awatobi ruins all showing evidence of the bundle foundation method which is similar to the noninterlocking stitch (/) type found today at Second Mesa, Hopi.

6. Two-rod-and-bundle-triangular Foundation

Technically the two-rod-and-bundle-triangular foundation is more complex than the one-rod or bundle foundations; two rods placed side by side and a bundle set on top create a triangular form.

Various stitch types are found from southern Utah to western Texas. The noninterlocked stitch is dominant in the Pueblo area and extends west to Flagstaff, DuPont Cave, and Coville Rockshelter. To the south the type is found along the San Francisco, Upper Gila, and Mimbres Rivers. Noninterlocked, split, and interlocked stitch types occur at Ventana Cave and in the Hueco and Guadalupe regions. A few interlocked specimens also are evident in the Pueblo region. Figure 7 shows the distribution of two-rod-and-bundle triangular foundation.

FIGURE 7
DISTRIBUTION OF TWO-ROD-AND-BUNDLE-TRIANGULAR FOUNDATION



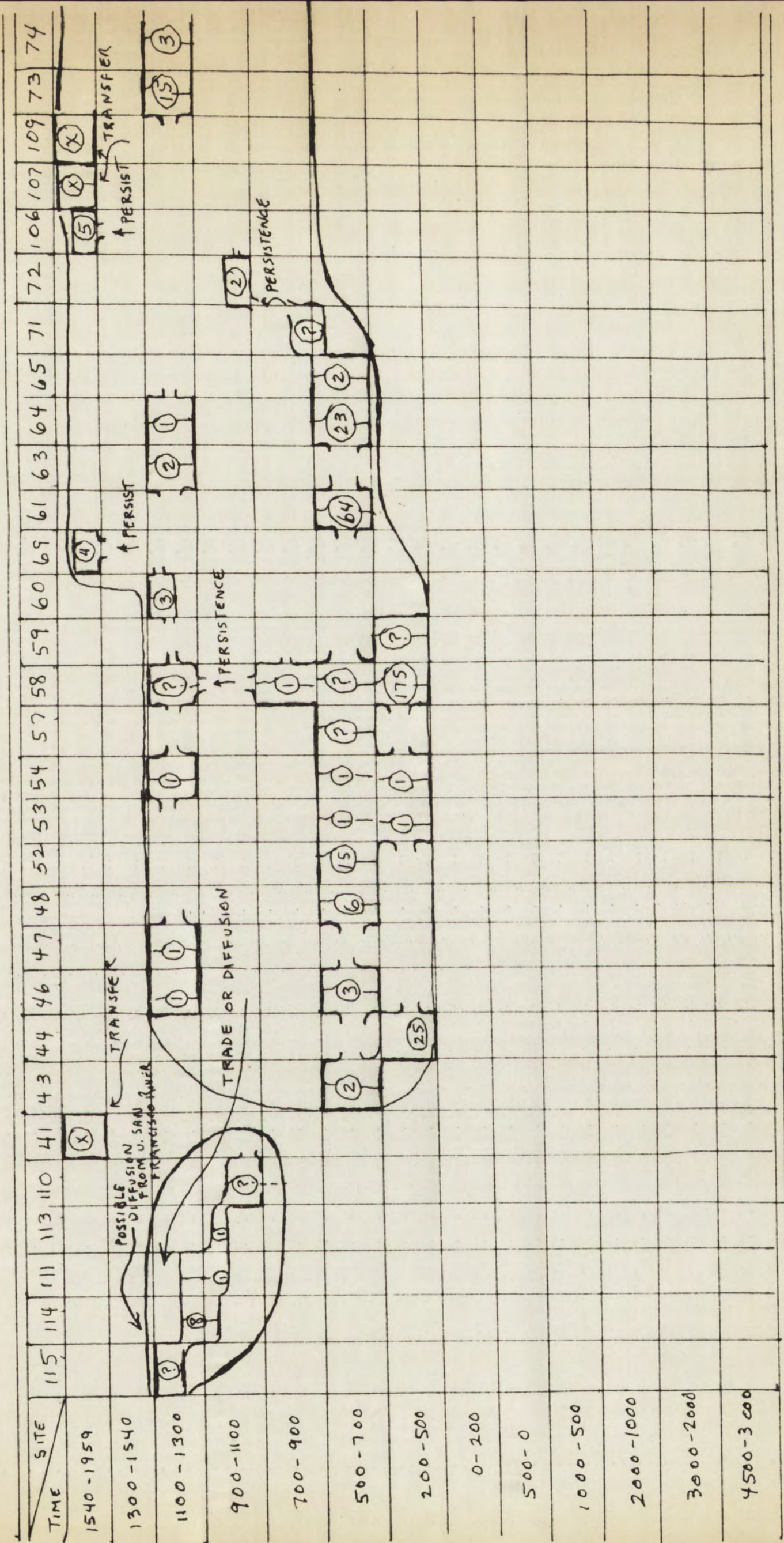


FIGURE 7
DISTRIBUTION OF TWO-ROD-AND-BUNDLE-TRIANGULAR FOUNDATION

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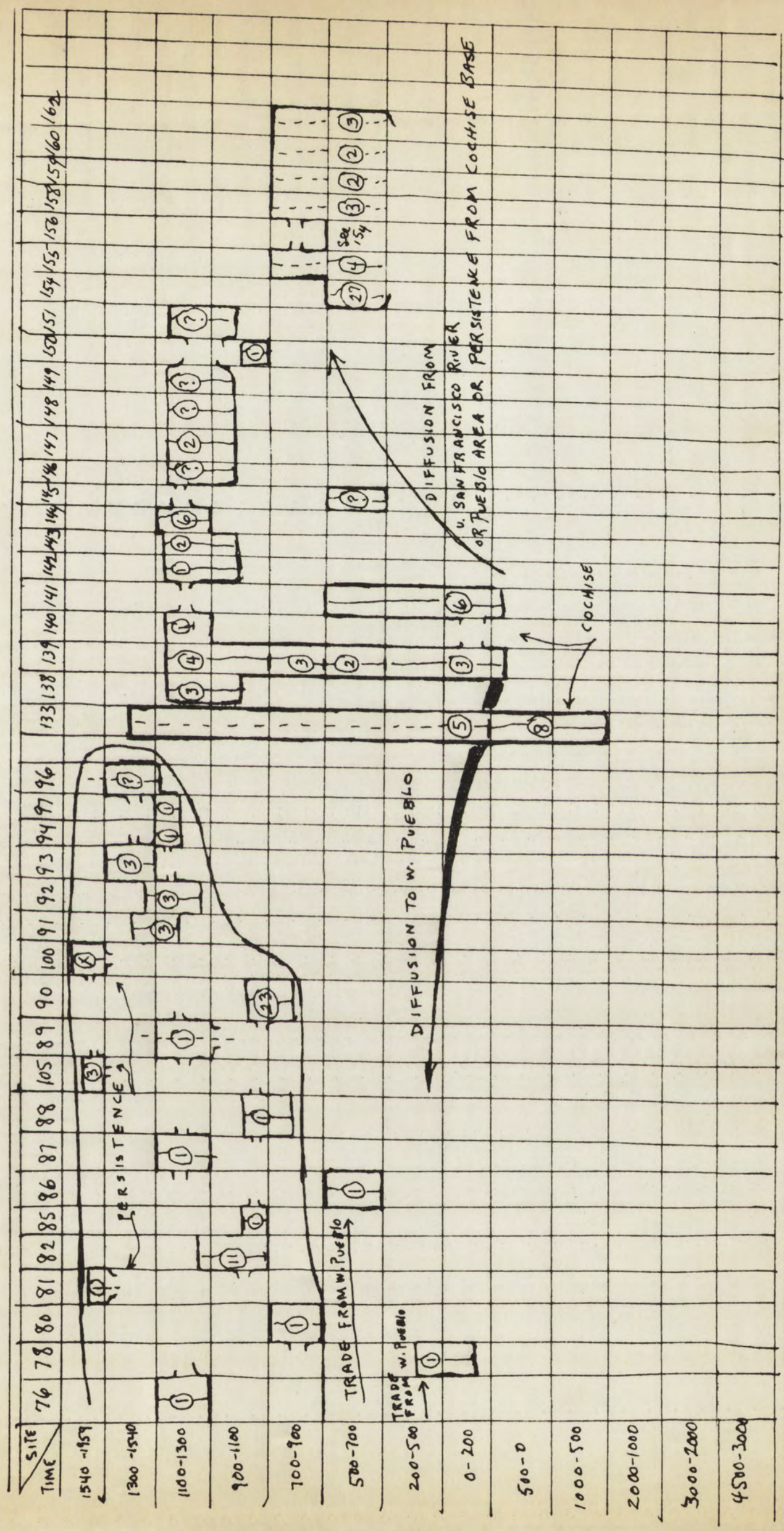


FIGURE 7
DISTRIBUTION OF TWO-ROD-AND-BUNDLE-TRIANGULAR FOUNDATION

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Ventana Cave, again, has the first indications of a technique which later appears in the Pueblo area. Isolated to the southwest of the main occurrence of the two-rod-and-bundle-triangular foundation, Ventana Cave shows that the method was used as early as 2500 B.C.-2000 B.C. in the southern part of the Southwest. Although the technique is absent in the next level at Ventana, it is quantitatively important in the San Pedro layer. This layer is dated by Bryan from 1000 B.C. to 1 A.D. As if to support a southern invention of the technique, Tularosa Cave is the next location at which the two-rod-and-bundle-triangular foundation appears (300 B.C. to 150 B.C.) Cordova Cave, just south of Tularosa Cave, adopted the method after 150 B.C. An early block in space and time, therefore, exists south of the Pueblo region for the two-rod-and-bundle-triangular foundation, stitch noninterlocked and slant /.

The process responsible for the appearance of the technique in the Pueblo region is unknown. Tentative inferences must deal with the fragment at Ventana Cave which is assigned to the Ventana-Amargosa I pattern. Amargosa is a complex aligned west of Ventana Cave. During the San Pedro Stage, however, the technique becomes quantitatively important at Ventana and Tularosa Caves. The San Pedro Stage is assigned to the Cochise complex which is an early-man gathering culture centering in southeastern Arizona, southwestern New Mexico, and probably extending north to central New Mexico.

On the basis of the above relationships, it would seem probable that the two-rod-and-bundle-triangular foundation with noninterlocked stitch is characteristic first of the Cochise culture. Just how far north people carried the Cochise complex is subject to conjecture, but

1. Introduction

2. The study area

3. The study area

4. The study area

5. The study area

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it is not improbable that these people were the ones who introduced the technique into the Pueblo area.

In the Pueblo region the earliest evidence of the technique is at Durango between 46 A.D. and 260 A.D. Since the last sixty years overlap in time with the more common occurrence of the method in the western part of the San Juan drainage (200 A.D. to 500 A.D.), the method may have occurred in the latter sector first.

Just west of the Pueblo region, the technique is found at DuPont Cave, 216 A.D. To the south, it continues in the San Francisco River region. To the southwest, four fragments which show the technique are found at Ventana Cave dating between 1 A.D. and 1400 A.D. If the type was made at Ventana, these fragments may represent an early A.D. continuance. But if the specimens represent trade objects from the north, they may date 800 A.D. to 1400 A.D.; it is the latter time interval during which, Haury believes, most of the basketry specimens of level 1 belong.

Between 500 A.D. and 700 A.D. the type has the widest geographic spread. In the western Pueblo sector this two-rod-and-bundle-triangular technique expands east from Kayenta to Canyon del Muerto and in the northern part from Butler Wash to the Colorado River. In the eastern section a fragment manifesting the technique may represent a trade basket from the more productive western zone.

With the abandonment of DuPont Cave, just outside of the Pueblo area, the type shifts to nearby Zion; the two baskets may represent a persistence of this method in southwestern Utah or trade baskets from the Pueblo region. To the south, the technique continues in the San

It is not improbable that these people were the ones who introduced the technique into the Pueblo area.

In the Pueblo region the earliest evidence of the technique is at Durango between 10 A.D. and 250 A.D. Since the last fifty years overlap in time with the more common occurrence of the method in the western part of the San Juan drainage (200 A.D. to 500 A.D.), the method may have occurred in the latter section first.

Just west of the Pueblo region, the technique is found at Durango Cave, 210 A.D. To the south, its continuance in the San Juan River region. To the southeast, four fragments which show the technique are found at Ventana Cave dating between 1 A.D. and 1500 A.D. If the type was made at Ventana, these fragments may represent an early A.D. continuance. But if the specimens represent crude objects from the north, they may date 800 A.D. to 1500 A.D.; it is the latter time interval during which, many believe, most of the basketry specimens of level I belong.

Between 500 A.D. and 700 A.D. the type has the widest geographic spread. In the western Pueblo sector this two-rod-and-handle triangular technique expands east from Navajo to Canyon del Muerto and in the northern part from Salt Lake to the Colorado River. In the eastern section a fragment manifesting the technique may represent a trade basket from the more productive western zone.

With the abandonment of Durango Cave, just outside of the Pueblo area, the type shifts to nearby Elton; the two baskets may represent a persistence of this method in southwestern Utah or trade baskets from the Pueblo region. To the south, the technique continues in the San

Francisco River region and near Las Cruces. The technique also occurs in the Hueco and Guadalupe mountains.

Lack of information for the next period, 700 A.D. to 900 A.D., creates the illusion that the technique is reduced. Yet basketry fragments of this type appear at Kayenta in the west and Piedra in the east. Near Zia, specimens with noninterlocked stitch occurs during late Pueblo I or early Pueblo II. Another specimen, without stitch information, is found on the Cebolleta Mesa, also between late Pueblo I and early Pueblo II. The only evidence that the technique in question persists outside of the Pueblo area is at Tularosa Cave.

Between 900 A.D. and 1100 A.D., the two-rod-and-bundle-triangular foundation method continues at Tularosa Cave, spreading southeast to reappear along the San Francisco, Upper Gila, and Mimbres Rivers. Northeast, the same technique is distributed around the base of the Flagstaff peaks at Winona, Medicine Cave, and in the Cohonino complex. Because in this part of Arizona people from the Mogollon and Pueblo regions intermingled, it is difficult to determine from which area the two-rod-and-bundle method is derived.

In the eastern part of the Pueblo domain, this method of constructing coiled baskets is distributed from the Zuni district northeast through Pueblo Bonito and over to the Gallina area.

Recurring in the western Pueblo region between 1100 A.D. and 1300 A.D., the method is found in the Kayenta district, along the Chinlee Wash, and up along the Colorado River in Utah. At this time, the east-central occurrences swing north from Zuni-Bonito to Mesa Verde, Johnson Canyon, and Aztec. In the east, the technique expands into the

Francisco River region and near Las Cruces. The technique also occurs in the Hualco and Guadalupe mountains.

Lack of information for the next period, 1000 A.D. to 900 A.D., crosses the line that the technique is required. For example, the results of this type appear at Laguna in the west and Rio Grande in the east. Near Elia, specimens with noncharacteristic styles occur during late Pueblo I or early Pueblo II. Another specimen, without additional information, is found on the Gabillos mesa, also between late Pueblo I and early Pueblo II. The only evidence that the technique is present during this period

of the Pueblo area is at Tularosa Cave. Between 900 A.D. and 1100 A.D., the two-red-and-black-triangular

foundation method continues at Tularosa Cave, spreading southeast to respect along the San Francisco, Upper Elia, and Mimbres Rivers. North-east, the same technique is distributed around the base of the Pajarito peaks at Window, Medicine Cave, and in the Chaco Canyon. Because in this part of Arizona people from the Hopi and Pueblo regions intermingled, it is difficult to determine from which area the two-red-and-black method is derived.

In the eastern part of the Pueblo domain, this method of construction called baskets is distributed from the San Juan district northeast through Pueblo Bonito and over to the Gila River.

Occurring in the western Pueblo region between 1100 A.D. and 1300 A.D., the method is found in the Yavapai district, along the Gila River, and up along the Colorado River in Utah. At this time, the east-central occurrence swing north from Santa-Bonita to Mesa Verde, Johnson Canyon, and Aztec. In the east, the technique spreads into the

Chama valley, Jemez Cave, and across the Rio Grande to Fork Lightning Ruin near Pecos.

The evolution of the two-rod-and-bundle-triangular foundation is portrayed by Morris and Burgh with the aid of a comparative list of Basket Maker III and Pueblo III basket traits. The trend is toward refinement and uniform stitch work. Basket Maker III weavers produce a coarse textured basket with stitches spaced apart and occasionally split; the nonwork surface is rough. On the other hand, Pueblo III weavers place their stitches close together, rarely split them, and are careful to keep roughness to a minimum.

Quantitatively, the technique is not as important in Pueblo III as it is in Basket Maker III or II. Sixty-four specimens are recorded for Pueblo III, 144 for Basket Maker III, and 281 for Basket Maker II. It should also be remembered that Basket Maker sites, with two exceptions, are concentrated in the western part of the Pueblo area. Pueblo III sites appear scattered across the domain.

To the south, the technique is abandoned in the San Francisco-Upper Gila-Mimbres area by 1275 A.D. This is coincident with the withdrawal of the Mogollon people from the region. The method, from this time on, is not found south of the Pueblo area. In the Flagstaff region the two-rod-and-bundle-triangular foundation method continues among the Sinagua.

Three hundred miles west of Flagstaff, between 1450 A.D. and 1750 A.D., seven basket fragments of the two-rod-and-bundle-triangular method are found at Coville Rock Shelter in California. Since the bundle material is Joshua tree fiber, native to the locality, Meighan hypothesizes

Grass Valley, Jones Cave, and across the Rio Grande to Fort Huachuca.
 Rain near Pecos.

The evolution of the two-rod-and-bundle triangular foundation
 is portrayed by Huxley and Huxley with the aid of a comparative list of
 Basket Maker III and Pueblo III basket finds. The trend is toward
 refinement and uniformity in work. Basket Maker III weavers produce a
 coarse textured basket with stitches spaced apart not occasionally with
 the smooth surface is rough. On the other hand, Pueblo III weavers place
 their stitches close together, rarely split them, and are careful to keep
 roughness to a minimum.

Quantitatively, the technique is not as important in Pueblo III
 as it is in Basket Maker III or II. Sixty-four specimens are recorded for
 Pueblo III, 144 for Basket Maker III, and 261 for Basket Maker II. It
 should also be remembered that Basket Maker sites, with two exceptions,
 are concentrated in the western part of the Pueblo area. Pueblo III
 sites appear scattered across the domain.

To the north, the technique is abandoned in the San Francisco-
 Upper Gila-Mohave area by 1275 A.D. This is coincident with the aban-
 donment of the Hohokam people from the region. The method, from this
 time on, is not found south of the Pueblo area. In the Flagstaff region
 the two-rod-and-bundle triangular foundation method continues among the
 Sinagua.

Three hundred miles west of Flagstaff, between 1450 A.D. and
 1750 A.D., never basket fragments of the two-rod-and-bundle-triangular
 method are found at Goshute Rock Shelter in California. Since the bundle
 material is Joshua tree fiber, native to the locality, Huxley hypothesized

that the occupants of the shelter made the baskets after receiving the idea of the method from the Southwest.⁴

Between 1300 A.D. and 1540 A.D., two other sites show evidence of the technique, both sites being located in the eastern part of the Pueblo domain. One is in the Chama Valley; the other is Pecos Pueblo, which was occupied from 1299 or 1348 A.D. to 1612 A.D.

During the ethnographic period, in the area between Chama and Pecos, a few weavers continue the coiling technique until the early part of the nineteen-hundreds. The pueblos represented are Zia, Santa Ana, and possibly San Felipe and Acoma. A man at Zia used the technique as late as 1939. At Nambe, a Tewa-speaking pueblo, a shallow bowl is of interest because it is constructed with a stitch slant up to the left. Ellis states that the exact place of origin is unknown and although it resembles the Keresan type, the "yucca leaf bundle appears to represent a different species from that used in the Middle Rio Grande."⁵ The stitch slant \ probably is an individual variation, for only a few specimens of the two-rod-and-bundle-triangular foundation in any region of the Southwest show such a slant; these aberrant baskets generally come from southern Arizona and New Mexico.

Around 1540, a two-rod-and-bundle-triangular fragment is found west of Chama in Canyon Frances.

The same technique which occurs in the Keresan area stretches west from Acoma to Zuni and Hopi. Seven baskets at Zuni and four at Hopi

⁴ Conille Rock Shelter, 1953, 171-223.

⁵ Ellis and Walpole, op.cit., 190.

that the occupants of the shelter made the baskets after receiving the idea of the method from the Southwest.⁴

Between 1300 A.D. and 1500 A.D., two other sites show evidence

of the technique, both sites being located in the eastern part of the Pueblo domain. One is in the Chama Valley; the other is near Pueblo.

which was occupied from 1250 or 1300 A.D. to 1500 A.D.

During the ethnographic period, in the area between Chama and

Pueblo, a few weavers continue the cording technique until the early part

of the nineteenth-century. The baskets represented are San Felipe and

and possibly San Felipe and Acuna. A man at San Felipe made the technique as

late as 1930. At Acuna, a few-speaking people, a similar bowl is of

interest because it is constructed with a stick about 1/2 inch up to the top.

Ellis states that the exact place of origin is unknown and although it

resembles the Keresan type, the "Yuma" basket appears to represent

a different species from that used in the Middle Rio Grande.⁵ The

stick about 1/2 inch / probably is an individual variation, for only a few speci-

mens of the two-rod-and-bundle-fragment foundation in any region of the

Southwest show such a stick; these specimens baskets generally come from

southern Arizona and New Mexico.

Around 1500, a two-rod-and-bundle-fragment fragment is found

west of Chama in Canyon Francisco.

The same technique which occurs in the Keresan area elsewhere

west from Acuna to East and Hopi. Seven baskets at East and Hopi

are made of the same material.

⁴ Conilla Rock Shelter, 1937, 171-172.

⁵ Ellis and Whipple, op. cit., 190.

were found during the late eighteen-hundreds by Stevenson and other field collectors. These baskets may represent local manufactures or trade items from the Rio Grande. If no Pueblo IV sites in the west manifest the type, one may guess that the baskets were traded to Zuni and Hopi.

In the early ethnographic or late archaeological period, Navaho basket weavers adopted the technique and continued manufacturing baskets until at least 1940. However, because of certain restrictions surrounding basket making, the women more and more came to rely upon other tribes to make their baskets. These tribes are the southern Paiute who produce a two-rod-and-bundle-triangular foundation as well as a three-rod-triangular one; the Ute who make the same two types; and the Jicarilla and possibly Havasupai, both of whom substitute the three-rod-triangular foundation for the usual type made by the Navaho. The Jicarilla also use a five-rod-bunched foundation. The Ute and Jicarilla tend to split their stitches, although all of the tribes mentioned above make the noninterlocked stitch type.

7. Three-rod-triangular Foundation

The three-rod-triangular foundation structurally is similar to the two-rod-and-bundle-triangular foundation; the former has a rod, the latter a bundle placed on top of two horizontal rods.

Stitch manipulations of various kinds are distributed across central California and down the Great Basin into the Southwest. Split stitch types are found in central California and along the western part of the Great Basin. Ventana Cave, Winona, and Zuni also have fragments

were found during the late eighteenth-century by Stevenson and other field collectors. These baskets may represent local manufactures or trade items from the Rio Grande. If no Pueblo IV sites in the west produced the type, one may guess that the baskets were traded to them and Hopi. In the early ethnographic or late archaeological period, Navaho baskets were made by the technique and construction resembling baskets made at least 1800. However, because of certain restrictions surrounding basket making, the women were not free to copy upon other tribes to make their baskets. These tribes are the southern Paiute who produce a two-rod-and-bundle-triangular foundation as well as a three-rod-triangular one; the Ute who make the same two types; and the Shoshone and possibly Havasupai, both of whom substitute the three-rod-triangular foundation for the usual type made by the Navaho. The Shoshone also use a five-rod-bunched foundation. The Ute and Shoshone tend to split their sticks, although all of the tribes mentioned above make the noninterlocked stick type.

The three-rod-triangular foundation is similar to the two-rod-and-bundle-triangular foundation; the former has a rod, the latter a bundle placed on top of two horizontal rods.

Stick manipulations of various kinds are distributed across central California and down the Great Basin into the Southwest. Split stick types are found in central California and along the western part of the Great Basin. Yontac Cave, Mono, and Kani also have fragments

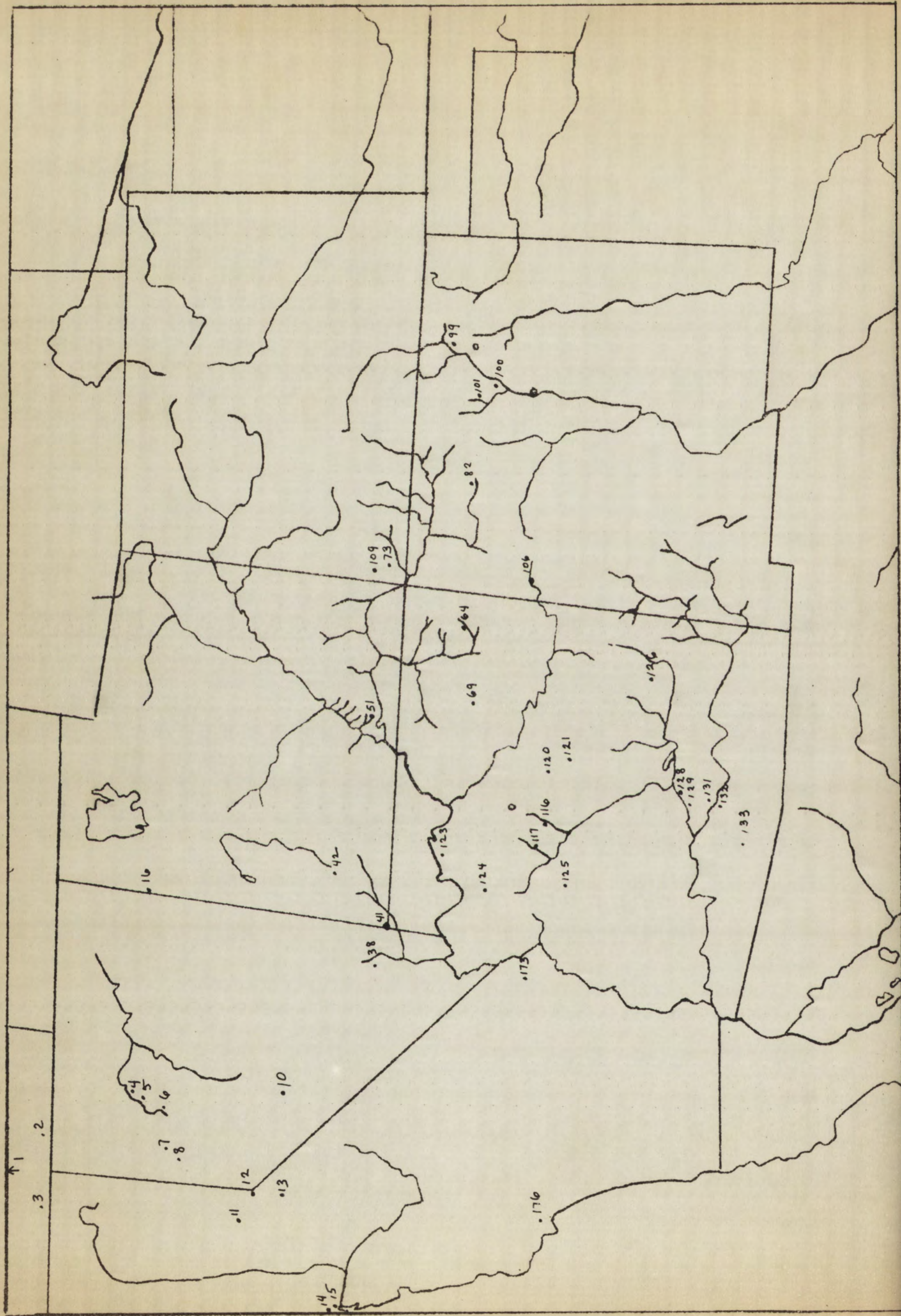
of basketry showing split stitches. Interlocked stitch types, likewise, are located through central California and into the Great Basin. One specimen appears at Mesa Verde. Noninterlocked stitch types are distributed in the Southwest, occurring sporadically in the Great Basin and central California. Figure 8 outlines the distribution of the stitch variants on a three-rod-triangular foundation.

The earliest evidence of a three-rod-triangular foundation with a noninterlocked stitch is at Danger Cave between 500 B.C. and 250 A.D.; the stitch penetrates the top rod in the coil below the work coil. Twenty-two basket fragments of the same period at Danger Cave have similar foundations, but the stitches interlock and penetrate the top rod below; this technique is evidenced at Danger Cave, dating back to 4500 B.C.

In the Humbolt Valley and possibly in the archaeological horizons of central California, an interlocked stitch is used on a three-rod-triangular foundation. A long history may be indicated for this technique, from 2000 B.C. or 1500 B.C. into the ethnographic period. A split stitch which penetrates the top rod also is evident in the Humbolt Valley and probably extends throughout the Lake Lahontan area. The foundation with the split stitch apparently dates from 1500 B.C. and continues into the ethnographic period. Since this technique is dominant at Lovelock and Humbolt Caves, Baumhoff and Heizer postulate that the other method, the interlocked stitch type, which is finer woven and appears in the construction of bowls, is intrusive from central California.

The more widely distributed split stitch method of the western Great Basin also occurs at Ventana Cave between 2000 B.C. and 1000 B.D.; several fragments date between 1 A.D. and 1400 A.D. In this Southwest

FIGURE 8
DISTRIBUTION OF THREE-ROD-TRIANGULAR FOUNDATION



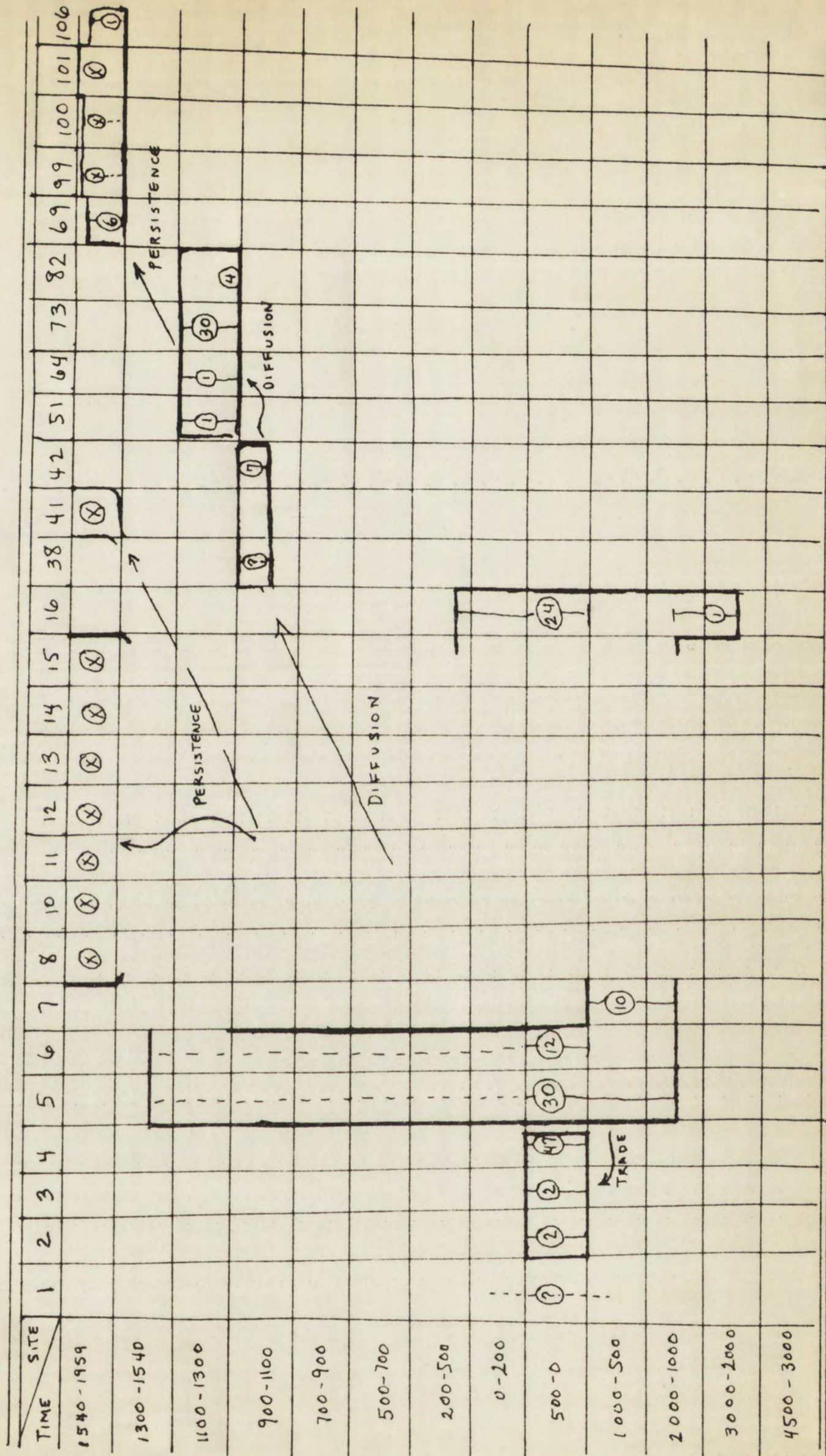


FIGURE 8

DISTRIBUTION OF THREE-ROD-TRIANGULAR FOUNDATION

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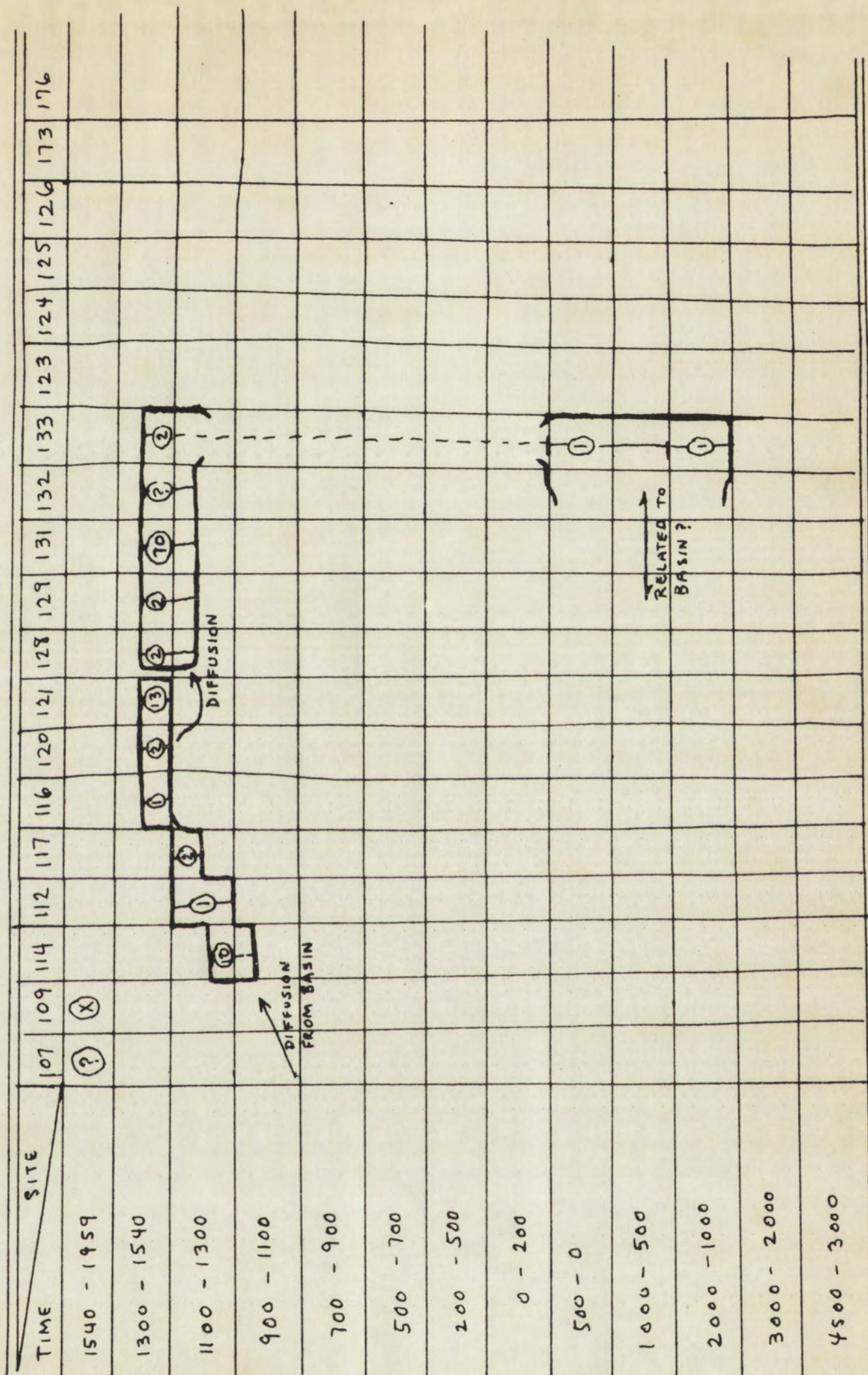


FIGURE 8
DISTRIBUTION OF THREE-ROD-TRIANGULAR FOUNDATION

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locality the stitch encircles the top rod in the coil below. The same manipulation is found in some baskets at Winnemucca Lake, 1500 B.C. to 500 B.C., but in this latter area the technique alternates with the penetrating stitch method.

Moving closer to the Pueblo domain, the three-rod-triangular foundation occurs between 1000 A.D. and 1100 A.D. at Paiute Cave in southern Nevada. The stitch is interlocked, encircling the top rod below. Material showing the same coiling method, but without data on stitch encirclement, is found at Paragonah in southwestern Utah, 1050 A.D. to 1100 A.D. Between 1070 A.D. and 1175 A.D., the three-rod-triangular foundation is evident just outside the western boundary of the Pueblo area. Two basket fragments at Winona have stitches which noninterlock; as with Paiute Cave specimens, the stitch encircles the top rod. Also at Winona eight specimens manifest a noninterlocked penetrating stitch technique on a three-rod-triangular foundation.

In the Pueblo area, between 1100 A.D. and 1300 A.D., the three-rod-triangular foundation occurs around the Four Corners district, at Mesa Verde, Pueblo Bonito, Canyon del Muerto, and Lake Canyon. In all instances except one, the stitch is noninterlocked and penetrates the top rod below. One basket at Mesa Verde is made with an interlocked stitch which penetrates the top rod; this is probably an accidental variation.

Mesa Verde appears to be the center of production for the noninterlocked technique, and the basket makers may have influenced the surrounding localities.

Another region of productivity at this time may have been in central Arizona. The stitch manipulation is not as standardized as in

the Pueblo region. A specimen of the noninterlocked encircling type is found near Flagstaff, while the penetrating stitch type is evident at Hidden House, 1275 A.D.

During the latter part of the period and continuing until 1400 A.D., the three-rod-triangular foundation with noninterlocked encircling stitches occurs along the middle Salt River. At this time the people of Ventana Cave probably were producing the split stitch variant.

There are three plausible hypotheses which explain the appearance of the three-rod-triangular foundation in the Pueblo area: (1) the foundation diffused south from the Great Basin, (2) the foundation diffused north from Ventana Cave, or (3) the foundation developed from the two-rod-and-bundle-triangular form either in the Pueblo region or in one of the other areas of the Southwest.

The evidence tends slightly to favor the first hypothesis. Excluding Ventana Cave for the moment, the earliest appearance of the three-rod-triangular foundation is in the Great Basin. While continuing in this area, the foundation type next occurs along the Virgin River drainage, then in the Flagstaff region, and finally in the Pueblo area. During the time the foundation method was diffusing south, various kinds of stitch techniques were adapted to it, marking out regional basket making boundaries.

The Amargosa Levels, in one of which the three-rod-triangular foundation appears at Ventana Cave, Jennings believes "are nothing but the developmental stages of the Cochise cultures, a local variant of the

the Pueblo region. A specimen of the most typical decorated type is found near Flagstaff, while the characteristic style is evident at Hidden House, 1275 A.D.

During the latter part of the period and continuing until 1500 A.D., the three-rod triangular foundation is the predominant enclosing stiches occur along the middle Salt River. At this time the people of Ventana Cave gradually were adopting the style which variant.

There are three plausible hypotheses which explain the appearance of the three-rod triangular foundation in the Pueblo area: (1) the foundation diffused south from the Grand Basin, (2) the foundation diffused north from Ventana Cave, or (3) the foundation developed from the two-rod-and-rod triangular form either in the Pueblo region or in one of the other areas of the Southwest.

The evidence tends slightly to favor the first hypothesis. Excluding Ventana Cave for the moment, the earliest appearance of the three-rod triangular foundation is in the Grand Basin. While continuing in this area, the foundation type next occurs along the Virgin River drainage, then in the Flagstaff region, and finally in the Pueblo area. During the time the foundation method was diffusing south, various kinds of stick techniques were adapted to it, resulting in regional basket making boundaries.

The earliest levels, in one of which the three-rod triangular foundation appears at Ventana Cave, however, are nothing but the developmental stages of the Cochise culture, a local variant of the

broader Desert base."⁶ If this is true, and considering the extent to which the three-rod-triangular foundation is used in the western part of the Great Basin, then there is the possibility that the technique is part of an early-man hunting-gathering complex located in the Great Basin. It would seem probable that the two-rod-and-bundle-triangular foundation, on the other hand, belongs to another early-man hunting-gathering complex centered in the Southwest.

Returning to the Pueblo area, after the three-rod-triangular foundation method was accepted by the weavers, there seemingly was a withdrawal of the technique in the next period, 1300 A.D. to 1540 A.D. The same noninterlocked penetrating stitch, however, is found at Palatki Ruin and Chavez Pass, 1300 A.D. to 1400 A.D., just southwest of the Pueblo domain. Near Chavez Pass the encircling stitch technique was produced at Chevelon Ruin, 1300 A.D. to 1400 A.D. This latter method also continues along the middle Salt-Gila Rivers until 1400 A.D.

Between 1700 A.D. and 1870 A.D. a few baskets probably made at Hopi are similar to ones at Palatki Ruin and Chavez Pass. Although Weltfish states that the Hopi specimens are like those of the Ute, the material culture at Palatki and Chavez Pass resembles the Hopi; hence a continuity may be indicated for the three-rod-triangular foundation technique from the archaeological into the ethnographic period in the western Pueblo region. At Zuni an aberrant split stitch over a three-rod-triangular foundation occurs on a basket otherwise made with the two-rod-and-bundle-triangular foundation.

⁶ Jennings, op.cit., 285.

broader basin base." It is true, and considering the extent of
which the three-sided foundation is used in the western part
of the Great Basin, then there is the possibility that the technique
part of an early-man hunting-gathering complex located in the Great
Basin. It would seem probable that the two-sided and three-sided
foundations, on the other hand, belong to another early-man hunting-
gathering complex centered in the Southwest.
Returning to the Pueblo area, after the three-sided foundation
foundation method was recognized by the workers, there seemingly was a
withdrawal of the technique in the next period, 1300 A.D. to 1500 A.D.
The same noninterlocking penetrating style, however, is found at Pajon
Ruins and Chaco Pass, 1300 A.D. to 1500 A.D., just northwest of the
Pueblo domain. Near Chaco Pass the underlying style technique was
produced at Chaco Ruins, 1300 A.D. to 1500 A.D. This latter method
also continues along the middle Salt-San Juan River until 1500 A.D.
Between 1300 A.D. and 1500 A.D. a few basins probably made at
Hopi are similar to ones at Pajon Ruins and Chaco Pass. Although
Welsh states that the Hopi specimens are like those of the Ute, the
material culture at Pajon and Chaco Pass resembles the Hopi, hence a
continuity may be indicated for the three-sided foundation
technique from the archaeological into the ethnographic period in the
western Pueblo region. At least an obvious split exists over a three-sided-
triangular foundation occurs on a basin otherwise made with the two-sided-
and-broadly-triangular foundation.

Until about 1900 A.D. in the eastern part of the Pueblo area, the three-rod-triangular foundation, stitch noninterlocked and penetrating was used at San Juan, and probably Santa Clara and San Ildefonso. One basket constructed with this method comes from Zia and possibly was made at a Tewa Pueblo. Among the Pueblos, the method continues today only at Jemez, where Alcario Gachupin uses it as an alternate to a five-rod-bunched foundation technique.

Because other types of artifacts indicate a historical connection between the northern Rio Grande Pueblos and archaeological sites in the San Juan River drainage, particularly Mesa Verde, it may be that the Tewa-speaking people and Jemez are continuing a type of coiled basketry used between 1100 A.D. and 1300 A.D. at Mesa Verde.

The Jicarilla Apache and possibly the Navaho may have adopted the three-rod-triangular foundation, stitch noninterlocked and penetrating when they moved into the Pueblo region. The Ute evidently started to use the technique when they began making baskets for the Navaho.

The history of the three-rod-triangular foundation during the ethnographic period in the Pueblo region, therefore, is similar to the two-rod-and-bundle-triangular form. Both tend to disappear from use among the people sharing the Pueblo culture, while at the same time these techniques are adopted by intrusive tribes.

Outside the Pueblo area, the history of the three-rod-triangular foundation may be summarized by noting that the form continued into the ethnographic period in central California, the western part of the Great Basin, and central Arizona. The same stitch technique which is used in the Pueblo area is found among the Havasupai, Walapai, and the Yavapai,

Until about 1900 A.D. in the eastern part of the Pueblo area, the three-rod-triangular foundation, which noninterlocked and penetrating was used at San Juan, and probably Santa Clara and San Ildefonso. One basket connected with this method comes from the and possibly was made at a few Pueblo. Among the Pueblo, the method continues today only at Jemez, where Alicia Sanchez says it is an alternative to a three-rod-triangular foundation technique.

Because other types of evidence indicate a historical connection between the northern Rio Grande Pueblo and archaeological sites in the San Juan River drainage, particularly Mesa Verde, it may be that the Jemez-speaking people and Jemez are continuing a type of coiled basketry used between 1100 A.D. and 1300 A.D. at Mesa Verde.

The Ute and the Navaho and possibly the Hopi may have adopted the three-rod-triangular foundation, which noninterlocked and penetrating when they moved into the Pueblo region. The Ute evidently started to use the technique when they began making baskets for the Navaho.

The history of the three-rod-triangular foundation among the ethnographic period in the Pueblo region, therefore, is similar to the two-rod-and-bundle-triangular form. Both seem to disappear from use among the people sharing the Pueblo culture, while at the same time these techniques are adopted by intrusive tribes.

Outside the Pueblo area, the history of the three-rod-triangular foundation may be summarized by noting that the form continued into the ethnographic period in central California, the western part of the Great Basin, and central Arizona. The same style technique which is used in the Pueblo area is found among the Hopewell, Salween, and the Navaho.

and among the White Mountain-San Carlos Apache. The former three tribes alternate the penetrating stitch with an encircling stitch method.

Authorities have discussed the history of the three-rod-triangular foundation technique. Weltfish believes that the method is intrusive into the Pueblo region, while Morris and Burgh state that it is indigenous in the Pueblo area. The former sees in the order of the data an early appearance of the three-rod-roundation southwest and northwest of the Pueblo area; furthermore, she believes that the Pueblo people, before adopting the technique, experimented with a two-rod-and-reed-triangular foundation. Morris and Burgh, on the other hand, see the three-rod-triangular foundation as a variant of the two-rod-and-bundle-triangular method; the latter is a dominant Pueblo technique which gave way to the former method during the Pueblo IV period.

Both authorities, in part, may be correct. There may be a basic triangular foundation form, with the three-rod-triangular and the two-rod-and-bundle-triangular as variant foundations. The technique of arranging the elements into such a form may have originated as one basket making tradition. Such a tradition appears distributed from central California, across the Great Basin, and down into the Southwest. The use of three rods was preferred by the people of central California and the Great Basin, while in the Southwest the elements selected for use were two rods and a bundle. Later, the three-rod-triangular foundation technique diffused or was carried by migrating people into the Southwest.

8. One-rod-and-bundle-stacked Foundation

Stacked foundations never have been important in the Pueblo area. To the north, in central and northern Utah, Colorado, and into the High Plains, vertical foundations are the most frequent types of coiling. To the south, stacked foundations are secondary in importance, although the Mescalero in the southeast and Yuma in the southwest use this type of foundation. To the west, the Yuki and Pomo in central California occasionally stack the elements.

The stacked foundation type with the widest distribution and the longest history is the one-rod-and-bundle-stacked. Baskets representing this type are found along the eastern margin of the Great Basin; through the Fremont drainage; into part of the southern Colorado Plateau; on the Uncompaghre Plateau; in the Hueco, Guadalupe, and Capitan mountains; at Ventana Cave; and near the Pacific Ocean in central California. On this type of foundation the stitch manipulation and slant are variable, but they tend to follow the pattern for other types of foundation-stitch previously discussed.

Danger Cave contains the earliest evidence of the one-rod-and-bundle-stacked foundation technique; the stitch is noninterlocked. This method is dominant during the early periods of Danger Cave, from 4500 B.C. to 1500 B.C., continuing until the abandonment of the cave as the second most important technique. Near the end of this time span, one fragment shows an interlocked stitch method.

From 2000 B.C. to 0 B.C., a similar foundation technique with noninterlocked stitches occurs in the Uncompaghre complex of central

6. One-rod-and-bundle-stacked foundation

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through the Fremont drainage; into parts of the southern Colorado Plateau;

on the Uncompagere Plateau; in the Huaco, Chaco, and Gupitan drainages;

at Ventana Cave; and near the Pacific Ocean in central California. On

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but they tend to follow the pattern for other types of foundation-stick

previously discussed.

At Ventana Cave contains the earliest evidence of the one-rod-and-

bundle-stacked foundation technique; the stick is noninterlocked. This

method is dominant during the early periods of Basketry Cave, from 1500 B.C.

to 1500 A.D., continuing until the abandonment of the cave as the second

most important technique. Near the end of this time span, one fragment

shows an interlocked stick method.

From 1000 B.C. to 500 B.C., a similar foundation technique with

noninterlocked sticks occurs in the Uncompagere region of central

Colorado. Further south, at Ventana Cave, two basket fragments with the same foundation type but with stitches split are manifested between 2000 B.C. and 0 B.C.; these specimens could be accidental variations of the bundle-with-rod-core, a dominant method used throughout the history of Ventana Cave.

By 750 A.D., the one-rod-and-bundle-stacked foundation with noninterlocked stitches appears in the Fremont River drainage; the method possibly is a continuation of the one used at Danger Cave. Interlocked stitches become more popular, however, with the Fremont people.

In the Pueblo area, a fragment with noninterlocked stitches occurs at Kayenta between 700 A.D. and 900 A.D. Brew mentions that some baskets manifesting the technique are found at certain Abajo phase sites. Because of the succession of events in northern and central Utah, the one-rod-and-bundle-stacked baskets in the Pueblo area probably represent trade articles from the north.

Between 900 A.D. and 1100 A.D. at Pueblo Bonito, the upper two coils of a basket are constructed with a one-rod-and-bundle-stacked foundation, stitch noninterlocked. The rest of the basket consists of a two-rod-and-bundle-stacked method. Just west of Pueblo Bonito, between 1011 A.D. and 1045 A.D., several basket fragments with a one-rod-and-bundle (stacked ?) foundation are found at Leyit Kin.

West of the Pueblo area, between 1000 A.D. and 1200 A.D., several sites in the vicinity of Flagstaff, including Winona, show evidence of the one-rod-and-bundle-stacked foundation. Northwest of Flagstaff, the method appears quantitatively important at Etna Cave.

To the south, in the Hueco-Guadalupe-Capitan mountains, an independent development is possibly indicated for another type of one-rod-

Colorado. Further north, at Ventana Cave, two basket fragments with the same foundation type but with different splits are manifested between 1000 B.C. and 500 B.C.; these specimens could be accidental variations of the bundle-with-rod-core, a dominant method used throughout the history of Ventana Cave.

By 750 A.D., the one-rod-and-bundle-stacked foundation with noninterlocked stitches appears in the Fremont River drainage; this method possibly is a continuation of the one used at Ventana Cave. Interlocked stitches become more popular, however, with the Fremont people. In the Pueblo area, a fragment with noninterlocked stitches occurs at Kayenta between 700 A.D. and 900 A.D. Few nations that make baskets manifesting the technique are found at certain Pueblo sites. Because of the succession of events in northern and central Utah, the one-rod-and-bundle-stacked baskets in the Pueblo area probably represent trade articles from the north.

Between 900 A.D. and 1100 A.D. at Pueblo Bonito, the upper two coils of a basket are constructed with a one-rod-and-bundle-stacked foundation, which noninterlocked. The rest of the basket consists of a two-rod-and-bundle-stacked method. Just west of Pueblo Bonito, between 1011 A.D. and 1055 A.D., several basket fragments with a one-rod-and-bundle (attached?) foundation are found at Juyit Kiva. West of the Pueblo area, between 1000 A.D. and 1200 A.D., several sites in the vicinity of Flagstaff, including Winkelman, show evidence of the one-rod-and-bundle-stacked foundation. Northwest of Flagstaff, the method appears quantitatively important at Hoven Cave.

To the north, in the Snake-Shoshone-Captan mountains, an independent development is possibly indicated for another type of one-rod-

and-bundle-stacked foundation which occurs between ? A.D. or B.C. and 900 A.D. The bundle, except for a few variations, is set on top of the rod and carried down one side of it, producing a vertical-lateral bundle arrangement; the stitch is generally split. A likely prototype of this method is seen in the bundle-with-rod-core foundation, which occurs sporadically in the region but is an important technique west of the mountains at Ventana Cave. If such a developmental relationship exists between the bundle-with-rod-core and the one-rod-and-bundle-vertical-lateral-stacked types, then there is the possibility that the southeastern New Mexico stacked method is not directly related to the one-rod-and-bundle-stacked type existing to the north.

On the basis of the above evidence, the one-rod-and-bundle-stacked foundations occurring in the Pueblo and Flagstaff areas probably represent trade baskets or copies of the technique prevalent in central Utah and at Etna Cave. As another hypothesis for explaining the one-rod-and-bundle-stacked foundation technique in the Pueblo area, Morris and Burgh consider the method a variation of the two-rod-and-bundle-triangular foundation.

After 1200 A.D. and until the ethnographic period, no baskets with a one-rod-and-bundle-stacked foundation are found south of the Great Salt Lake of Utah. In the Salt Lake region, the vertical technique, with noninterlocked and interlocked stitches, persists until a recent time when it is replaced by two and three-rod-stacked foundations, as evidenced among the Bannock and Shoshoni tribes.

During the ethnographic period in the Pueblo area, the eastern Navaho are listed as having a one-rod-and-bundle (stacked ?) foundation. The type is also found at Zuni; Mason states that "it is customary to

and-bundle-stacked foundation which occurs between 1 A.D. and 900 A.D. The bundle, except for a few variations, is not on top of the rod and curved down one side of it, protruding a small lateral bundle arrangement; the which is generally split. A likely prototype of this method is seen in the bundle-with-rod-core foundation, which occurs sporadically in the region but is an important prototype used in the construction of Vulture Cave. If such a development is not occurring, there is a difference between the bundle-with-rod-core and the one-rod-and-bundle-lateral-stacked types. Then there is the possibility that the construction of New Mexico stacked method is not directly related to the one-rod-and-bundle-stacked type existing to the north.

On the basis of the above evidence, the one-rod-and-bundle-stacked foundation occurring in the Pueblo and Anasazi areas probably represent trade baskets or copies of the technique given in central Utah and at Vulture Cave. As another hypothesis for explaining the one-rod-and-bundle-stacked foundation technique in the Pueblo area, it is suggested that during the period of the one-rod-and-bundle-stacked foundation, the Pueblo and Anasazi were in contact with the Basket and Shoofly tribes.

After 1000 A.D. and until the ethnographic period in the Pueblo area, the Pueblo with a one-rod-and-bundle-stacked foundation are found south of the Salt Lake of Utah. In the Salt Lake region, the western technique, with noninterlocked and later joined sticks, persists until a recent time when it is replaced by two and three-rod-stacked foundations, an evidence which the Basket and Shoofly tribes.

During the ethnographic period in the Pueblo area, the Pueblo are listed as having a one-rod-and-bundle-stacked foundation. The type is also found at Hualapai; Hualapai states that it is identical to

attribute such ware to the Apache Indians, although...there are quite a number...of this type...purporting to come from the Zuni Indians..."⁷

Other tribes in the Southwest listed as having a one-rod-and-bundle-(stacked ?) foundation are the Warm Springs Apache, Huachuca Apache, and Mescalero Apache. The Mescalero use a thin slat in place of the rod; they also split their stitches. These Athapascan tribes could have borrowed the one-rod-and-bundle technique before they entered the Southwest; possibly they acquired the method from people living around the Great Salt Lake in Utah.

9. Half-rod-and-bundle-stacked Foundation

Structurally, the half-rod-and-bundle-stacked foundation is almost the same as the one-rod-and-bundle-stacked form. For the half-rod type, the rod is split down the center and one half is used as an element in the coil. As with the one-rod-and-bundle-stacked types, there are descriptive sub-variants based upon the position of the bundle.

The distribution of the half-rod-and-bundle-stacked types can nearly be encompassed by drawing an oval line on a map around the border of Utah-Colorado and Arizona-New Mexico. The oval is wider in the north than in the south. An isolated location lies in the Capitan mountains to the southeast.

The stitch is noninterlocked and slant / throughout the above area, but interlocked stitches also occur at Durango, Canyon del Muerto,

⁷ Mason, op.cit., 502.

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number... of this type... pertaining to some from the Gila Indians...
Other tribes in the Southwest listed as having a one-rod-and-
bundle-(attached?) foundation are the Navajo, Hopi, and
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of Utah-Coronado and Arizona-New Mexico. The oval is wider in the north
than in the south. An isolated location lies in the Capitan mountains
to the southeast.

The style is reminiscent and like \ throughout the above
area, but interlocked stitches also occur at Durango, Canon del Rio,

Moki Canyon and La Sal Mountain. The interlocked stitches are perhaps individual variations of the more common stitch manipulation.

The three variant foundations are: (1) half-rod-and-bundle-stacked which occurs in the eastern half of Utah and western part of Colorado; (2) inverted-half-rod-and-bundle-stacked which is found along the San Francisco River and the western part of the Pueblo area; and (3) half-rod-and-bundle-vertical-lateral which occurs at Feather Cave in southeast New Mexico.

The earliest of the above variant foundations is the inverted-half-rod-and-bundle-stacked; a fragment occurs in each of the occupational levels at Cordova Cave, from 300 B.C. to 1275 A.D. During the 700 A.D. to 1275 A.D. period, the method moves north to Tularosa Cave.

Continuing north, the foundation technique intrudes into the western Pueblo area between 200 A.D. and 500 A.D. One fragment occurs at Canyon del Muerto and another is found at Moki Canyon. Although these specimens have interlocked as well as noninterlocked stitches, they may represent trade baskets from Cordova or Tularosa Cave.

The half-rod-and-bundle foundation type is found at sites spread along the northern portion of the Colorado River; the time interval for the method in this region is between 500 A.D. to 1275 A.D. To the east, the technique is popular at Durango Basket Maker II sites, which date between 46 A.D. and 330 A.D. Since stacked foundation types have been important over a considerable period of time north of the Pueblo area, the two hundred year hiatus between the Durango specimens and those along the Colorado River may be more illusory than real.

Later, along the northern part of the Pueblo area, the few fragments of half-rod-and-bundle-stacked foundations probably represent

Most Canyon and La Sal Mountains. The interlocked stitches are perhaps individual variations of the same common stitch manipulation.

The three variant foundations are: (1) half-rod-and-bundle-

staked which occurs in the eastern half of Utah and western part of

Colorado; (2) inverted-half-rod-and-bundle-staked which is found along

the San Francisco River and the western part of the Pueblo area; and

(3) half-rod-and-bundle-vertical-lateral which occurs at Hovenweep Cave in

southeastern New Mexico.

The earliest of the above variant foundations is the inverted-

half-rod-and-bundle-staked; a fragment occurs in each of the occupational

levels at Cordova Cave, from 100 B.C. to 1275 A.D. During the 700 A.D.

to 1275 A.D. period, the method moves north to Tularosa Cave.

Continuing north, the foundation technique migrates into the

western Pueblo area between 500 A.D. and 800 A.D. One fragment occurs at

Canyon del Muerto and another is found at Mesa Canyon. Although these

specimens have interlocked as well as noninterlocked stitches, they may

represent trade baskets from Cordova or Tularosa Cave.

The half-rod-and-bundle foundation type is found at sites

spread along the northern portion of the Colorado River; the time interval

for the method in this region is between 500 A.D. to 1275 A.D. To the

east, the technique is popular at Burnang Basket Maker II sites, which

date between 400 A.D. and 550 A.D. Since staked foundation types have

been important over a considerable period of time north of the Pueblo

area, the two hundred year hiatus between the Burnang specimens and those

along the Colorado River may be more illusory than real.

Later, along the northern part of the Pueblo area, the few

fragments of half-rod-and-bundle-staked foundations probably represent

trade baskets from the northern part of the Colorado Plateau.

The half-rod-and-bundle-vertical-lateral type occurs only at Feather Cave in southeast New Mexico between ? A.D. and 900 A.D. It appears to be a dominant technique, used alternately with the one-rod-and-bundle-vertical-lateral method.

In summary, there are three basket-making centers which arrange a half-rod and bundle in some vertical manner. Whether the types represented at each center are culturally related or not is unknown. There is the possibility that the inverted and noninverted types are related indirectly, while the vertical-lateral method has a separate history.

10. Other Stacked Foundations

The other kinds of stacked foundations which appear in the Pueblo area are the two-rod, three-rod, and two-rod-and-bundle; these methods, however, are not important in the Pueblo area.

Because few archaeological baskets manifest these techniques, any inference about their relationships would be questionable. Two-rod-stacked foundations occur in the southern Oregon material, 500 B.C. to 0 B.C., in the Promontory Caves after 1150 A.D., and in the Ozark Bluff deposits, ? A.D. to 500 A.D. or later. One fragment is found at Jemez Cave and another occurs at Ventana Cave, both specimens possibly dating around 1200 A.D. A three-rod-stacked is found at Mesa Verde and at Battle Canyon, 1100 A.D. to 1275 A.D. The two-rod-and-bundle-stacked type is evidenced at Pueblo Bonito and Mesa Verde. Although the latter technique is unique to the Pueblo area, a two-rod-and-bundle-vertical-lateral type occurs at Feather Cave, ? A.D. and 900 A.D. and a two-rod-

trade baskets from the northern part of the Colorado Plateau.
The half-rod-and-handle-vertical-lateral type occurs only at
Feather Cave in southeastern New Mexico between 7 A.D. and 900 A.D. It
appears to be a dominant technique, used alternately with the one-rod-
and-handle-vertical-lateral method.
In summary, there are three basket-making centers which produce
a half-rod and handle in some vertical manner. Whether the types repre-
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stacked foundations occur in the southern Oregon material, 500 B.C. to
0 B.C., in the Fremontian Cave after 1250 A.D., and in the Quana Shift
deposits, 7 A.D. to 500 A.D. or later. One fragment is found at Jones
Cave and another occurs at Ventana Cave, both specimens possibly dating
around 1500 A.D. A three-rod-stacked is found at Mesa Verde and at
Harris Canyon, 1100 A.D. to 1275 A.D. The two-rod-and-handle-stacked
type is evidenced at Pueblo Bonito and Mesa Verde. Although the latter
technique is unique to the Pueblo area, a two-rod-and-handle-vertical-
lateral type occurs at Feather Cave, 7 A.D. and 900 A.D. and a two-rod-

and-bundle-stacked, split stitch technique is used by the Mescalero Apache. Ethnographic evidence suggests that the two-rod and three-rod-stacked foundations are basketry traits of the Shoshonean, especially the Ute tribes. Whether or not this means that these methods were invented north of the Pueblo area is unknown.

11. Other Foundation Types

The bundle-with-rod-core concept appears in a few basket fragments scattered across the central Colorado Plateau and into the Virgin River drainage. One such fragment occurs at Allen Canyon in the Pueblo area between 500 A.D. and 700 A.D. All of the foregoing specimens probably represent trade baskets from the southern part of the Southwest; the main area of this technique stretches from Ventana Cave over to the Hueco-Guadalupe mountains.

The five-rod-bunched foundation method, stitches noninterlocked and penetrating is used today at Jemez and among the Jicarilla Apache. Although there are no archaeological specimens of such a type in the Pueblo area, a three-rod-and-bundle-bunched fragment is found at Mesa Verde, 1100 A.D. to 1274 A.D.

The two-rod-horizontal occurrences are difficult to trace because most investigators do not indicate whether the two rods are aligned vertically or horizontally. The available information suggests that two-rod-horizontal foundations are derived from different concepts in different regions.

In the Pueblo area, at Kiatuthlana during the archaeological period, and at Santa Clara, Zia, and among the eastern Navaho during the

and-bundle-stacked, split-stick technique in use by the Mesquero Apache. Ethnographic evidence suggests that the two-rod and three-rod stacked foundations are basically traits of the Shoshonean, especially the Ute tribes. Whether or not this means that these methods were borrowed north of the Pueblo area is unknown.

II. Other Foundation Types

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The five-rod-bundled foundation method, although nonintegrated and penetrating is used today at times and among the Shoshone people. Although there are no archaeological specimens of such a type in the Pueblo area, a three-rod-and-bundle-bundled fragment is found at Mesa Verde, 1100 A.D. to 1275 A.D.

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In the Pueblo area, at Kintamaní during the Mesa Verde period, and at Santa Clara, etc., and among the eastern Navaho during the

ethnographic period, a two-rod foundation is listed. If the two rods are horizontally placed, the specimens could be aberrancies of the two-rod-and-bundle-triangular concept. On the other hand, if the two rods are aligned vertically, then they may be related to the two-rod-stacked type found at Jemez Cave or to the north in Utah and Colorado.

12. Intricate Coiled Stitch Types

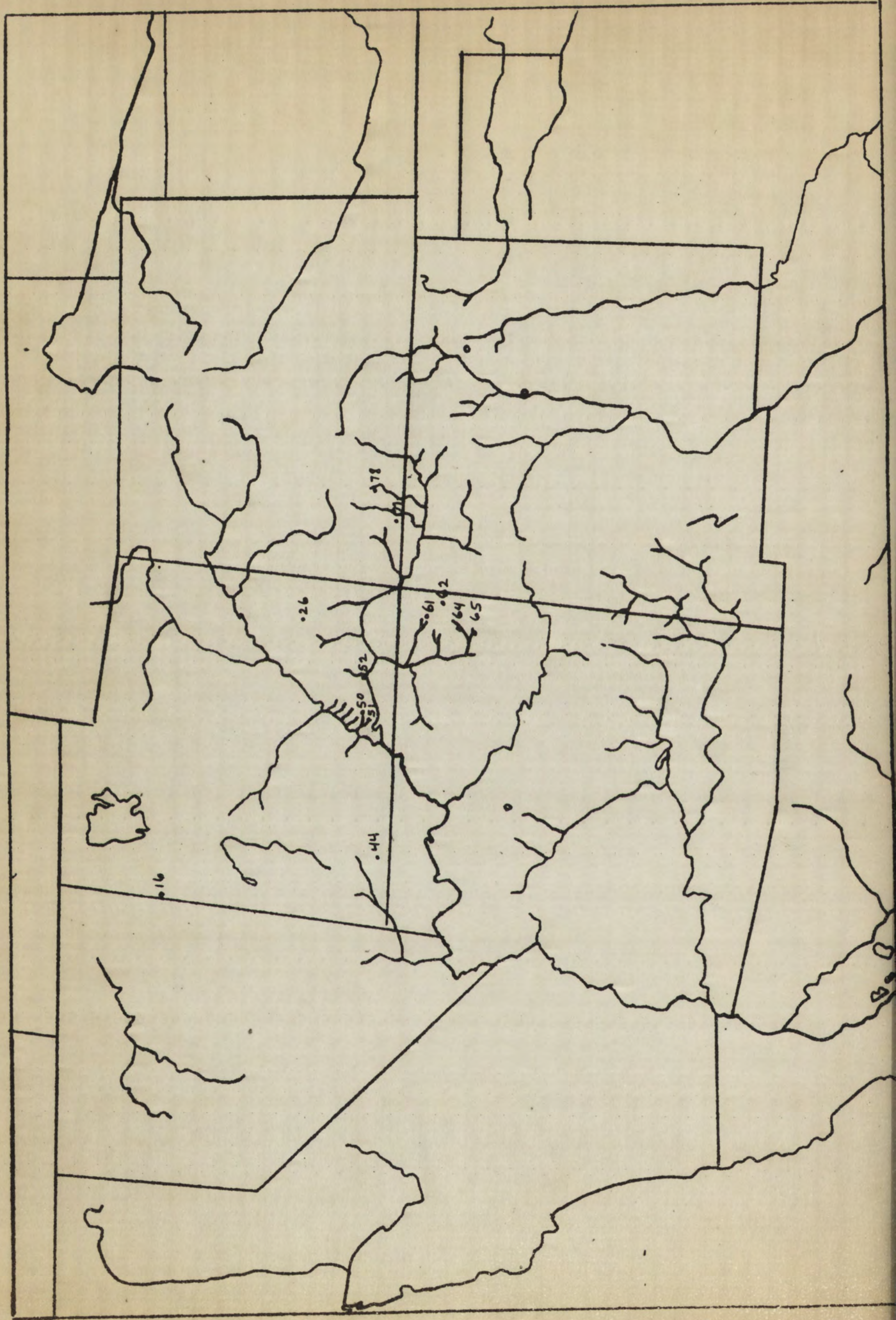
Morris and Burgh, in their report on Anasazi Basketry, illustrate a number of involved stitch manipulations. These techniques are grouped into two general categories: intricate stitch and stitch-and-wrap. These may occur with a variety of foundations.⁸ The characteristic feature of the intricate stitch is that the coils in a basket are held apart by a standing element and a false knot; i.e., the stitch is brought down and around or through the preceding coil, then wrapped around itself between coils. A series of false knots prevents the coils from touching each other and gives rise to an openwork basket often called a sifter. Figure 9 depicts the distribution of the intricate stitch types.

Between 200 A.D. and 500 A.D. there are three sites in the Pueblo area, including Durango up to 330 A.D., which show the interlocked intricate stitch on a one-rod foundation. Just to the west, the technique also is found on two baskets at DuPont Cave. These four sites are aligned in an east-west direction north of the San Juan River.

⁸ Morris and Burgh, *Anasazi Basketry*, 1941, 15-19.

FIGURE 9

DISTRIBUTION OF INTRICATE STITCH



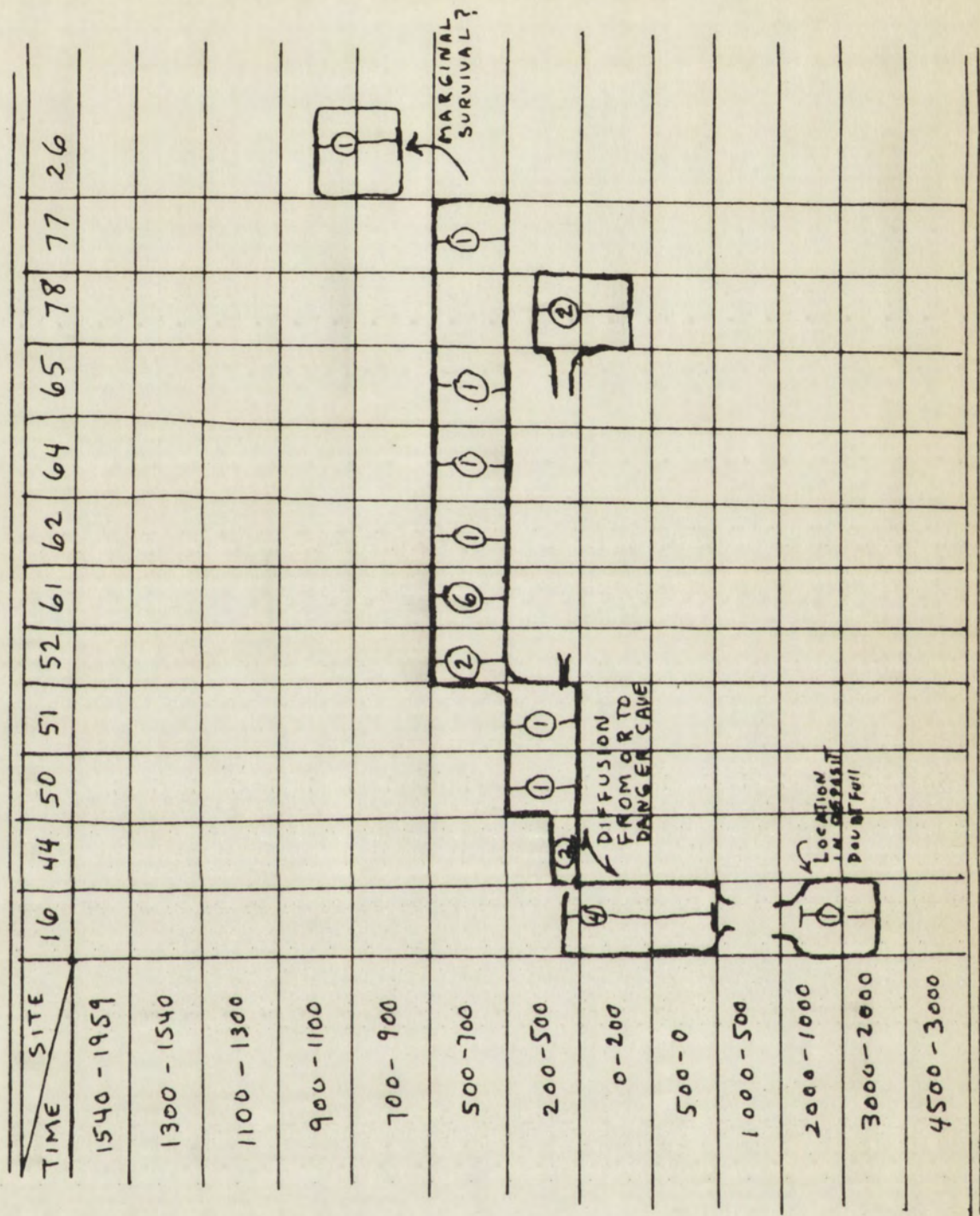


FIGURE 9
DISTRIBUTION OF INTRICATE STITCH

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During the next period, 500 A.D. to 700 A.D., the interlocked intricate stitch type, while persisting on the north side of the San Juan River, diffuses south of the river along the east side of the Chinlee Wash. In the southward diffusion, the stitch changes slightly and a two-rod-and-bundle-triangular foundation is used. Prayer Rock appears to be an area where the one-rod and two-rod-and-bundle-triangular foundation were used with a variety of intricate stitch techniques.

North of the Pueblo area, the Danger Cave intricate stitch specimens on one-rod foundations may represent influences from the Pueblo region; this is implied by Jennings. However, the fragment dating between 2500 B.C. and 2000 B.C. poses a problem. If the specimen was discovered in situ, one must infer that the intricate stitch concept was used first at Danger Cave, or postulate an equally early occurrence of the technique in the Pueblo area.

13. Stitch-and-wrap Types

The stitch-and-wrap types are characterized as having a simple stitch which holds the work coil to the preceding coil, after which the stitch makes one or more complete revolutions around the work coil. If the stitch catches the preceding coil more than once in succession, it is called a multiple-stitch-and-wrap method.

At Prayer Rock, a stitch-and-wrap technique occurs on a fragment dated 500 A.D. to 700 A.D. The stitches are interlocked and they encircle the one-rod foundation in the coil below. In this district and to the south at Canyon del Muerto, a multiple-stitch-and-wrap method is evident on a two-rod-and-bundle-triangular foundation; noninterlocked

stitches penetrate the bundle in the foundation below.

Between 1100 A.D. and 1300 A.D., the stitch-and-wrap technique is distributed north of the San Juan River at Lost Canyon, Utah, and at Mesa Verde, Colorado. Mesa Verde has evidence of a number of stitch-and-wrap techniques.

South of the Pueblo area, during the 1100 A.D. to 1300 A.E. period, a basket fragment manifesting the multiple-stitch-and-wrap on a one-rod foundation variant, which also occurs at Mesa Verde, comes from a site in the Upper Gila River region. To the west of this region, in Bear Creek, a noninterlocked stitch-and-wrap method is used on a bundle, bundle-with-rod-core, and two-rod-and-bundle-triangular foundation.

In the ethnographic period, only the Yokuts of California use an involved stitch technique. Here, the stitch is a noninterlocked multiple-stitch-and-wrap on a bundle foundation.

The stitch-and-wrap types in the Greater Southwest probably are derivatives of one concept. Upon this basic concept, the basket makers at different localities have elaborated or reproduced inaccurate copies.

However suggestive other information may be about involved coiled stitches elsewhere in the Western Hemisphere -- the intricate stitch in Tierra del Fuego, the Valley of Mexico, and the Arctic and the stitch-and-wrap in Peru -- one must postulate that the types which occur in the Greater Southwest are indigenous and may have been invented within the Pueblo area. It is interesting, however, that Weltfish classifies all types of involved stitches occurring on a one-rod foundation as being affiliated with the simple interlocked stitch method also on a

stitches penetrate the bundle in the foundation below.

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attached herewith for the purpose of the present investigation.
The first of these is the fact that the specimens of the
in the present case are all of the same type, and that they
have been found in the same locality, and that they are all
of the same size, and that they are all of the same color.
The second of these is the fact that the specimens of the
in the present case are all of the same type, and that they
have been found in the same locality, and that they are all
of the same size, and that they are all of the same color.
The third of these is the fact that the specimens of the
in the present case are all of the same type, and that they
have been found in the same locality, and that they are all
of the same size, and that they are all of the same color.
The fourth of these is the fact that the specimens of the
in the present case are all of the same type, and that they
have been found in the same locality, and that they are all
of the same size, and that they are all of the same color.
The fifth of these is the fact that the specimens of the
in the present case are all of the same type, and that they
have been found in the same locality, and that they are all
of the same size, and that they are all of the same color.
The sixth of these is the fact that the specimens of the
in the present case are all of the same type, and that they
have been found in the same locality, and that they are all
of the same size, and that they are all of the same color.
The seventh of these is the fact that the specimens of the
in the present case are all of the same type, and that they
have been found in the same locality, and that they are all
of the same size, and that they are all of the same color.
The eighth of these is the fact that the specimens of the
in the present case are all of the same type, and that they
have been found in the same locality, and that they are all
of the same size, and that they are all of the same color.
The ninth of these is the fact that the specimens of the
in the present case are all of the same type, and that they
have been found in the same locality, and that they are all
of the same size, and that they are all of the same color.
The tenth of these is the fact that the specimens of the
in the present case are all of the same type, and that they
have been found in the same locality, and that they are all
of the same size, and that they are all of the same color.

one-rod foundation. These variant types, she feels, are intrusive into the Pueblo area.⁹ Morris and Burgh, on the other hand, ascribe all involved stitch types to the Pueblo area.¹⁰

14. False-braid Coiled Rims

Two general categories of rim construction are evident in the Pueblo area. The self-stitched rim is technically the simplest and most popular, extending over much of the Greater Southwest. The false-braided rim, which is more difficult to construct, has a limited distribution. Such rims are sewn with a single splint manipulated over the rim foundation, in a figure eight loop. Figure 10 shows the distribution of false-braided rims.

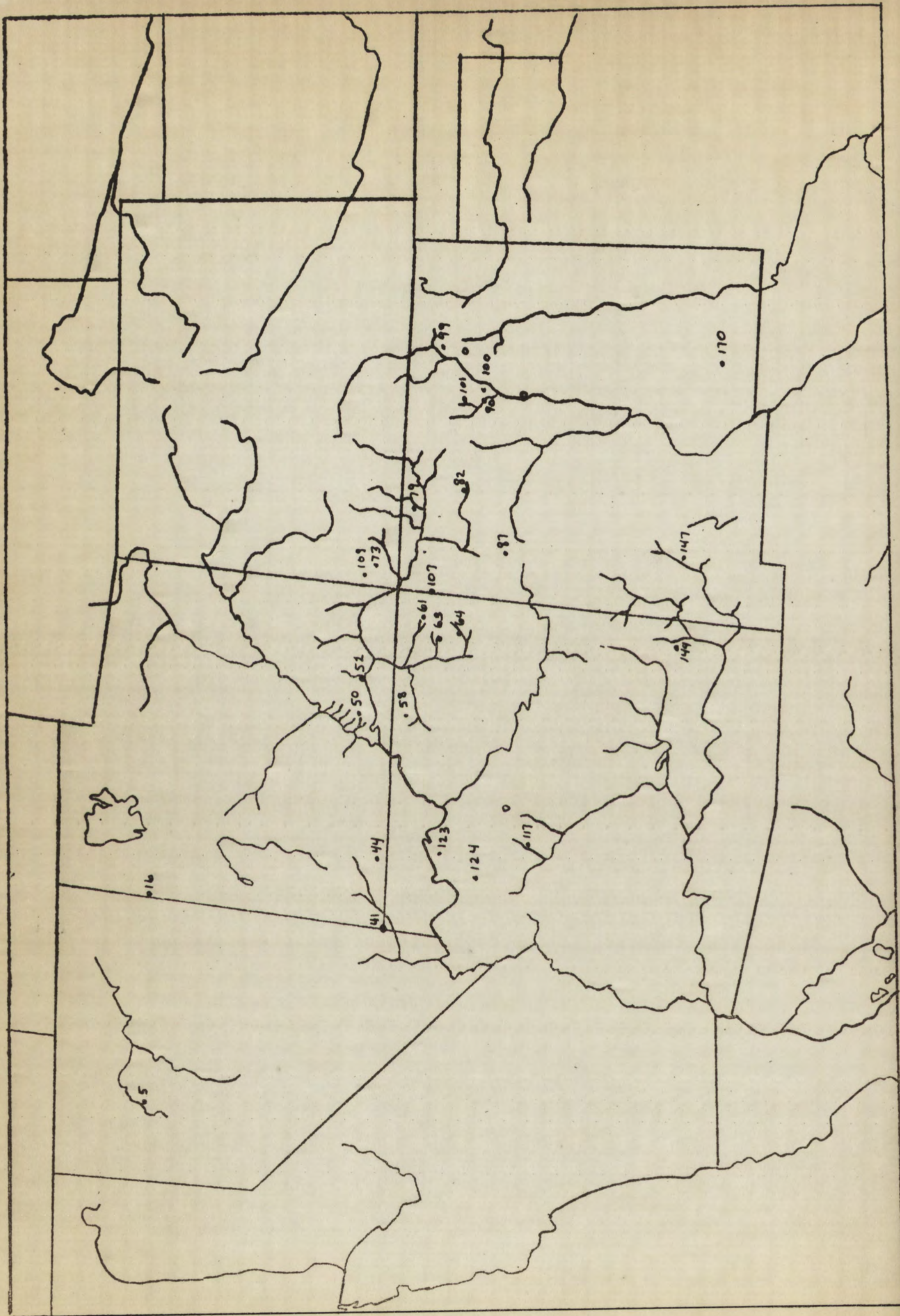
The distribution of false-braided rims is in a zone across the middle of the Greater Southwest. A few types are reported from the Great Basin, and southern Arizona and New Mexico. Within the centrally located region, however, there is a long history of false-braiding, with evidence of seven specific ways of manipulating the splint into a rim braid.

On the southern Colorado Plateau, between 200 A.D. and 500 A.D., three sites have baskets which are finished in a false-braided technique. A two-rod-and-bundle-triangular foundation fragment with a chevron rim comes from the Kayenta district. In a basket found at East Canyon, Utah, the last inch of the rim is woven in a false-braid; the back-stitch of the sewing splint crosses two forward-stitches and penetrates the preceding

⁹ Weltfish, Preliminary Classification, 1932a, 41.

¹⁰ Morris and Burgh, op.cit.

FIGURE 10
DISTRIBUTION OF FALSE-BRAID COILED RIMS



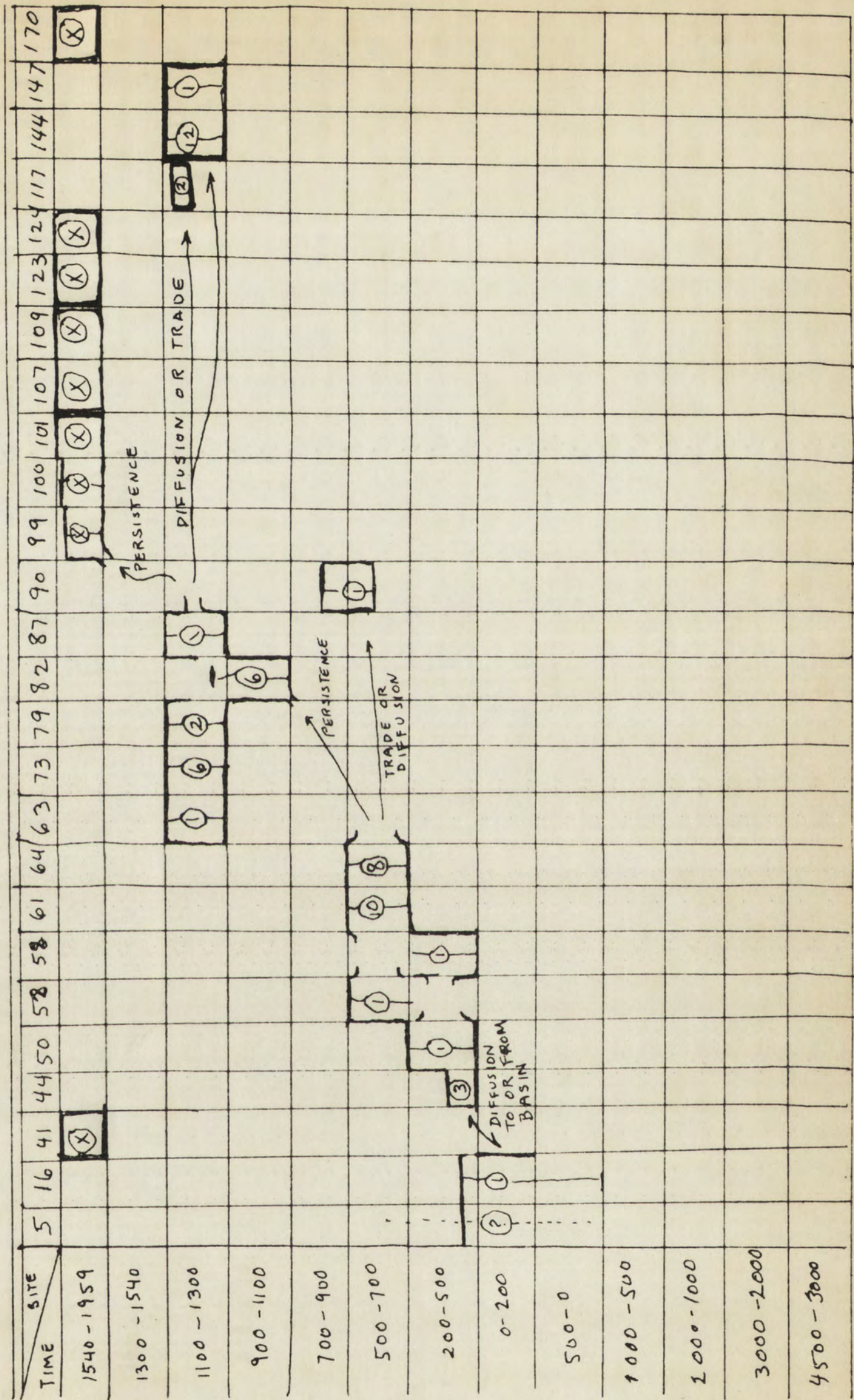


FIGURE 10
DISTRIBUTION OF FALSE-BRAID COILED RIMS

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coil. The foundation is one-rod, intricate stitched. A false-braided method, possibly similar to that of East Canyon, occurs at DuPont Cave; the foundation, however, is two-rod-and-bundle-triangular. To the north, a herringbone rim is found at Danger Cave between 500 B.C. and 250 A.D. and such chevroned rims are reported for Lovelock Cave. Since the false-braided rim at Danger Cave is associated with an intricate stitched body weave, the braided rim concept may have diffused north from the Pueblo area. The Lovelock Cave rims are so vaguely described that inferences about them cannot be made at present.

Between 500 A.D. and 700 A.D., the east side of the Chinlee Wash is a productive center for false-braiding coiled basket rims. The most popular technique is the same as the East Canyon method, but generally associated with two-rod-and-bundle-triangular foundations. At Prayer Rock, besides the popular tip braiding, an entire rim is woven in this manner. To the north, at Grand Gulch, a self-coiled rim has the last inch woven in a false-braid. In the eastern part of the Pueblo area, a chevron rim fragment comes from a pithouse near Zia, 600 A.D. to 800 A.D.

Summarizing the early periods, the false-braid rim variants which have a back-stitch crossing two forward stitches and penetrating the coil below are distributed in the western part of the Pueblo area and at DuPont Cave. The most numerous specimens and the more involved types center along the east side of the Chinlee Wash, in northeastern Arizona, which is about half-way between DuPont Cave and the Zia site. At this center another type of false-braided rim appears in which the back-stitch crosses three forward-stitches and goes around the standing element between coils; this technique re-appears at a later period.

Between 900 A.D. and 1300 A.D., there are twice as many sites manifesting false-braid coiled rims as in the preceding periods. The alignment of sites shifts to the east-central part of the Pueblo area and south along the Mogollon Rim.

From Mesa Verde to Aztec (?), Pueblo Bonito, and a cache near Gallup, there is evidence of a false-braided rim method characterized as having the back-stitch cross three forward-stitches and encircle the standing element between coils. At Mesa Verde, Pueblo Bonito, and the Gallup cache, rim terminals generally are braided in this manner. Three whole rims also are braided with the same technique, one each at Mesa Verde, Aztec (?), and Pueblo Bonito. Foundations and coiling stitches on the above baskets are variable. In the west-central part of the Pueblo area, only one site has evidence of false-braiding. At Painted Cave, the end of a two-rod-and-bundle-triangular foundation rim may have been woven in a manner similar to the east-central Pueblo type.

Certain people living along the Mogollon Rim and upper Gila River also used the braided rim idea. Near the northwest end of the Rim, at Hidden House, two baskets have rims terminating in false-braids; the technique may have been comparable to the popular Pueblo type in which the back-stitch crosses three forward-stitches. Near the southeast end of the Mogollon Rim, twelve miniature baskets at Bear Creek have rims terminating in false braids. Another chevron rim tip comes from Cave Canyon on the upper Gila River; the back-stitch crosses only one forward stitch and penetrates the top element of the rim foundation.

It appears, then, that from 900 A.D. to 1300 A.D. the center for the production of braided rims continues near the middle of the Pueblo area. A shift occurs from west-central to east-central sites, and

Between 900 A.D. and 1300 A.D., there are two or more times
manifesting false-braid which runs as in the preceding periods. The
alignment of sites shifts to the east-central part of the Pueblo area
and south along the Mogollon River.
From Mesa Verde to Aztec (?), Pueblo Bonito, and a small part
Gallup, there is evidence of a false-braid which the method characterized as
having the back-stitch cross three forward-stitches and vertical and
standing element between coils. At Mesa Verde, Pueblo Bonito, and the
Gallup cache, the terminals generally are braided in this manner. These
whole rims also are braided with the same technique, one each at Mesa
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terminating in false braid. Another shows rim slip from Bear Cave
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It appears, then, that from 900 A.D. to 1300 A.D. the center
for the production of braided rim continues near the middle of the
Pueblo area. A shift occurs from west-central to east-central area, and

influences from this region appear to extend south rather than north. Technically, there is a change from the early use of a false-braided back-stitch which crosses two forward-stitches to a back-stitch which crosses three forward stitches. Another change is the position at which the back-stitch is thrust through the work surface. Formerly, this stitch penetrated the preceding coil; in the later period it encircled the standing element between the work coil and the preceding coil. The foundations occurring with false-braided rims in the later period are almost as variable as the foundations used in the preceding periods. One-rod foundations, however, no longer are continued and three-rod-triangular forms become apparent. Plain stitching is favored, but the multiple-stitch-and-wrap technique is used on a basket at Mesa Verde and twelve others at Bear Creek.

During the ethnographic periods, tribes located within the central Greater Southwest zone of false-braiding continue to use this general technique. But certain structural changes are visible. The most notable change is the raising of the back-stitch so that it either penetrates or encircles the top element of the rim foundation.

In the eastern part of the Pueblo area, Jicarilla, Jemez, and until recently Santa Ana, Zia, San Juan, and Santa Clara weavers apply the braided rim to coiled baskets. The back-stitch, as manipulated by these weavers, crosses two forward-stitches and penetrates the top element of the rim foundation. Whole rims are covered in this manner, except one basket at Zia which has the last inch braided.

In the central part of the Pueblo area, the Ute and Navaho use the same braiding technique as their eastern neighbors. Near the Colorado River, the southern Paiute, Havasupai, and Walapai manufacture braided

coiled basket rims. Spier describes the Havasupai technique as having a back-stitch which crosses four forward stitches and encircles the top rod of the three-rod-triangular foundation. He notes that a Walapai basket rim shows the same technique. A basket in Ellis' collection, possibly of Havasupai manufacture, has a back-stitch which crosses three forward-stitches and penetrates the top rod of the rim foundation.

Other tribes in the Greater Southwest who use a false-braided rim are the Pima and Papago of southern Arizona and possibly the Diegueño and Kawia of southern California and the Mescalero Apache of southeastern New Mexico.

The Navaho, Jicarilla, and possibly the Mescalero may have borrowed the chevron rim idea from people living in the Pueblo area. An alternate explanation is that these Athapascans brought the concept with them from Canada. Some of their Canadian relatives as well as some tribes in British Columbia manufacture a false-braided rim which has a back-stitch that crosses two-forward stitches and penetrates the rim coil. When viewed from the work-surface, the apex of the chevron points to the right, whereas it points to the left in the Southwest.

The Pima and Papago adopted false-braiding during the ethnographic period. The type is basically like the Pueblo method: the back-stitch crosses two forward-stitches and penetrates the top part of the rim foundation. Although not enough information is available about Diegueño and Kawia braiding, presumably the weavers were influenced by groups living in the Southwest.

colored basket rim. Spier described the Havasupai technique as having a back-stitch which crosses four forward stitches and underlies the top rod of the three-rod-tiered foundation. He notes that a Havasupai basket rim shows the same technique. A basket in Miller's collection, possibly of Havasupai manufacture, has a back-stitch which crosses three forward-stitches and penetrates the top rod of the rim foundation. Other tribes in the Greater Southwest who use a three-rod-tiered rim are the Pima and Papago of southern Arizona and possibly the Diahuéno and Lavi of southern California and the Hualapai of southeastern New Mexico.

The Navaho, Hicahila, and possibly the Hualapai may have borrowed the chevron rim idea from people living in the Pacific area. An alternative explanation is that these Athapascans brought the concept with them from Canada. Some of their Canadian relatives as well as some tribes in British Columbia manufacture a rim-included rim which has a back-stitch that crosses two-forward stitches and penetrates the rim cell. When viewed from the west-side, the apex of the chevron points to the right, whereas it points to the left in the Southwest.

The Pima and Papago adopted false-branding during the ethnographic period. The type is basically like the Pueblo method: the rim-stitch crosses two forward-stitches and penetrates the top part of the rim foundation. Although not enough information is available about Diahuéno and Lavi weaving, presumably the weavers were influenced by groups living in the Southwest.

15. Tray and Bowl Coiled Shapes

Morris and Burgh adequately summarize the history of tray and bowl shapes for the Pueblo area.

The one observable trend is a difference in size: trays become smaller; bowls larger. In all periods trays and bowls are more abundant than any other forms...The histories of the bowl and tray are good evidence of unbroken continuity of the basketry art among the Anasazi...Despite the fact that both forms have been common wherever basketry is made, there is no reason to suppose that any outside influence was exerted... [These shapes] are so similar in all periods that they do not serve as sensitive indicators of age. Undated specimens can be allocated only on other evidence, such as technique and design.¹¹

16. Truncate-cone Coiled Shape

Archaeologically, truncate-cone or conical, flat-bottom forms are found on the Colorado Plateau, along the upper San Francisco-Gila Rivers and in the Hueco-Guadalupe mountains. This shape may have been more widely distributed, for it is found among a number of tribes during the ethnographic period.

Deep and shallow variants of this form occur in the Pueblo area. In the early periods the shapes are short and small; occasionally a slight outward flare at the rim is discernible. During the later periods, the forms become taller, larger, and more symmetrically proportioned.

Between 200 A.D. and 500 A.D., the relatively deep conical shape is found in the Kayenta district, while the shallow form occurs to the north-west at DuPont Cave.

¹¹ Morris and Burgh, op.cit., 27.

15. Tray and Bowl Colored Shapes

McKris and Burgh adequately summarize the history of tray and bowl shapes for the Pueblo area.

The one observable trend is a difference in that tray becomes smaller, bowls larger. In all periods trays and bowls are more abundant than any other forms. The distinction of the tray and bowl are good evidence of unbroken continuity of the basketry art among the Anasazi. Although the first tray bowl forms have been common wherever basketry is made, there is no reason to suppose that any definite influence was exerted. [These shapes] are so similar in all periods that they do not serve as sensitive indicators of age. Unusual variations can be attributed only on other evidence, such as technique and design.

16. Transverse-convex Colored Shapes

Archaeologically, transverse-convex or conical, flat-bottom forms are found on the Colorado Plateau, along the upper San Francisco-Gila Rivers and in the Huaco-Guadalupe mountains. This shape may have been widely distributed, for it is found among a number of tribes during the entire graphic period.

Deep and shallow variants of this form occur in the Pueblo area. In the early periods the shapes are short and squat; occasionally a slight outward flare at the rim is discernible. During the later periods, the forms become taller, larger, and more symmetrically proportioned. Between 500 A.D. and 800 A.D., the relatively deep conical shape is found in the Kayenta district, while the shallow form occurs to the north-west at Dolan Cave.

Later, from 500 A.D. to 1100 A.D., the forms become larger and probably were produced by a number of weavers in the Pueblo region.

Southeast of the Pueblo area, between 500 A.D. and 800 or 900 A.D., the truncate-cone shape is evident in the Hueco-Guadalupe region and at one site on the upper Gila River. The forms depicted for Hueco area of the deep variety; one basket has the Basket Maker II slightly flaring rim shape.

While a general truncate-cone shape appears from the Pueblo area southeast into the Guadalupe mountains, there are variations in the foundations. The two-rod-and-bundle-triangular type is distributed through the Pueblo area southeast into the Hueco region; the bundle-with-rod-core goes from the Hueco to the Guadalupe mountains; and the bundle foundation is evidenced in the southern part of the Guadalupe.

By 1100-1300 A.D. the shallow and deep forms reach their maximal size in the Pueblo area; both types are popular at Mesa Verde. The deep basket occurs at a cache near Gallup, and the shallow forms is represented at Canyon del Muerto. To the west, in the Flagstaff region, the truncate-cone appears at Medicine Cave (1050 A.D.), Winona, and Hidden House; at Hidden House, the basket is similar to the shorter Mesa Verde type. To the southeast, in the upper San Francisco-Gila-Mimbres area, the people continue to produce the general form.

17. Cylindrical Coiled Shape

Fourteen cylindrical baskets and a number of fragments occur archaeologically in the Greater Southwest. Most of these specimens are restricted to the Pueblo area; two come from the Flagstaff district and two are found in the Hueco region.

later, from 500 A.D. to 1100 A.D., and from 1100 A.D. to 1500 A.D.

probably were produced by a number of sources in the Pueblo region.

Southeast of the Pueblo area, between 500 A.D. and 1000 A.D.

900 A.D., the same type is evident in the same region.

region and at one site on the upper Rio Grande, the same type is

found. These areas of the deep variety are located in the same region.

During the same

While a general statement can be made about the Pueblo

area southeast of the Pueblo area, there are variations in

the distribution. The two- and three-lobed types are distributed

through the Pueblo area southeast into the same region, the same type

red-core goes from the Pueblo to the same region, and the same

formation is evidenced in the same part of the distribution.

By 1100-1300 A.D., the shallow and deep forms reach their maximum

also in the Pueblo area; both types are popular at Mesa Verde. The deep

baskets occur at a cache near Gallup, and the shallow form is represented

at Canyon del Mar. To the west, in the Flagstaff region, the same

core appears at Medicine Cave (1000-1100 A.D.), and at Hidden House; at

Hidden House, the baskets are similar to the shallow Mesa Verde type. To

the southeast, in the upper San Francisco-Olin region, the same

continue to produce the general form.

17. Cylindrical Colored Baskets

Fourteen cylindrical baskets and a number of fragments were

archaeologically in the greater Southwest. Most of these specimens are

restricted to the Pueblo area; two come from the Flagstaff district and

two are found in the same region.

There are indications of an increase in height over a period of time for the cylindrical form. The form, also, is made with a one-rod foundation; but an invariant association is not strictly indicated.

At Mesa Verde, a cylindrical basket occurs between 200 A.D. and 500 A.D. In the west-central part of the Pueblo area, during the next period, a cylindrical basket is represented at Prayer Rock and another, just to the south, at Canyon del Muerto. These three baskets range in height from 5 cm. to 10 cm., and except for the random foundation at Muerto they are made with a one-rod foundation, stitch variable.

At Ceremonial Cave, in southeastern New Mexico, a cylindrical basket of undetermined size is made with a bundle foundation; it seems probable that the idea of a cylindrical form diffused south into the Hueco area.

Between 900 A.D. and 1300 A.D., other cylindrical baskets are found at Mesa Verde, Aztec, Pueblo Bonito, Winona, and near El Paso. The short form is manifested at Mesa Verde, while at Pueblo Bonito a tall symmetrical form is indicated. One specimen at Pueblo Bonito does not have a bottom and may be a wristlet; it is encrusted with a mosaic of turquoise stones. Another such wristlet comes from Winona and a third was discovered at a site near El Paso.

Between 1300 A.D. and 1540 A.D., a cylindrical basket occurs at Chevelon Ruin, just southwest of the Pueblo area.

The Jicarilla Apache produce tall and short cylindrical baskets, using a three-rod-triangular foundation. These northern Apache may have adopted the form from some Pueblo group.

There are indications of an increase in height over a period of time for the cylindrical form. The form, also, is made with a rounded foundation; but an inverted association is not strictly indicated.

At Mesa Verde, a cylindrical basket occurs between 800 A.D. and 900 A.D. In the west-central part of the Pueblo area, during the next period, a cylindrical basket is represented at Canyon del Huerfano. Just to the south, at Canyon del Huerfano, these three baskets range in height from 5 cm. to 10 cm., and except for the rounded foundation at Huerfano they are made with a rounded foundation, which is variable.

At Canyon del Huerfano, in southeastern New Mexico, a cylindrical basket of undetermined size is made with a beaded foundation; it seems probable that the idea of a cylindrical form differed greatly into the Huerfano area.

Between 900 A.D. and 1300 A.D., other cylindrical baskets are found at Mesa Verde, Aztec, Pueblo Bonito, Chaco, and near El Paso. The short form is manifested at Mesa Verde, while at Pueblo Bonito a tall symmetrical form is indicated. One specimen at Pueblo Bonito does not have a bottom and may be a whistlet; it is represented with a beaded or turquoise stones. Another such whistlet comes from Chaco and a third was discovered at a site near El Paso.

Between 1300 A.D. and 1500 A.D., a cylindrical basket occurs at Chaco, just southeast of the Pueblo area.

The Jarilla Apache produces tall and short cylindrical baskets, using a three-rod-tandem foundation. These northern Apaches may have adopted the form from some Pueblo group.

18. Burden Basket Coiled Shapes

Coiled burden baskets have a limited distribution in the Greater Southwest. The forms, archaeologically, are almost entirely confined to the Pueblo area. During the ethnographic period, certain types are produced by the southern Ute, Llanero Jicarilla, and the Mission tribes.

Conical burden baskets with pointed bottoms were made between 200 A.D. and 500 A.D. in the western part of the Pueblo area in the Kayenta district, and at Allen Canyon.

During the next period, 500 A.D. to 700 A.D., the conical form persists in the western region, occurring now at Battle Canyon, Grand Gulch, and Prayer Rock. A clay effigy of a similar basket form was obtained at Canyon del Muerto.

From the conical burden basket, another form begins to evolve. This is the wedge shaped carrying basket, which typologically progresses from a flat bottom through a basal arch to a deep bifurcated crotch.

At Kayenta and Shabik'eschechee Village, 500 A.D. to 700 A.D., clay effigies depict the wedge shaped basket with a flat base. A miniature basket, at Muerto, is similarly formed. Four large baskets, from the same site, have a similar plan with a slight basal arch.

On the wedge shaped basket, the rim becomes more flaring and the bottom more arched between 700 A.D. and 900 A.D. Such a basket is found in the Kayenta district of the western Pueblo area. The concept evidently moved southeast out of the Pueblo domain at this time, for a clay replica with a flat base is evident at Harris Village on the Mimbres

Called Jordan baskets have a limited distribution in the
Greater Southwest. The form, undoubtedly, is somewhat
confined to the Texas area. During the same period, certain
types are produced by the southern Ute, Navajo, and
Mescal tribes.

Central Jordan baskets with colored designs were common
200 A.D. and 500 A.D. in the western part of the Texas area in the
Keweenaw district, and at Allen Canyon.
During the next period, 500 A.D. to 700 A.D., the
patterns in the western region, occurring now in the Ute, Navajo,
Gila, and Hopi areas. A clay tablet of a similar basket form was
obtained at Canyon del Muerto.

From the central Jordan baskets, another form, the
This is the wedge shaped carrying basket, which is found in the
from a flat bottom through a basal band to a deep fluted rim.
At Keweenaw and Black's Landing, 500 A.D. to 700 A.D.,
clay tablets depict the wedge shaped basket with a flat rim.
At Keweenaw, is similarly found. Four large baskets, in the
same site, have a similar plan with a slight basal band.

On the wedge shaped basket, the rim shows a slight
the bottom were found between 700 A.D. and 900 A.D. in the
found in the Keweenaw district of the western Texas area.
evidently moved southeast out of the Ute area to the
clay replica with a flat base is without a basal band.

River and a basket near Las Cruces has the basal arch and body shape of the Kayenta type. Other clay effigies, probably representing the basket, are found at site 33 on the La Plata River and in the Fremont River region north of the Pueblo area. The former find resembles the basal arch basket type, while the latter specimens are similar to conical, pointed bottom baskets.

Between 900 A.D. and 1300 A.D., the wedge shape reaches its most elaborate style. The base is arched sharply upward, creating a pair of legs at the bottom. This bifurcated form is found at several sites around the Four Corners region. It occurs at Kayenta, Moki Canyon, Allen Canyon, Pueblo Bonito, and Canyon del Muerto.

Judd compares the Pueblo Bonito baskets with those in the western part of the Pueblo area and concludes that the western sub-type is taller, less V-shaped, and coarser in weave.

Clay effigies, which may be replicas of the Pueblo Bonito bifurcated basket, occur at Aztec, Pueblo Bonito, and near Houck, Arizona. These effigies may indicate that some kind of superstructure was used with the bifurcated baskets; several effigies have uprights supporting miniature clay jars, while others have a U-shaped bar attached upright at the back of the rim.

At Painted Cave, geographically inside the distribution of bifurcated baskets, there is a wedge shaped basket with a slight basal arch. Apparently a method which persists from Pueblo I, the form shows some differences; the walls rise from the base at a high angle, jut outward slightly above the middle, and then continue at the same high angle as before. A similar basket, presumably with a flat base, is found nearby at Vandal Cave.

bottom baskets. Basket type, while the latter specimens are similar to basket, painted north of the Pacific area. The former find resembles the one I found are found at site 13 on the La Plata River and in the Francisco River region. Other clay ellipses, possibly representing the basket, River and a basket near Las Grutas has the vessel rim and body shape of

At Painted Cave, geographically inside the distribution of
 illustrated baskets, there is a wedge shaped basket with a slight
 arch. Apparently a method which parallels from Pacific I, the form shows
 some difference; the walls rise from the base at a high angle, but not
 very sharply above the middle, and then continue at the same high angle
 as before. A similar basket, presumably with a flat base, is found
 nearby at Vandal Cave.

During the ethnographic period, the southern Ute, except at Mowatci, make a coiled conical, round bottomed carrying basket. Their Llanero Jicarilla neighbors evidently prefer the flat bottomed form. On the Pacific coast, the Mission tribes produce baskets which are broader than they are deep. Kroeber states, "It is obviously not a form that originated for transport, but a receptacle or pot put secondarily to burden use."¹²

19. Other Coiled Shapes

Globular forms appear in the Pueblo area between 200 A.D. and 700 A.D. The shapes are variable and in most instances they are miniatures. At Kayenta a type which has the greatest diameter half-way between the base and mouth exists in conjunction with a wide base globular specimen. The wide base type with narrow mouth is found on a larger basket at nearby Muerto. At DuPont Cave another globular form approximates a bowl shape. A pointed bottom, wide shoulder, globular water bottle may have been produced in some quantity at Kayenta, but the type evidently disappeared after the introduction of pottery. During the latter part of the period, a narrow base globular basket with the greatest diameter near the mouth is evident at Canyon del Muerto. At Hidden House in central Arizona, a similarly shaped basket was made in 1275 A.D.

¹² Kroeber, Handbook, 1925, 698.

Elliptical trays were produced at Pueblo Bonito between 900 A.D. and 1100 A.D.; Judd believes that these baskets may be unique in the Southwest.

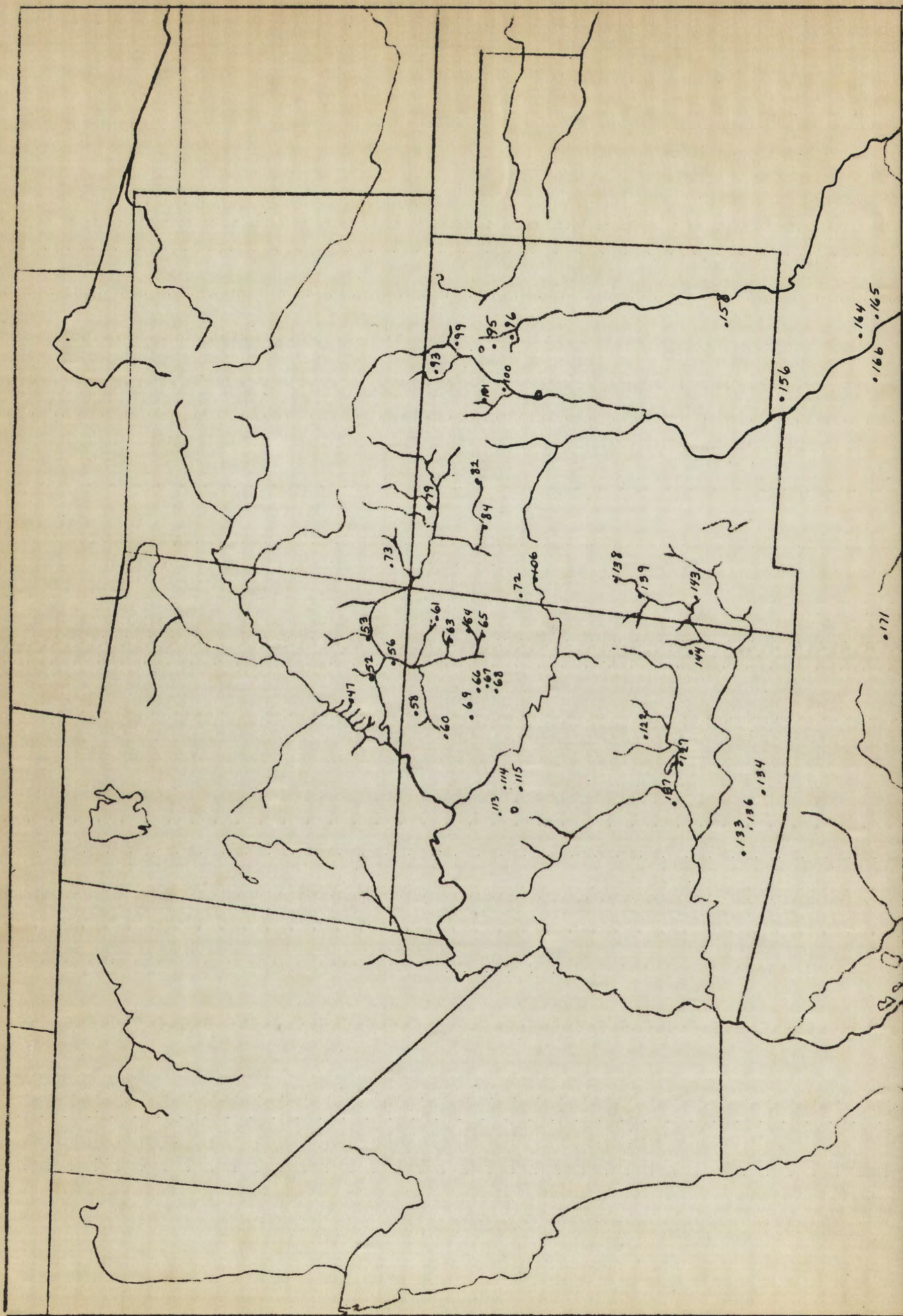
Today, eccentric shapes are sometimes produced by various tribes generally upon demand by Europeans. However, most of the old Pueblo baskets at Hopi, Zuni, Zia, and Santa Ana have wide bases with the greatest body diameter near the bottom; most of these baskets also have necks. Several round bottom globular jars with necks were found in the nineteenth century at Oraibi. One ~~hourglass~~ shaped basket is similar to the coiled water bottles of the M̄watavqatsiu and Moanut Ute. The round bottom jar with a neck and pitched with pinyon gum on the inside is used by most of the Ute of Colorado and Utah. On the other hand, flat bottom globular jars also with necks and pitched on both sides are found among the southern Ute, Navaho, and certain Apache groups.

The forms listed in this section for the Pueblo area often are found among other tribes. But missing for these groups and the areas they occupy is the information which would indicate whether the types diffused into or out of the Pueblo region.

20. Plaited Baskets

Widely distributed in the New World, plaited baskets are found along the North West Coast and in eastern North America. Between these two areas, plaited baskets occur in the Southwest and northern Mexico. In Central America, the Antilles, and the northern half of South America plaited ware is a dominant basketry type. Figure 11 presents the distribution of plaited baskets in and around the Pueblo area.

FIGURE 12



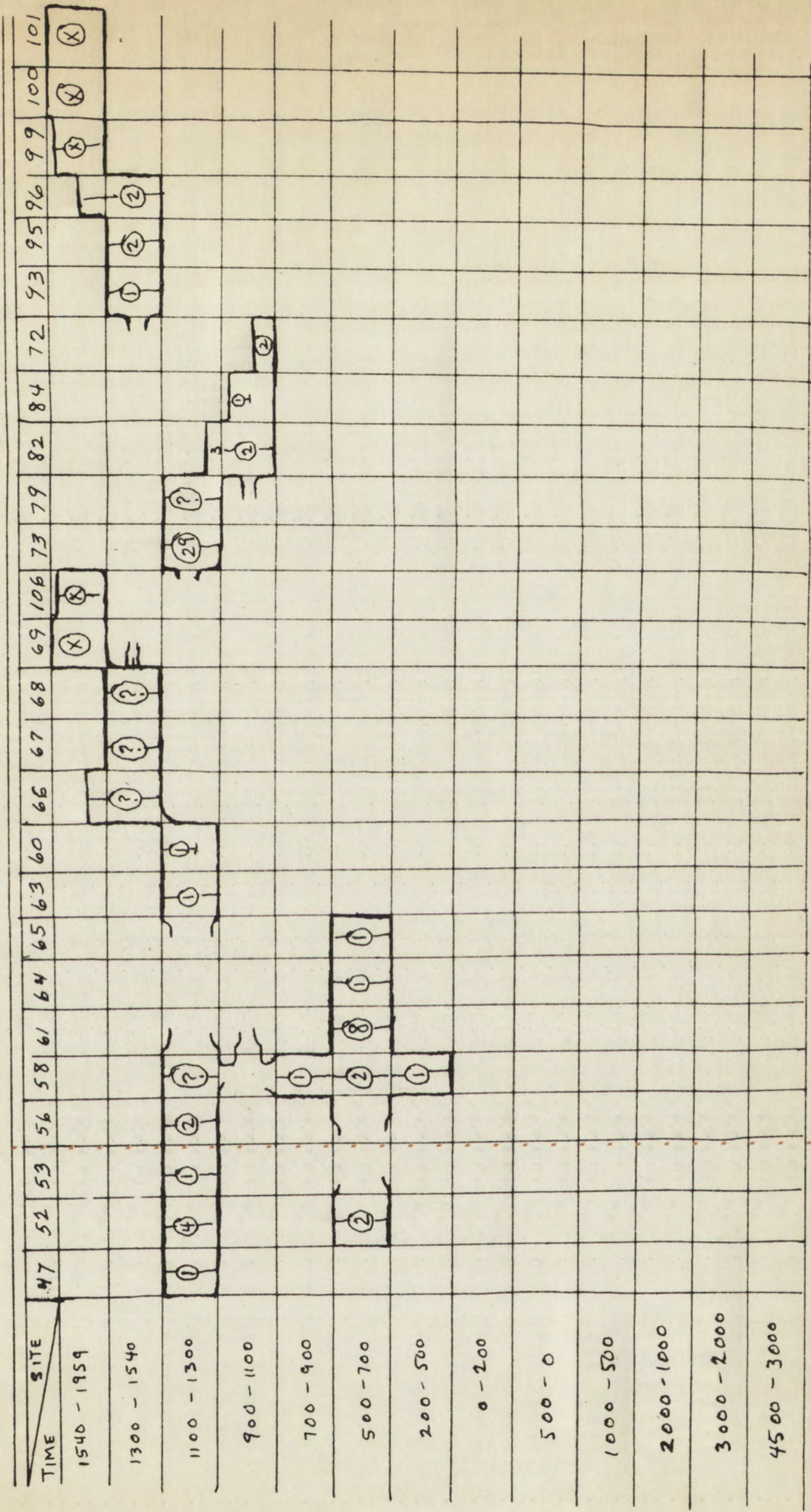


FIGURE 1A
DISTRIBUTION OF PLATED BASKETS

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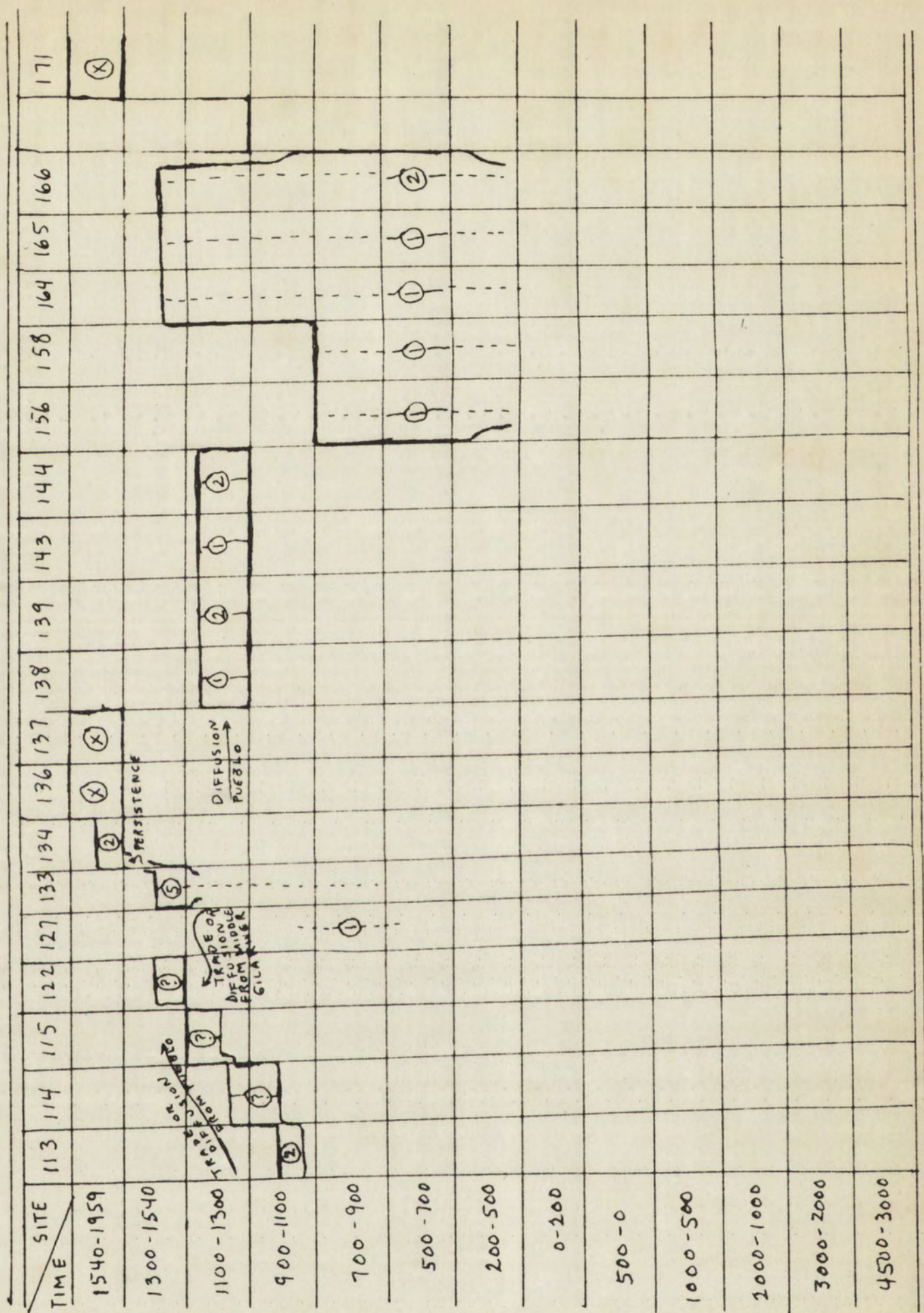


FIGURE 12
DISTRIBUTION OF PLATED BASKETS

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In the Southwest, plaited baskets are found within an area bounded on the northwest by the Colorado River and on the southwest by the Verde River of Arizona. The area then juts west to include the middle Gila and upper Sonora regions. In the north, plaited baskets are distributed along the San Juan River and to the east along the south Canadian River. Such baskets also are represented on the Pecos River and in the Hueco and Big Bend regions.

In the Pueblo area the earliest evidence of plaited baskets is at Kayenta. One specimen, dating between 200 A.D. and 500 A.D., is globular and plaited in an over-two-under-two interval, probably woven from the rim downward.

During the next period, 500 A.D. to 700 A.D., similar baskets are found at Grand Gulch, Canyon del Muerto, and Canyon de Chelly. One form at Muerto is cylindrical without a woven base, and a basket at Grand Gulch manifests a plaited collar which, if dated at this time, is the first representation of a technique used four hundred years later.

Another style is introduced in this period. At Prayer Rock a number of mats are plaited over-two-under-two and pressed down into wooden hoops. The ends of the weaving strands are bent around the hoop and secured to the wall by a row of twining. Circular shallow trays are the preferred early form. In succeeding periods this type, known as a yucca ring basket, replaces the globular form woven from the rim down.

At the present time, it is impossible to determine if Morris and Burgh are correct in assuming that plaited baskets in the Pueblo area are derived from the braided yucca bag. The cone shaped bag is manufactured from a yucca plant which is suspended with the leaves pointing down. The leaves, then, are plaited over-one-under-one.

The problem is one of assigning dates to non-Pueblo material.

There are plaited baskets in the Ozark Bluffs to the east and in the Trans-Pecos to the south.

Eastern North American plaited baskets are summarized by Speck.¹³ He concludes that there was a three-pronged diffusion northward from the lower Mississippi valley. One path led up the Atlantic coast, another went through the Cherokee region into the Iroquois area, and a third followed the Mississippi. In the north-central plains, the Mandan, Hidatsa, and Arikara plaited burden baskets are believed by Douglas to be derived from the southeast, possibly the Caddoan area.¹⁴ Douglas points out also that these three tribes use a U-shaped rod frame in their burden basket which is reminiscent of the type used by Southwestern tribes.

The Ozark Bluff Dweller plaited baskets are woven in a number of plaited intervals. The shapes also vary from square trays and square-bottomed convex-sided containers to oblong trinket baskets. Intricate patterns are common. Cane is used for splints. Most of these features are found on Chitimacha baskets in Louisiana. The Ozark carrying basket, Choctaw pack basket, and more northern forms incorporate a coiled type of rim.

If plaited baskets were manufactured early in the lower Mississippi valley, later in the Ozarks, and still later in the Pueblo area, the implications, excluding for the moment the Trans-Pecos area, would be that a northwestward diffusion of the plaited basket concept had occurred. On the other hand, if the dates at the localities were reversed, a southeast-

¹³ Decorative Art and Basketry of the Cherokee, 1920, 64-68.

¹⁴ Material Culture Notes, 1941, 63.

The problem is one of assigning dates to non-Indian material.
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¹³ Descriptive Art and Handwork of the Cherokee, 1930, pp. 55-57.
¹⁴ Material Culture Notes, 1931, 63.

ward diffusion would be implied. Speck sees a number of similarities between the southeastern North American type and the Circum-caribbean-South American type. Furthermore, he hypothesizes a northward movement of the idea from South America or the Antilles.

The Trans-Pecos area, south of the Pueblo and Ozark regions, includes the Hueco, Big Bend, and southern Pecos River. In the western part and at one site in the Guadalupe mountains, the plaiting is over-one-under-one; forms are rectangular trays and square-bottomed, round-sided containers. Rims generally are constructed with the aid of a wooden hoop, but the shape is attained by weaving and not by forcing the material down into the hoop.

Similar forms are found in the middle and eastern part of the Trans-Pecos region. Here, the interval is over-one-under-one and over-two-under-two. The rim is composed of a coiled bundle foundation which approximates the Ozark type.

Although plaited baskets probably were made in the Trans-Pecos region between 500 A.D. and 1400 A.D., the beginning date is not satisfactorily established. Baskets from the earlier levels are associated with a Basket Maker-like complex, but the artifacts are so generalized and widespread that it would be difficult to derive them specifically from the Pueblo area.

Summarizing the early periods of plaited baskets, there are three productive regions: the Pueblo, Ozark Bluff, and Trans-Pecos. Although the concept of plaiting is shared, the baskets in each area are distinctive with respect to technical details. This fact may mean that the concepts of plaited basketry in the three regions are indirectly

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The Trans-Pecos area, south of the Pueblo and Goshute regions, includes the Hueco, Big Bend, and southern Pecos River. In the western part and at one side in the Guadalupe mountains, the plaiting is over-one-under-one; forms are rectangular, trays and square-bottomed, round-sided conical. Rims generally are constructed with the aid of a wooden hoop, but the shape is attained by weaving and not by forcing the material down into the hoop.

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Summarizing the early periods of plaited baskets, there are three productive regions: the Pueblo, Goshute, and Trans-Pecos. Although the concept of plaiting is shared, the baskets in each area are distinctive with respect to technical details. This fact may mean that the concept of plaited baskets in the three regions are indirectly

related, or that the people in each area independently discovered how to plait baskets.

Returning to the sequence of basketry in the Pueblo area, a yucca ring bowl occurs between 700 A.D. and 900 A.D. in the Kayenta district. The weave is over-three-under-three. During the next period, 900 A.D. to 1100 A.D., a similar bowl is found in the eastern Pueblo area at Pueblo Bonito. At Bonito, a square tray with a wooden hoop rim also is present. Nearby, at Leyit Kin, an over-two-under-two woven basket occurs and another basket is found at the Village of Great Kivas.

To the west, the idea of yucca ring baskets may have entered the Flagstaff region. At Winona, an over-two-under-two plaited bowl has a rim constructed by bunching the strand ends into a roll and attaching this to a wooden hoop. The standard yucca ring bowl with an over-two-under-two interval occurs at a neighboring site, Medicine Cave.

Between 1100 A.D. and 1300 A.D., the dominant type of basketry in the Pueblo area is the yucca ring bowl with either plain or ornamental rim. Plain rims have the ends of the weaving strands bent over the wooden hoop and attached to the basket side by a row of twine. Ornamental rims in addition have a plaited band which encircles the outside fringe just below the wooden hoop.

In the western part of the Pueblo area, plain rims predominate; they occur at Butler Wash, Grand Gulch, Painted Cave, Canyon del Muerto, Canyon de Chelly, Betatakin, and certain sites in the Kayenta district. Plain rims also extend west into the Flagstaff district. Prior to 1100 A.D. only one basket is found with a rim braid: the globular specimen at Grand Gulch in the western region. Another basket with an ornamental rim

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occurs in the western region between 1100 A.D. and 1300 A.D. at Redd Canyon, a tributary of the Colorado River in Utah.

In the eastern part of the Pueblo area, ornamental rims are the dominant type occurring at Mesa Verde, possibly Aztec, Pueblo Bonito (1100 A.D. to 1130 A.D.), and to the south at Higgins Flat Pueblo and Tularosa Cave.

Globular jars with necks, wooden hoop rims, and plaited neck bands are found at Mule Creek, upper Gila River and Bear Creek, and upper San Francisco River. Southeast, one basket with a braided rim band occurs near the terminus of the Pecos River.

The weave interval for plaited baskets in the western zone, between 1100 A.D. and 1300 A.D., is variable but tends to be over-two-under-two. In the eastern zone, including the southward extension of ornamental rimmed baskets, the interval is over-three-under-three.

In western Chihuahua, between 1100 A.D. and 1450 A.D., cliff-house material includes plaited baskets which are woven over-one-under-one or over-two-under-two. The forms are globular and tray shaped. Eastward, people living in the Big Bend region continued to plait baskets until 1400 A.D.

Between 1300 A.D. and 1540 A.D., yucca ring baskets are found in the eastern Pueblo area at Riana and Pecos Pueblo. The type probably extends eastward into the Texas Panhandle at Antelope Creek Phase sites. In the western part of the Pueblo area, Hopi-like yucca ring baskets occur at Sikyatki, Jetyto Wash, and Awatobi. The weave interval may be over-two-under-two or over-three-under-three; baskets at Pecos are over-two-under-two and one at Riana is over-three-under-two. In the east and west zones wooden hoops and plain rims are the style.

To the south at Sierra Ancha one basket is made in the Pueblo manner and another in a style characteristic of tribes living to the south. The latter basket was shaped into a square tray while it was woven; the rim is self-plaited. Both baskets are woven over-two-under-two. Several fragments of plaited basketry with the same interval occur at Ventana Cave to the south.

During the ethnographic period, yucca ring baskets probably were made at most of the Pueblos. Adequate information exists for a comparison between Jemez in the east and Hopi in the west.

Hopi plaited baskets are more like the archaeological types in using one weaving strand as a unit, whereas the Jemez use two strands placed side by side as a unit. In both Hopi and Jemez baskets, the plaited interval is over-three-under-three. Like the Pueblo III weavers, the Hopi use a number of structural designs; the patterns are emphasized with various natural shades of the yucca leaf. Jemez baskets, on the other hand, depict only concentric diamond designs; the entire basket is woven with the light green strands of bear grass (*Nolina*). Yucca also is used by Rio Grande Pueblo weavers. Hopi basket shapes are shallow bowls or square short-sided trays, while at Jemez deeper bowls tend to be made.

Several aberrant baskets collected from Hopi and Zuni in the late eighteen-hundreds are cylindrical with inward slanting sides, woven over-two-under-two, and have the weaving strands bent over a wooden hoop. The shape, but not the wooden hoop at the rim, is characteristic of baskets produced by tribes living in southern Arizona and northern Mexico. Another deviant type is the Hopi piki tray which is flat, contains an over-two-under-two plait, and has a wicker border.

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In southern Arizona, the Pima and Papago may have acquired the technique of plaiting baskets within the last six hundred years from groups living in northern Mexico. In the ancient Hohokam complex of the middle Gila-Salt Rivers, plaited baskets were never popular, only five fragments being found at Ventana Cave. Furthermore, the modern Pima-Papago baskets are similar in technical features, especially shapes and self-plaited rims, to baskets manufactured by the Tarahumara and Yaqui. The Yaqui and Tarahumara, in turn, have baskets which are similar to plaited baskets of other tribes living in Central and South America.

The archaeological and ethnographic evidence suggests that the practice of plaiting baskets entered the Southwest from the south or east at more than one time.

It appears that the technique of plaited baskets first entered the Southwest from the Ozark Bluff or Trans-Pecos area. The recipients in the Pueblo region did not construct the bottom and shape the basket while weaving. Instead, they wove a globular form from the mouth downward and attached a false bottom at the base.

The Pueblo weavers soon introduced an innovation by weaving a mat and forcing it into a wooden hoop to form a shallow tray, later a round bottomed bowl. The yucca ring basket technique then continued into the ethnographic period. From time to time, elaborations were made upon this basic style.

To the south, in the middle Gila-Salt Rivers region, some people acquired the idea of plaiting baskets near the end of the archaeological period from groups living farther south. Cylindrical and trunk-like forms with slip-on covers, and self plaited rims are the features which contrast the baskets of the Pima-Papago with those of the Pueblos.

In southern Arizona, the Pima and Papago are now acquiring the technique of plaiting baskets within the last six hundred years from groups living in northern Mexico. In the ancient Hohokam culture of the middle Gila-Salt River, plaited baskets were never produced, only the fragments being found at Ventana Cave. Furthermore, the modern Pima-Papago baskets are similar in technical features, especially shape and self-plaited rim, to baskets manufactured by the Tarascan and Aztec. The Yupa and Tarascan, in turn, have baskets which are similar to plaited baskets of other tribes living in Central and South America. The archaeological and ethnographic evidence suggests that the practice of plaiting baskets entered the Southwest from the south at least at more than one time. It appears that the technique of plaited baskets first entered the Southwest from the Gila-Salt or Trans-Pecos area. The technique in the Pueblo region did not contrast the Pima and Papago, whose baskets while weaving. Instead, they were a glacial form from the north and west and attached a false bottom at the base. The Pueblo weavers soon introduced an innovation in weaving a mat and forcing it into a wooden hoop to form a shallow tray, later a round bottomed bowl. The quincunx basket technique then continued into the ethnographic period. From time to time, innovations were made upon this basic style. To the south, in the middle Gila-Salt River region, some people acquired the idea of plaiting baskets near the end of the archaeological period from groups living further south. Cylindrical and bowl-like forms with clip-on covers, and self-plaited rims are the features which contrast the baskets of the Pima-Papago with those of the Pueblo.

21. Wicker Baskets

Wicker baskets are distributed interruptedly in North, Central, and South America. The productive localities, however, are so widely separated that this discussion will concentrate only upon the Greater Southwest occurrences.

Three types of wicker baskets are found in the Greater Southwest. These are the Lovelock, Hopi, and Rio Grande wicker styles. A technical comparison of the three types is presented in Figure 12.

Lovelock wicker is confined to northwestern Nevada. The type may be represented at Fishbone Cave, between 8000 B.C. and 5000 B.C. Such baskets are found at Winnemucca Lake Cave, 1500 B.C. to 500 B.C.; Humbolt Cave, 500 B.C. to 1500 A.D.; Lovelock Cave, 1500 B.C. to 1500 A.D.; and at a cache near Leonard Rockshelter, 500 B.C. to 0 B.C.

Heizer and Kreiger believe that Lovelock wicker is an invention restricted to the old Lake Lahontan region. Furthermore, these authors point out that the last few inches of deposits at Humbolt and Lovelock Caves contain a different type of basket, diagonally twined, which is produced by the Paiute. Thus, a specific kind of wicker basket may have been made in the western part of the Great Basin for nearly ten thousand years.

Five hundred miles southeast of the Lahontan region, a different wicker basketry style appears between 1300 A.D. and 1540 A.D. Hopi-like wicker baskets are found at Chevelon Ruin, Sierra Ancha, and possibly at Bear Creek. Near Flagstaff, Fewkes discovered wicker baskets at Palatki

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wicker baskets are found at Chevelon Lake, Shasta Area, and possibly at

Hot Creek, New England. Fewer discovered wicker baskets at Palatki

FIGURE 12

Wicker Basket Types

	<u>Lovelock</u>	<u>Hopi</u>	<u>Rio Grande</u>
<u>Shape</u>	Conical burden.	Variety of shapes.	Flat bottom, flaring-sided bowl.
<u>Start</u>	<p>Warps radial, butts not joined forming hole in center.</p> <p>Starting weave of 5-6 courses of twining around pairs of willow stems.</p>	<p>Two-unit structure: varying number of stems wrapped or wickered from one unit which is laid at right angles across another unit. Both units held in place by wicker.</p>	<p>Two or more layers of stems crossed at varying angles and held in place by wicker.</p> <p>As with Hopi type, the center stems protrude forming part of the wall warps.</p>
<u>Weave</u>	<p>One-rod (peeled) warp unit.</p> <p>Two thin weft strands (peeled) act as a unit, overlap or set side by side. Warps increase fairly regularly.</p>	<p>Two-rod (nonpeeled) warp unit; other rods may be added.</p> <p>One weft strand (peeled).</p> <p>Warps increase in an orderly fashion of bifurcation effecting bands, generally three.</p> <p>Compact and open textures.</p>	<p>Two-rod (nonpeeled) warp unit which increases to 4 or 6 rods</p> <p>One weft strand (nonpeeled or peeled).</p> <p>Open.</p>
<u>Finish</u>	<p>Several twined courses at selvage zone.</p> <p>Two rods as a unit proceed to rim, bent down and plait 1-1 back to first twine course.</p>	<p>Coiled type of rim, 1-rod from each warp bent and twisted across two rods forming a 3-rod foundation; stitch \.</p>	<p>Selvage zone: 4 to 6 rods of the warp continue to rim and bent down plait 1-1 back to wicker wall and form part of a 3-unit braid around top of wall.</p>
<u>Decoration</u>	Geometric designs	Geometric designs, katchina masks.	Plain or few encircling bands.

and Hononki. Another group of sites are clustered in the Hopi region; the Sikyatki ruin, the ruins along the Jetyto Wash, and the Awatobi ruin all have wicker plaques.

For nineteenth century Hopi and Zuni, several wicker forms are recorded. A small globular form without a neck is used as a carrying basket; rectangular carrying baskets are reported for Hopi, Zuni, and Acoma, while a conical form is made at Hopi and among the Navaho. Shallow utilitarian bowls come from Hopi and Zuni. The Zuni also make a bottle form. All of the above forms are started, woven, and finished in approximately the same manner. The most aberrant types are the rectangular and conical carrying baskets which have U-shaped rod frames.

Today, people at Hopi manufacture the carrying baskets and shallow bowls, but the ceremonial plaques and commercial wicker baskets are made only at Third Mesa.

The Hopi-type of wicker basket is restricted to a short time span and to a small area in the Southwest. It was evidently used on both sides of the Little Colorado River; in the ethnographic period it extended from Hopi through Zuni to Acoma. Today it is found primarily at Hopi.

The third type of wicker basketry is found predominantly in the Rio Grande Valley. This distinctive style also occurs occasionally among western Pueblo groups, but it is not as important as the Hopi wicker type. Specifically, Rio Grande wicker-ware is recorded for San Juan, Santa Clara, Santo Domingo, Laguna, and Hopi. It is made today at Santo Domingo, Laguna, and Hopi.

The origin of the Rio Grande wicker baskets has been the subject of much speculation among ethnologists. There are three hypotheses

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but the evidence is not sufficient to support any one of them. One theory asserts that the type was introduced by the Spanish, with the ultimate place of origin in the Old World. A second hypothesis reasons that it was brought by the Indians who accompanied the Spanish from Mexico. A third guess would have the style derived from an indigenous form, such as Hopi wicker baskets. Hill states that the Santa Clara weavers have a tradition that "this type of basket and the technique was borrowed from the Spanish."¹⁵

22. Twined Baskets

The twined baskets referred to here are those made in the Rio Grande Valley during the eighteen-hundreds. The type has been reported for San Juan, Santa Clara, San Ildefonso, and it occurs today at Santo Domingo. San Felipe, Sandia, and Isleta may have used either the twined or wicker types.

The twined and wicker techniques used in the Rio Grande Valley probably are related methods. Twining and wicker-work often occur together on baskets at San Ildefonso and San Juan. The latter method, however, has the widest distribution, while the former appears restricted to the Pueblos in the Rio Grande Valley.

¹⁵ Hill, MS., 82.

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22. Twined Baskets

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as variations of general B. Pueblo Basketry Development

Prior to the appearance of Basketry in the Pueblo area, four basket-making regions can be defined outside of the area. Northwest in the Great Basin a three-rod-triangular foundation method is associated with an early Desert culture. On the eastern margin of the Basin, another center is at Danger Cave; one-rod-and-bundle-stacked foundations are dominant at this locality and similar fragments are found to the east in the Uncompaghre complex. The third region is south of the Pueblo area, where a two-rod-and-bundle-triangular foundation method is evident in the Cochise complex. Finally, at Ventana Cave, on the western margin of the Cochise area, bundle-with-rod-core and bundle foundation techniques are used. Slightly later, the bundle foundation becomes dominant from Ventana Cave southeast to the Big Bend.

During the first period of basket making in the Pueblo region, between 46 A.D. and 500 A.D., the coiling techniques are derived from the north and south.

From the south, the two-rod-and-bundle-triangular foundation diffuses into the western part of the Pueblo area. Also from the south is the bundle-with-rod-core specimen at Allen Canyon.

Another coiling method, the inverted-half-rod-and-bundle-stacked foundation, has a more uncertain history. Two fragments in the western part of the Pueblo area may be derived from the Cochise area. The method in the latter region is relatively unimportant but persistent. A similar foundation technique with the bundle non-reversed is dominant at Durango

in the eastern Pueblo area. The Cochise-Mogollon and Durango types may be variations of general vertical styles which occur at all times to the north.

From the north, evidence points to a connection between Danger Cave and sites along the northern Pueblo periphery. An intricate stitch technique on a one-rod foundation may have diffused from the Pueblo area to Danger Cave, as implied by Jennings. Supporting such an explanation is the fact that one intricate stitched Danger Cave specimen has a false braid finish. Both techniques are important in the Pueblo region.

On the other hand, an intricate stitched specimen at Danger Cave dates between 2500 B.C. and 2000 B.C. If this date is correct, the method may have diffused from the north. Also there may be some connection between a southward diffusing one-rod simple, interlocked stitch technique and the intricate stitched method on a one-rod foundation.

A half-rod foundation specimen at Durango may or may not be related to a similar type at Danger Cave; Jennings derives the technique at Danger Cave from a one-rod method, but the Durango specimen possibly is a variant of the half-rod-and-bundle-stacked concept.

Possibly indigenous to the Pueblo area are coiled false braided rims, globular forms, truncate cones, and conical burden baskets. These are found in the western zone, but they may have a wider distribution.

Plaited-ware is represented by a globular basket with an over-two-under-two interval woven down from a self-plaited rim. This basket comes from the western Kayenta district. There is no adequate information to support either that plaited basketry diffused into the Pueblo area or that the technique was invented within the region.

Between 500 A.D. and 700 A.D., many basketry techniques are continued in the Pueblo domain. New methods are introduced again from the north and south. Furthermore, several methods are invented within the area.

Persisting in the Pueblo area is the two-rod-and-bundle-triangular foundation method; it remains dominant in the western zone. The one-rod with intricate stitch continues just north of the San Juan River and diffuses south into the Chinlee Wash. In the Prayer Rock locality, intricate stitches become elaborate. A two-rod-and-bundle-triangular foundation with intricate stitch is substituted for the one-rod all along the Chinlee drainage.

False braided rims also continue in the western Pueblo area. Braiding is similar to the earlier style in which the last inch is covered with a sewing splint and the back-stitch crosses two forward-stitches penetrating the preceding coil. Several aberrancies, however, are found on Prayer Rock baskets; an entire rim is braided on one basket and another has a back-stitch which crosses three forward-stitches encircling the standing element between coils. These two methods foreshadow later rim styles. Pueblo basket makers show a tendency to use two-rod-and-bundle-triangular foundations in conjunction with chevron rims.

As in the preceding period, trays, bowls, truncate forms, globular forms, and conical burden baskets occur in the Pueblo area; these shapes generally are found in the western section.

Evolving from the conical carrying basket is a wedge-shaped form. Two types are apparent. One has a flat base and the other a

Between 500 A.D. and 700 A.D., many basketry techniques are contained in the Pueblo domain. New methods are introduced again from the north and south. Furthermore, several methods are invented within the area.

Existing in the Pueblo area is the two-rod-and-bundle triangular foundation method; it remains dominant in the western area. The one-rod with intricate stitches continues just north of the San Juan River and extends north into the Chinese Wash. In the Prayer Rock locality, intricate stitches become elaborate. A two-rod-and-bundle triangular foundation with intricate stitches is substituted for the one-rod all along the Chinese drainage.

False stitches also continue in the western Pueblo area. Weaving is similar to the earlier style in which the last inch is covered with a sewing spline and the back-stitch crosses two forward-stitches penetrating the preceding coil. Several specimens, however, are found on Prayer Rock baskets; an entire rim is provided on one basket and another has a back-stitch which crosses three forward-stitches enclosing the standing element between coils. These two methods form shadow later rim styles. Pueblo baskets either show a tendency to the two-rod-and-bundle-triangular foundation in conjunction with chosen rim.

As in the preceding period, trays, bowls, tumblers, globular forms, and conical bucket baskets occur in the Pueblo area; these shapes generally are found in the western section.

Evolution from the conical carrying basket is a wedge-shaped form. Two types are apparent. One has a flat base and the other a

slight basal notch. The flat base style is found from Kayenta east through Canyon del Muerto to Shabik'eshee Village. The basal notch occurs at Canyon del Muerto.

Another innovation is the stitch-and-wrap coiled method occurring on the east side of Chinlee Wash. At Prayer Rock a one-rod foundation is used. The weavers also developed a multiple-stitch-and-wrap variation on a two-rod-and-bundle-triangular foundation which is found further south at Canyon del Muerto.

A third innovation is the yucca ring basket. Earlier basket makers apparently did not want to weave around a corner and plait baskets into shape from the bottom upward. The downward plaited style spreads out of the Kayenta district to the Chinlee Wash and up to Grand Gulch. A few weavers in the Prayer Rock district hit upon the idea of weaving a mat and forcing it into shape through a wooden hoop. The rim is covered with the mat fringe held down over the hoop by a course of twining.

Other areas still contribute basketry ideas to the Pueblo region. From the south, a bundle foundation method is diffused or traded into the western Pueblo area.

From the north, the interlocked stitch on a one-rod foundation spreads southward. The direction of diffusion is along a northwest-southeast axis, from a site near the Fremont drainage, through Grand Gulch, and down along the east side of Chinlee Wash.

Between 700 A.D. and 900 A.D., there is a lack of data which becomes more noticeable in the next period. Two-rod-and-bundle-triangular foundations persist in the western Pueblo area, but the popularity of the

might have been. The first base style is found from Kayenta east through Canyon del Muerto to Shashik's Village. The second notch occurs at Canyon del Muerto.

Another innovation is the stick-and-wrap method occurring on the east side of Chinle Wash. At Prayer Rock a one-rod foundation is used. The weavers also developed a multiple-stick-and-wrap variation on a two-rod-and-bundle-triangular foundation which is found further south at Canyon del Muerto.

A third innovation is the green ring basket. Earlier baskets makers apparently did not want to weave around a corner and plain baskets into shape from the bottom upward. The downward plaited style spreads out of the Kayenta district to the Hualapai Wash and up to Grand Gulch. A few weavers in the Prayer Rock district left upon the idea of weaving a mat and forcing it into shape through a wooden hoop. The rim is covered with the mat fringe held down over the hoop by a course of twining.

Other areas still contribute basketry ideas to the Pueblo region. From the south, a bundle foundation method is diffused or traded into the western Pueblo area. From the north, the interlocked stick on a one-rod foundation spreads southward. The direction of diffusion is along a northwest-southeast axis, from a site near the Fremont drainage, through Grand Gulch, and down along the east side of Chinle Wash. Between 700 A.D. and 900 A.D., there is a lack of data which becomes more noticeable in the next period. Two-rod-and-bundle-triangular foundation persists in the western Pueblo area, but the popularity of the

technique is evident in the eastern region as well. One-rod foundation with interlocked stitches continues in about the same area as previously.

More widely known than before, the coiled wedge shape with a basal notch is found in the Kayenta district and as a clay effigy on the La Plata. To the south, a Kayenta-like basket occurs near Las Cruces.

The plaited yucca ring idea is continued. Although only one basket is manifested, it occurs in the Kayenta area west of the first finds.

From the north, one-rod-and-bundle-stacked foundation fragments may represent trade baskets to some Kayenta and Abajo sites.

In the next period, 900 A.D. to 1100 A.D., a center of basketry is at Pueblo Bonito. Continuing at Bonito are the following techniques: two-rod-and-bundle-triangular foundation, one-rod foundation with interlocked stitch, and plaited yucca ring baskets but with an over-three-under-three interval in place of the earlier over-two-under-two weave. The two-rod-and-bundle-triangular technique also occurs at other sites in the eastern zone.

A false braided rim method becomes popular at Pueblo Bonito. This is the method in which the back-stitch crosses three forward-stitches and encircles the standing element between coils; both whole rims and tips are braided. Cylindrical baskets also become popular in a taller style at Bonito.

A new form is the bifurcate burden basket which is an elaboration of the earlier basal notch type. At Pueblo Bonito, the shape is a wide V. Also new, at Bonito, is the elliptical tray form.

technique is evident in the eastern region as well. One red foundation with interlocked stitches continues in about the same area as previously.

More widely known than before, the so-called wedge shape with a

basal notch is found in the Kuyuk district and as a clay object in

the La Plata. To the south, a Kayenta-like basket occurs near the

Grand.

The plaited piece ring has its origin. Although very rare

has been manifested, it occurs in the Kayenta area west of the line

line.

From the north, one-red-and-brown-streaked foundation first

may represent trade baskets to some Kayenta and Hopi sites.

In the next period, 900 A.D. to 1100 A.D., a series of baskets

is at Pueblo Bonito. Continuing at Bonito are the following techniques:

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locked stitches, and plaited piece ring baskets but with an even-three-

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a wide V. Also now, at Bonito, is the simplest tray form.

Either Pueblo Bonito borrowed two coiling techniques from different areas, or the methods are accidental variations. One is a two-rod-and-bundle-stacked foundation which also occurs to the southeast at Feather Cave in a vertical-lateral bundle arrangement. The other is a one-rod-and-bundle-stacked method which is one of the dominant techniques northwest in the Fremont region.

During the next period, 1100 A.D. to 1300 A.D., baskets become more plentiful in the archaeological deposits. The two-rod-and-bundle-triangular foundation continues in the western and eastern Pueblo regions. In the eastern zone, the technique expands into the Gallina, Chama, Jemez, and Upper Pecos regions. The one-rod, interlocked stitch method also moves along the eastern margin. In the western and east-central parts, the interlocked stitch is replaced by a noninterlocked stitch on a one-rod foundation. This latter association of traits may be a Pueblo innovation.

False braided rims continue in the Pueblo Bonito style. Only one braided specimen, however, occurs in the western part of the Pueblo region.

Bifurcated burden baskets move out of the Pueblo Bonito locality into the western area where they become coarser in weave, taller, and with straighter walls.

A distinctive difference between the eastern and western zones is manifested in plaited yucca ring baskets. In the eastern section an ornamental rim braid hides the plain fringe which hangs down on the outside. A regular over-three-under-three plaited interval also occurs in this area. In the west, fringed rims and variable weaves are the

style. The plaited forms of both regions differ from previous plaited ring baskets in having patterned twill designs; often these designs are emphasized by contrasting black and natural colors.

The center of diversified coiled techniques shifts from Pueblo Bonito north to Mesa Verde. Here, northern influences are felt, new techniques come into being, and old ones are perpetuated.

Quantitatively, the most important new technique is the three-rod-triangular foundation. The method comes from the Great Basin in a swing down through southern Nevada, turns east into southern Utah and Arizona, and then goes into the Pueblo area. Although three-rod-triangular foundations occur at sites scattered around the Four Corners area, the productive center is Mesa Verde.

Shallow and deep truncate cone and cylindrical baskets are continued at Mesa Verde. The former reach their classical shape at this time.

A technique either re-invented or re-vitalized is the stitch-and-wrap which now is found at Lost Canyon, Mesa Verde, and several sites south of the Pueblo area. At Mesa Verde a number of types are elaborated.

Deviant coiled techniques at Mesa Verde are the two-rod-and-bundle-stacked foundation, which possibly represents an influence from Pueblo Bonito, and a three-rod-and-bundle-bunched specimen which may be unique. A three-rod-stacked foundation occurs at Mesa Verde and Battle Canyon, and a two-rod-stacked fragment comes from Jemez Cave. The latter two methods possibly represent influences from some unknown northern or eastern source. In the ethnographic period stacked types are important

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among the tribes of Utah, Colorado, and the Plains states. Also from the north may come the few half-rod-and-bundle-stacked fragments at Mesa Verde and Battle Canyon.

In the next period, 1300 A.D. to 1540 A.D., artifacts once again become scarce. The cause of this may be that the people, after having gone into rockshelters during the preceding interval, were settling again in the open; preservation of baskets would therefore be accidental.

The two-rod-and-bundle-triangular foundation technique continues at several sites along the eastern margin. It probably is made at other Pueblos for the method is manifested in Old Pueblo material collected in the eighteen-hundreds.

Plaited yucca ring baskets also persist. Hopi-like baskets are found in the western Pueblo area. In the east yucca ring baskets with plain rims may have been used at Riana and Pecos where the weave at the latter site is over-two-under-two.

A new basketry technique appears in the Hopi area and along the southwestern edge of the Colorado Plateau. This is the Hopi wicker method for producing plaques.

Intruding from the south, the bundle foundation method once more appears in the Pueblo area. The method may have entered the Hopi area via Sierra Ancha.

The ethnographic period is divided into early and late intervals; the early interval starts in 1540 A.D. and ends at 1900 A.D. or perhaps a little later.

During the early ethnographic period, the two-rod-and-bundle-triangular foundation continues in eastern and western zones. It occurs

among the tribes of Utah, Colorado, and the Southwest. The north may come the low hills and mountains of the region. Mesa Verde and Battie Canyon.

In the next period, 1300 A.D. to 1400 A.D., the culture again became scarce. The cause of this may be that the people, having gone into rock shelters during the preceding interval, were settling again in the open; preservation of objects being accidental.

The two-and-a-half-thousand-year-old culture at several sites along the eastern margin. It probably is a local culture. Pueblo for the method is mentioned in Old Pueblo material. The eighth-hundred.

Plated pieces with bands. Also painted. The eighth-hundred are found in the western Pueblo area. In the end of the eighth-hundred with plain rim may have been used as a rim and the eighth-hundred at the latter site is over-two-thousand-year-old. A new basketry technique appears in the eighth-hundred. The southwestern edge of the Colorado Plateau. This is the first method for producing plaques.

Interbury from the eighth-hundred. The eighth-hundred appears in the Pueblo area. The method may have been used in the eighth-hundred. Via Santa Anas.

The ethnographic period is divided into early and late. The early interval starts in 1500 A.D. and ends in 1600 A.D. a little later.

During the early ethnographic period, the southwestern triangular foundation continues in eastern and western.

from Hopi through Zuni into the Keresan Pueblos. The three-rod-triangular foundation also is perpetuated. This technique is distributed in the eastern region at Santa Ana, Jemez, and north among the Tewa Pueblos; in the west it may have occurred at Zuni and Hopi. The one-rod foundation with noninterlocked stitches is found at Zia as an alternate method for the two-rod-and-bundle-triangular.

False braided rims are continued at Jemez and several Keresan and Tewa Pueblos. The back-stitch is raised to penetrate the top element of the rim coil. This is in keeping with the trend whereby the back-stitch at first penetrated the lower coil, then encircled the standing element between coils, and now penetrates the rim coil. The back-stitch, among the Rio Grande Pueblos, crosses two forward-stitches.

Plaited yucca baskets are reported for most Pueblos. It seems likely that these are yucca ring baskets with plain rims.

Hopi wicker baskets persist in the west and the idea is used at Zuni. A number of forms are apparent, ranging from carrying baskets to tiny plaques. Zuni basket makers, however, may have restricted their weaving to the coarser utility forms. In the east, another type of wicker basket is either introduced by Europeans, Mexican Indians, or is instigated by Hopi wicker. Most of the Rio Grande Pueblos produce this type and it seems to extend west to Hopi.

From the south, the idea of plaiting baskets from the bottom up into cylindrical or inward slanting shapes diffuses into the Hopi-Zuni area. The weavers, however, use a wooden hoop and lash the ends of the plaited strands down over the hoop with a course of twining.

From the north, groups of people enter the Pueblo area to settle in their present locations just before or after 1540 A.D. These people

from Hopi through Santa into the Kanabon Pueblo. The former red-
 triangular foundation also is perpetuated. This technique is dis-
 tinct in the eastern region at Santa Ana, Jemez, and north among the
 Two Pueblos; in the west it may have occurred at Santa and Hopi. The
 one-red foundation with noninterlocking sides is found as far as
 alternate method for the two-red-and-white-triangular.
 Also painted rim are continued at Santa and several Kanabon
 and Two Pueblos. The back-which is raised to penetrate the top
 element of the rim coil. This is in keeping with the trend whereby the
 back-which at first penetrated the lower coil, then encircled the stand-
 ing element between coils, and now penetrates the rim coil. The back-
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 From the south, the idea of plaiting baskets from the bottom
 up into cylindrical or inward flaring shapes differs into the Hopi-Santa
 area. The weavers, however, use a wooden hoop and lash the ends of the
 plaited strands down over the hoop with a course of twining.
 From the north, groups of people enter the Pueblo area to settle
 in their present locations just before or after 1500 A.D. These people

are the San Juan branch of the southern Paiute, Ute, Navaho, and Jicarilla Apache.

The old Paiute baskets may have had a three-rod-triangular foundation, although the eastern Kaibab and San Juan branches probably used a vertical type as well. Among the Ute the old style of coiling was formed with two or three-rod-stacked. A one-rod method also was used by the northern Rio Grande Utes.

Between the Paiute-Ute and the Pueblos are the Navaho, who occupy much of the western Pueblo area extending into the east-central section. The old Navaho style of coiling may have been a one-rod, noninterlocked stitch technique, but in time these people probably changed to the two-rod-and-bundle-triangular foundation. They also may have used the three-rod-triangular foundation. The Navaho apparently adopted the idea of wickering conical burden baskets from either the Hopi or Zuni. The Ute and Paiute added to their stock of techniques when they started to make Navaho baskets. These northern groups have been reported as making both the two-rod-and-bundle-triangular and three-rod-triangular foundations.

The Jicarilla Apache living to the east of the Navaho were influenced by the Rio Grande Pueblos. In particular, the Jicarilla make baskets which are similar to the Jemez baskets. Two alternate techniques are used; the three-rod-triangular and five-rod-bunched foundations.

Jicarilla, Navaho, and Ute braid their coiled basket rims in a technique similar to the Rio Grande type. The southern Paiute, on the other hand, probably use a slightly different method which is summarized by Spier for the Havasupai. The back-stitch crosses three or four forward-stitches and either encircles or penetrates the top element of the rim coil.

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Between the Paiute-Ute and the Teton and the Navaho, who
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The Mescalito Apache living to the east of the Navaho were
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baskets which are similar to the Teton baskets. Two alternate techniques
are used; the three-rod-triangular and five-rod-bunched foundations.
Mescalito, Navaho, and Ute build their coiled baskets with the
technique similar to the Rio Grande type. The southern Paiute, on the
other hand, probably use a slightly different method which is emphasized
by Spier for the Havasupai. The back-stitch cross-stitch or four-forward
stitches and other variations or penetrations the top elements of the coil.

During the late ethnographic period, basket making rapidly dies out at most of the Pueblos and among the Navaho. The Hopi in the west and Jemez in the east are the main Pueblo producers; Jicarilla, Ute, and Paiute also make baskets. In the eastern Pueblo area, several Keresan and Tewa Pueblos manufactured baskets until the nineteen-thirties or nineteen-forties.

In the west, Second Mesa Hopi use the bundle foundation. Decorated wicker baskets are perpetuated at Third Mesa. Coarse wicker forms and yucca ring bowls are still made at most of the Hopi villages.

In the east, the three-rod-triangular and five-rod-bunched foundation techniques continue at Jemez. Plaited yucca ring baskets at Jemez and San Felipe are slightly different from the Hopi type; at Jemez two weaving strands act as a unit. Rio Grande wicker baskets continue at Santo Domingo, Laguna, and Hopi.

A general over-all view of basketry development in the Pueblo area may be presented by outlining areal divisions. At first there is a difference in basketry techniques between sites north of the San Juan River and those south of it in northeastern Arizona. This difference is established by basketry methods intruding into the Pueblo area from regions to the north and south. Midway through the archaeological periods, an east-west alignment of technical differences occurs. The New Mexico-Arizona border may be taken as the dividing line. These differences are brought about primarily by innovations and developments within the Pueblo region. The next change in sub-areas is during the ethnographic period. First there is a north-south areal division resulting from intrusive Ute groups. Second, there is an east-west

During the late ethnographic period, basket making rapidly
then out of west of the Pacific and... The fact is that
west and Texas in the east are the main...
Use, and... In the eastern...
Kansas and Texas...
or...
In the west, Second...
Decorated...
forms and...
In the east, the three...
foundation...
Texas and San...
Texas...
continues at...
A general...
area may be...
a difference...
River and...
is established...
regions to...
periods, an...
New Mexico...
differences...
within the...
ethnographic...
resulting from...
Second, there is an...
Third, there is an...
Fourth, there is an...
Fifth, there is an...
Sixth, there is an...
Seventh, there is an...
Eighth, there is an...
Ninth, there is an...
Tenth, there is an...

division among the Pueblo villages which is based upon continuing traditions of late archaeological and early ethnographic basketry.

division among the people which is not a matter of
tradition of late archaeological and early ethnographic research.

CHAPTER V

CONCLUSIONS

The problem of this study was to determine the cultural processes responsible for the development of basketry technology in the Pueblo area. A review of the pertinent literature revealed a considerable amount of new basketry information from archaeological sites and ethnographic reports in the Greater Southwest, superceding the last major study of Pueblo basketry made in 1941. Simple techniques then were devised for the present thesis to arrange the data into coherent order. On the basis of this arrangement, the distribution of baskets was analyzed and the similarities and differences of technical behavior manifested in the baskets were explained in terms of independent invention, diffusion, trade, and persistence. Briefly stated the final conclusions about these processes were:

- 1). During the early period, 46 A.D. to 500 A.D., the most important process was diffusion of basketry techniques into the Pueblo region from areas to the north and south.
- 2). Between the early and Classic periods, 500 A.D. to 1100 A.D., persistence and development of the previously acquired methods were the dominant cultural processes in the Pueblo area.
- 3). In the Classic period, 1100 A.D. to 1300 A.D., diffusion once again became important, but it was a diffusion of basketry techniques

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- 1). During the early period, 500 A.D. to 900 A.D., the most important process was diffusion of basketry techniques into the Pueblo region from areas to the north and south.
- 2). Between the early and Classic periods, 900 A.D. to 1100 A.D., persistence and development of the previously acquired methods were the dominant cultural processes in the Pueblo area.
- 3). In the Classic period, 1100 A.D. to 1300 A.D., diffusion once again became important, but it was a diffusion of basketry techniques

out of the Pueblo area into southern regions. One important method came into the Pueblo domain from the northwest, while aberrant techniques of little consequence were found along the northern Pueblo periphery.

4). After the withdrawal of indigenous people from the northern part of the Pueblo area, certain basket methods rarely found in the region were carried in by a migrating group. Other invading tribes adopted some of the methods extant among the Pueblo villages.

5). The modern descendants of the people who had lived in the archaeological Pueblo area have almost abandoned basket making. A few of their formerly popular methods, however, are perpetuated by the recently immigrated tribes.

APPENDIX A

DISTRIBUTION OF PLANT MATERIALS

USED IN BASKETS

The Danger Cave study contains the most detailed analysis of any site report about the materials used in baskets; genus and species are listed for the plant material from which seventy-three coiled baskets are woven. The information in the report indicates that several kinds of plants are used, a condition which probably exists at other archaeological sites where such data is not provided.

In the southern part of the Greater Southwest, there is a grass and yucca bundle foundation tradition. Yucca stitches are dominant in the archaeological Trans-Pecos region, although a few wooden (willow ?) stitches are evidenced in the Hueco mountains. Willow is the preferred material for stitches at Ventana Cave. In the ethnographic period, grass replaces yucca as a bundle material.¹ Epicampes grass is used from the San Joaquin River through southern California, while the stitches among the Yokuts are of a sedge (Carex or Cladium) and among the Mission are Rhus or Juncus; beargrass bundles and yucca stitches are used by the Papago of southern Arizona; and galleta grass bundles with yucca stitches are characteristic of Hopi baskets in northeastern Arizona.

¹ For the distribution of coiled foundation materials during the ethnographic period, see Figure 13.

DISTRIBUTION OF FLINT MATERIAL

USE IN BASKETS

The Dargatzis study contains the most detailed analysis of any site report about the materials used in baskets. Items and species are listed for the plant material from which baskets were made. The information in the report indicates that several kinds of plants are used, a condition which probably exists at other archaeological sites where such data are provided.

In the southern part of the Greater Southwest, where is a large and yucca bundle foundation tradition, yucca stalks are dominant in the archaeological record. Yucca stalks are also used in the archaeological record in the Great Basin. Yucca stalks are evidenced in the Great Basin in the archaeological record. In the ethnographic period, material for baskets at Yucca Cave, in the ethnographic period, grass replaces yucca as a bundle material. Yucca stalks are used from the San Joaquin River through western California, while the stalks among the Yokuts are of a type (Corypha or Cladophora) and yucca stalks are thus or similar; baskets made from yucca stalks are used by the Papago of southern Arizona, and yucca stalks with yucca stalks are characteristic of basket making in northern Arizona.

1 For the distribution of yucca stalks in the ethnographic period, see Figure 1.

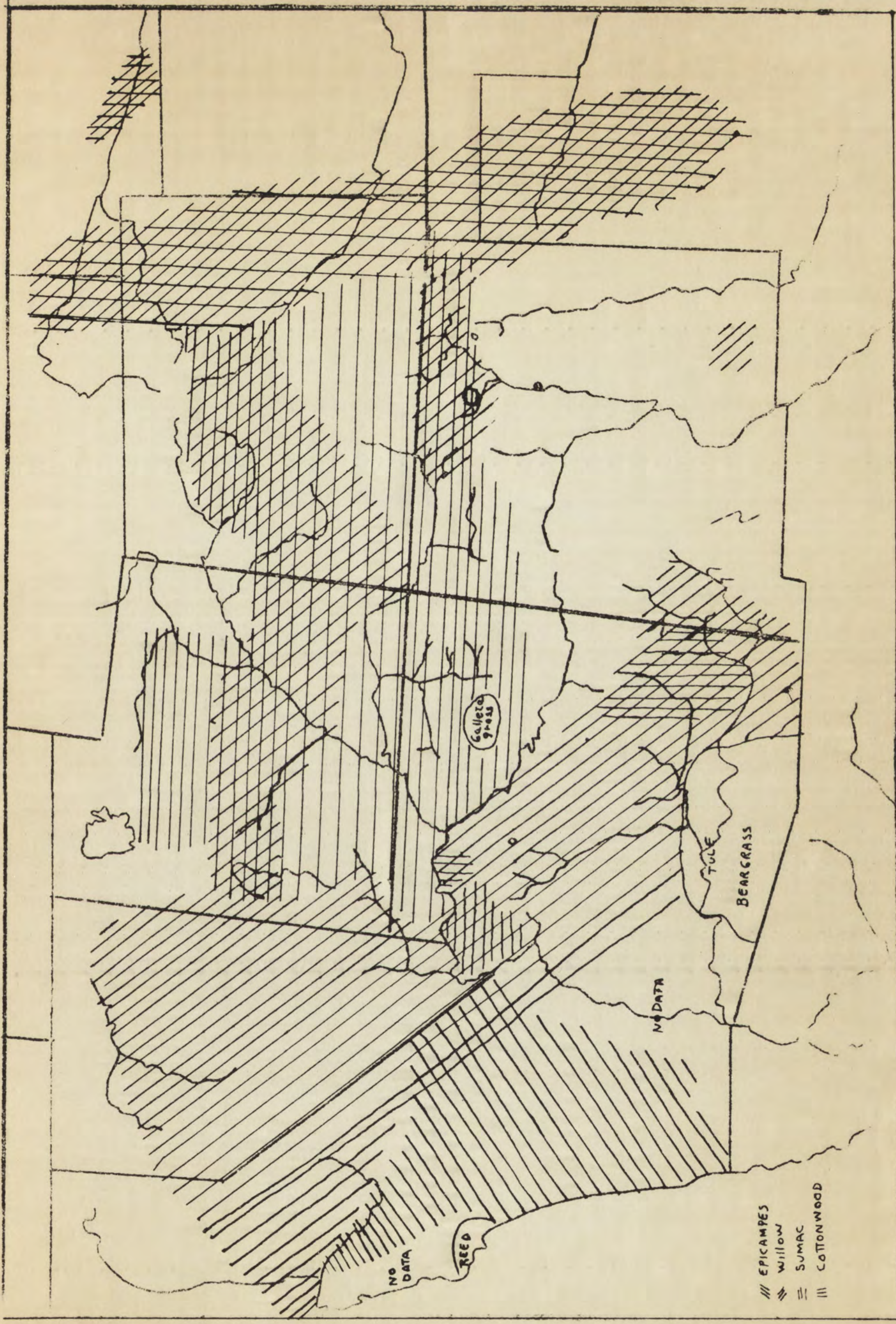


FIGURE 13
DISTRIBUTION OF COILED FOUNDATION PLANT MATERIALS

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Willow rods in a three-rod-triangular foundation are used in the Great Basin and central California. To the east in Utah and Colorado, a vertical rod foundation tradition may have used willow at first. Between the willow and grass and yucca areas, a two-rod-and-bundle-triangular foundation tradition used willow rods, grass or yucca bundles, and willow stitches. During the ethnographic period, the three-rod-triangular foundation which uses willow is distributed through central California, south along the western margin of the Great Basin, and into Arizona. Willow also is associated with one-rod foundations, two-rod and three-rod-stacked foundations in a distributional line east through the Great Basin, across the middle of Utah-Colorado, and into the High Plains. The Jicarilla Apache, Tewa and Keres Pueblos also have used willow: the Jicarilla possibly shifted to sumac at a late time; the Tewa used willow and occasionally sumac rods with sumac stitches; and the Keres, of the Rio Grande Valley, alternated between willow and sumac for their rods and stitches, while using a yucca fiber bundle in the two-rod-and-bundle-triangular foundation.

Sumac may have become popular at some time in the past among the weavers of Utah and Colorado. A few baskets of this material are reported, archaeologically, from Danger Cave and possibly from Kayenta and Bc 51, Chaco Canyon. Ellis reports: "In Jemez it is said that Jicarilla baskets formerly were made of willow, but that when visiting Jicarillas learned that Alcario was using sumac because it split less, they filled a couple of sacks with withes before returning to their reservation."² Perhaps the resistance of sumac to splitting appealed to

² Ellis and Walpole, op.cit., 193-194.

basket makers during the late archaeological period north of the Pueblo area. Thus, the Ute may have changed from willow to sumac as a material for their vertical foundations, some of the tribes continuing to use willow alternately with sumac, while others use only sumac. The Navaho, Jicarilla, and Jemez Pueblo also use sumac for coiling baskets and as previously noted the eastern Keres use sumac alternately with willow but tend to emphasize the use of sumac, while the Tewa may have used willow rods and sumac stitches.

pointed out during the late archaeological period north of the Pacific
 area. Thus, the use may have changed from willow to grass as a material
 for their vertical foundations, some of the tribes continuing to use
 willow stems with grass, while others use only grass. The Navaho,
 Shoshone, and some Pueblo also use grass for building houses and as
 previously noted the eastern tribes use grass stems with willow
 but tend to emphasize the use of grass. While the laws may have used
 willow rods and grass sticks.

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1662-1663, 1664-1665, 1666-1667, 1668-1669, 1670-1671, 1672-1673, 1674-1675, 1676-1677, 1678-1679, 1680-1681, 1682-1683, 1684-1685, 1686-1687, 1688-1689, 1690-1691, 1692-1693, 1694-1695, 1696-1697, 1698-1699, 1700-1701, 1702-1703, 1704-1705, 1706-1707, 1708-1709, 1710-1711, 1712-1713, 1714-1715, 1716-1717, 1718-1719, 1720-1721, 1722-1723, 1724-1725, 1726-1727, 1728-1729, 1730-1731, 1732-1733, 1734-1735, 1736-1737, 1738-1739, 1740-1741, 1742-1743, 1744-1745, 1746-1747, 1748-1749, 1750-1751, 1752-1753, 1754-1755, 1756-1757, 1758-1759, 1760-1761, 1762-1763, 1764-1765, 1766-1767, 1768-1769, 1770-1771, 1772-1773, 1774-1775, 1776-1777, 1778-1779, 1780-1781, 1782-1783, 1784-1785, 1786-1787, 1788-1789, 1790-1791, 1792-1793, 1794-1795, 1796-1797, 1798-1799, 1800-1801, 1802-1803, 1804-1805, 1806-1807, 1808-1809, 1810-1811, 1812-1813, 1814-1815, 1816-1817, 1818-1819, 1820-1821, 1822-1823, 1824-1825, 1826-1827, 1828-1829, 1830-1831, 1832-1833, 1834-1835, 1836-1837, 1838-1839, 1840-1841, 1842-1843, 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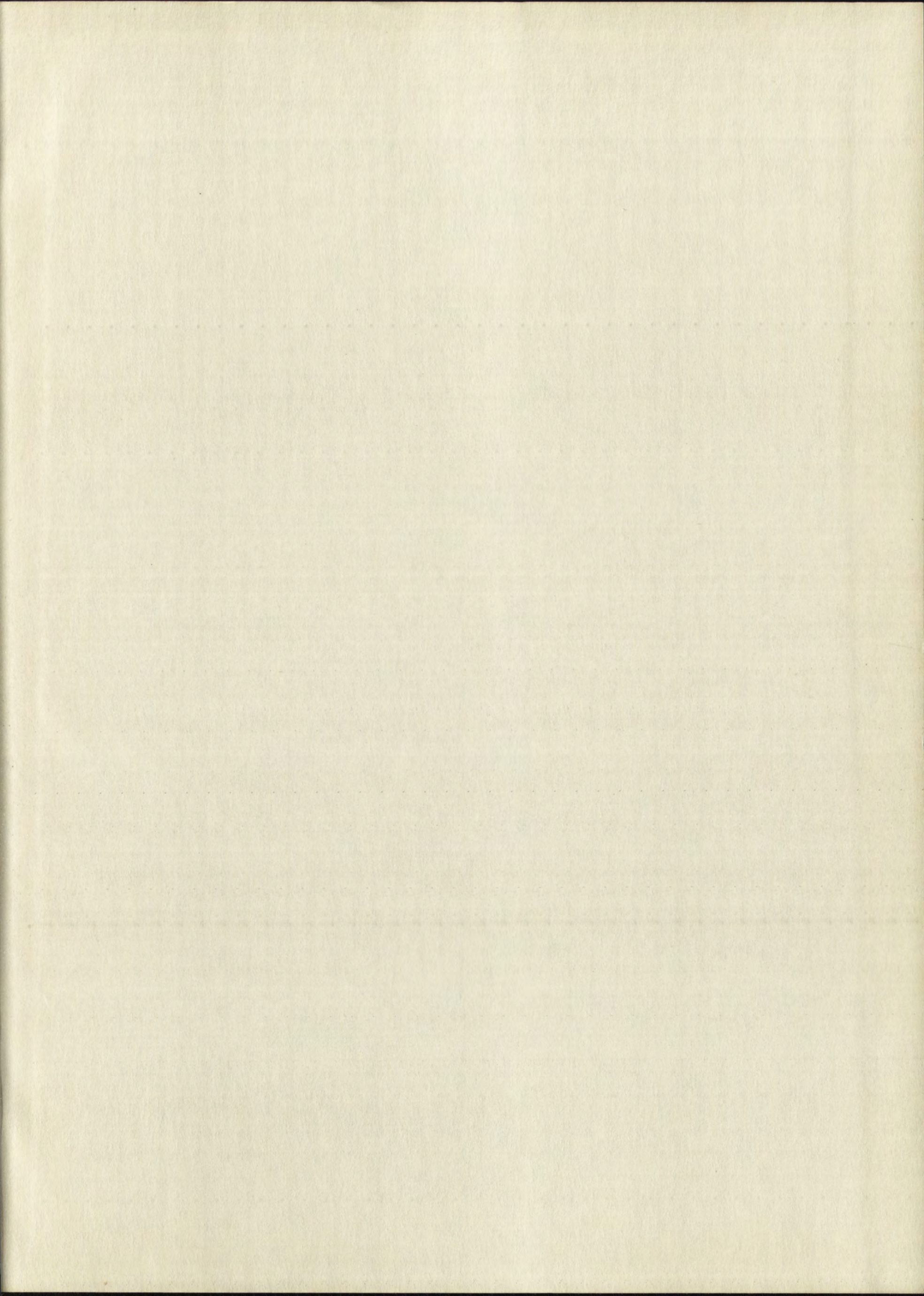
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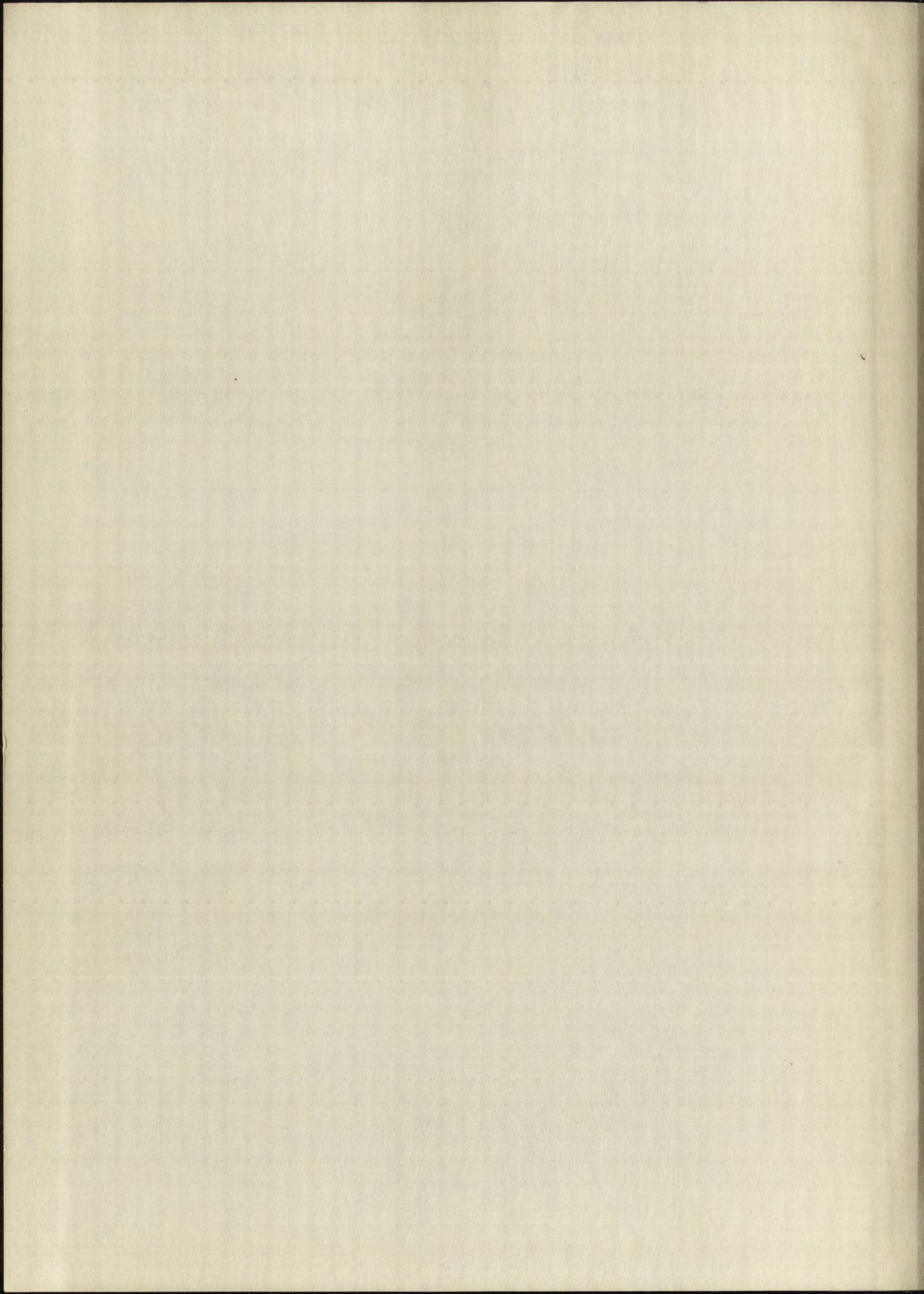
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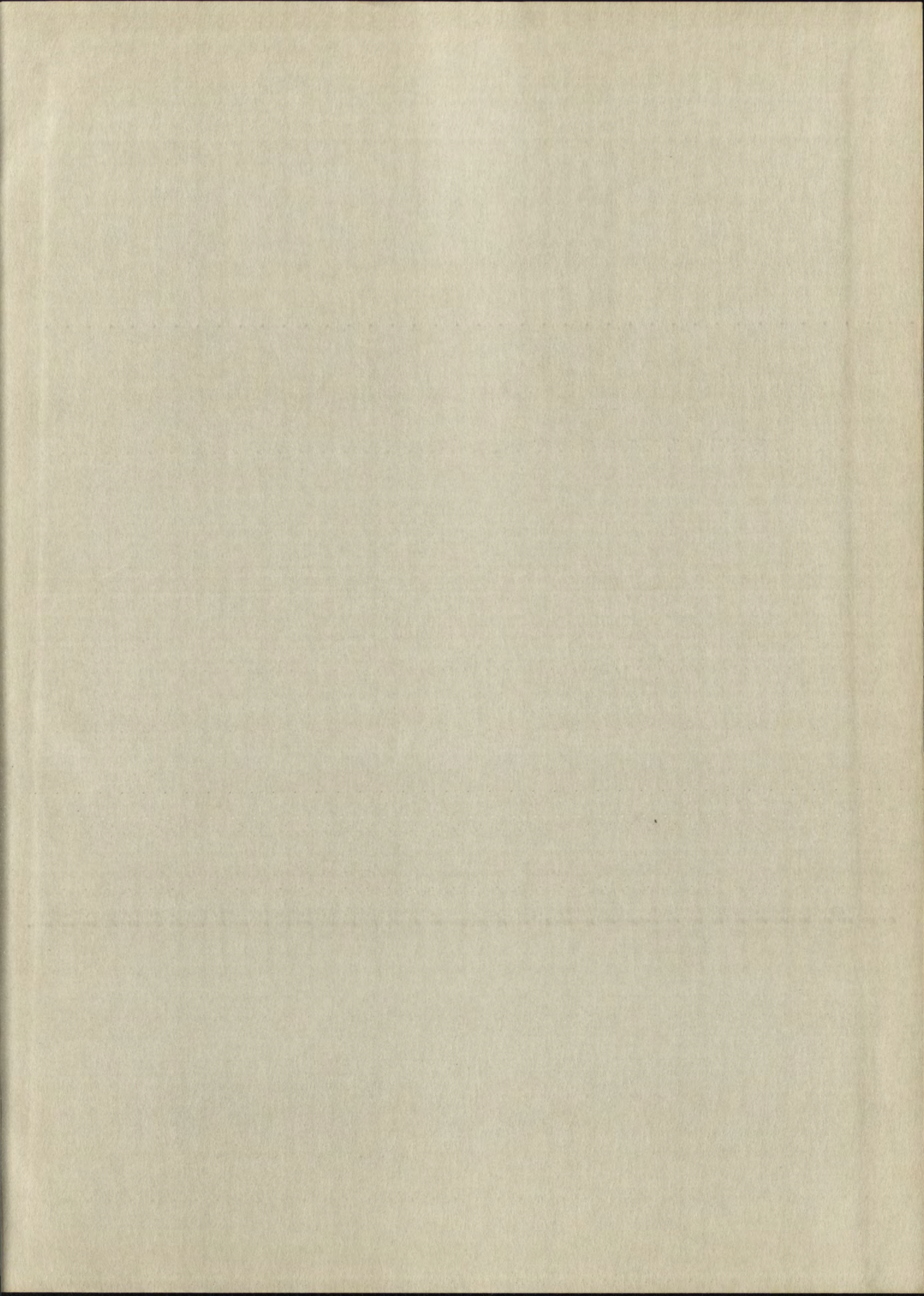
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