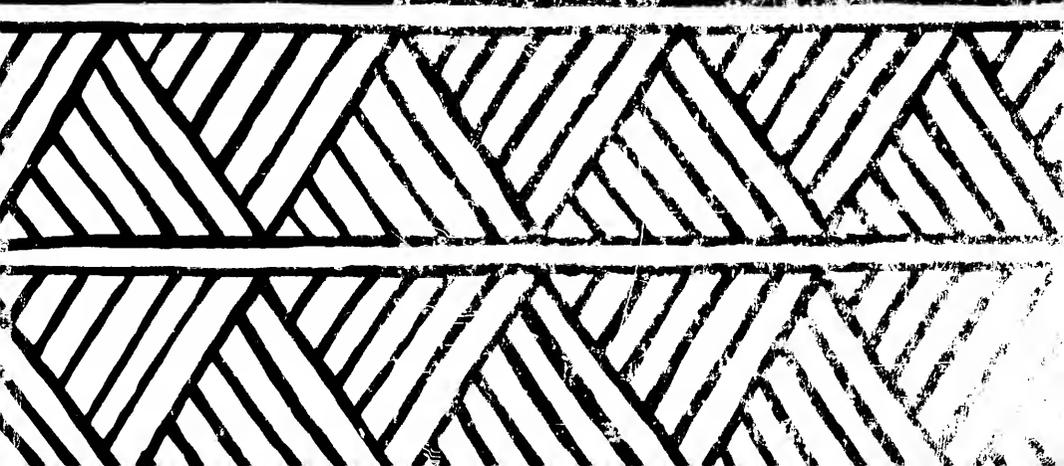
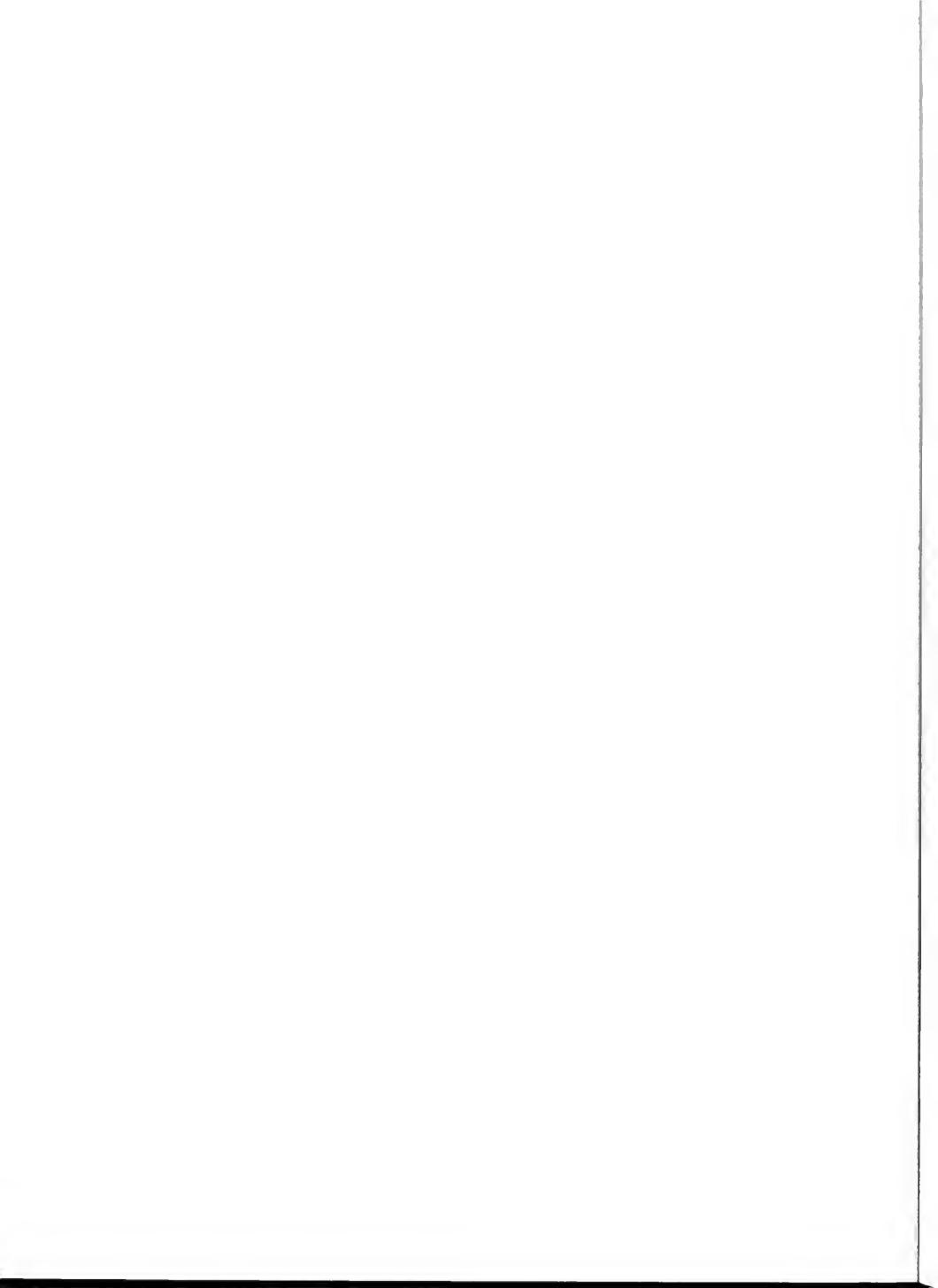


WOODLAND
COMPLEXES
IN NORTHEASTERN IOWA



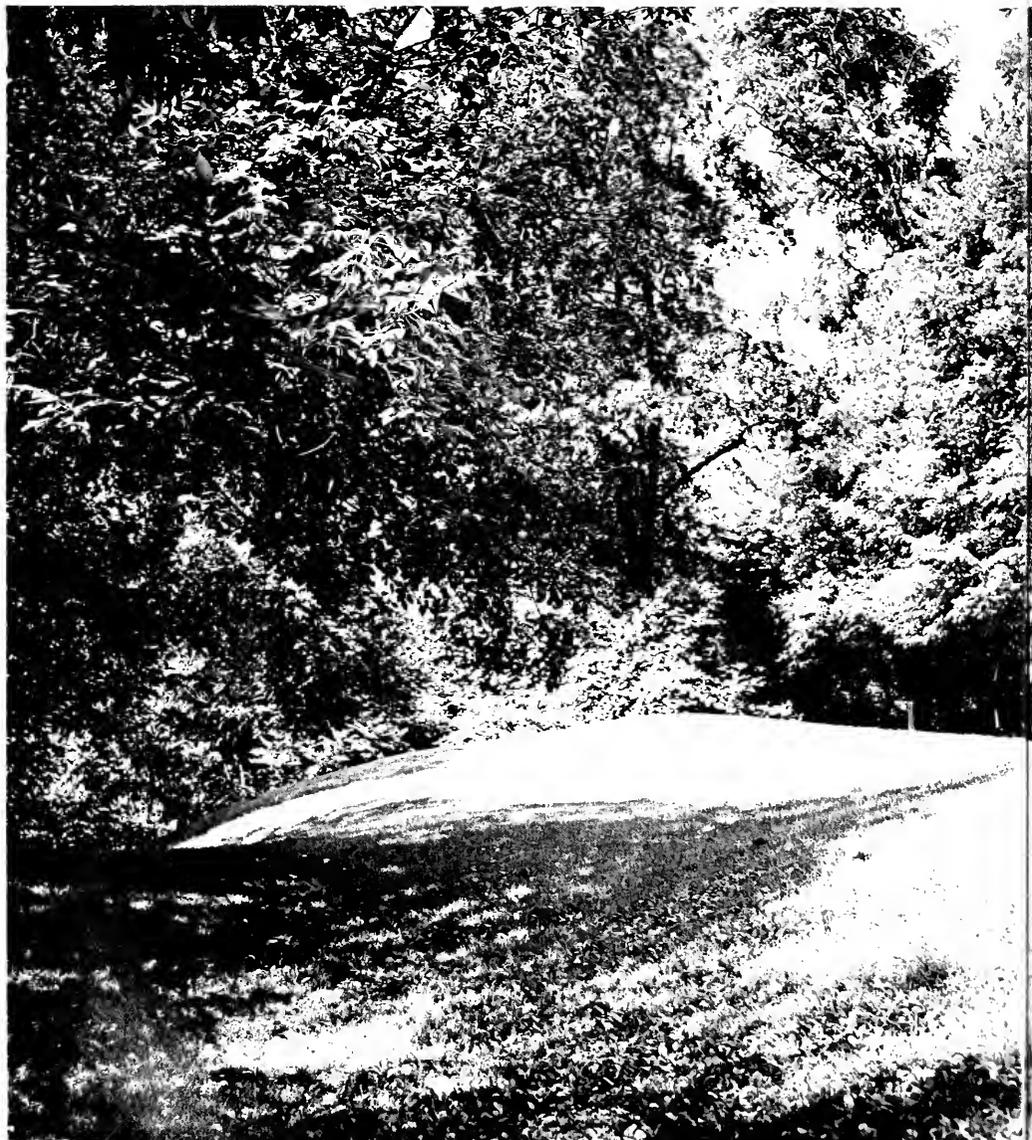


WOODLAND COMPLEXES

From the collection of the

o P^{z n}reinger^m
v L^aibrary
t p

San Francisco, California
2008



Conical burial mounds at Effigy Mounds National Monument.

WOODLAND COMPLEXES

IN NORTHEASTERN IOWA

WILFRED D. LOGAN

Publications in Archeology 15

U.S. DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
Washington 1976

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402 - Price \$4.10

Stock No. 024-005-06575-7

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration.



Library of Congress Cataloging in Publication Data

Logan, Wilfred David, 1923-

Woodland complexes in northeastern Iowa.

(Publications in archeology; 15)

Originally presented as the author's thesis,
University of Michigan, 1959 under title: Analysis
of woodland complexes in northeastern Iowa.

Bibliography: p.

Supt. of Docs. no.: I 29.59:15

1. Indians of North America—Iowa—Antiquities.
 2. Iowa—Antiquities. 3. Mounds—Iowa.
- I. Title. II. Series.

E51.U75 no. 15 [E78.16] 977.7'004'97 75-25768

FOREWORD

The prehistoric inhabitants of any unit of the National Park System did not exist in isolation. All such groups took part in the complex events of culture history in the regions in which they lived. This archeological report, which includes a study of the Indians who once inhabited Effigy Mounds National Monument, encompasses a good deal more than those people who lived within its boundaries.

This book, written by Wilfred D. Logan, an archeologist with many years of experience in the National Park Service, increases our understanding of the peoples whose burial mounds are preserved within the national monument and other sites in the surrounding locale. The volume presents data, not heretofore analyzed, from a large number of excavations in northeastern Iowa, and systematizes the material to develop a background against which to view the Effigy Mounds and the people who built them.

The study owes much to the vision of two conservation-minded amateur scientists—the late Charles R. Keyes of Cornell College,

Mount Vernon, Iowa, and the late Ellison Orr of Waukon, Iowa. Their efforts, between the years of 1933 and 1937, are reported herein, providing a vast body of information in the form of notes and artifact collections derived from their excavations. National Park Service archeologists carried on major excavations at Effigy Mounds in 1950 and 1952, and the bulk of the mounds remaining in unexcavated state form a valuable scientific bank for the future.

This report, then, is an analysis of the results of the research of Keyes, Orr and others, and serves to place the remains of the national monument in a definite prehistoric context in the Upper Mississippi Valley. By so doing, the author presents a more complete understanding of the people who used the area, both in terms of their development from earlier occupants, and in terms of their relationship, at any given time, to their neighbors living in the Middle West during the centuries before Europeans first visited the river valleys of our Nation's midlands.

Gary Everhardt
Director
National Park Service

PUBLICATIONS IN ARCHEOLOGY

1. *Archeology of the Bynum Mounds, Natchez Trace Parkway, Mississippi*, by John L. Cotter and John M. Corbett. 1951. (PB 177 061)*
2. *Archeological Excavations in Mesa Verde National Park, Colorado, 1950*, by James A. Lancaster et al. 1954. (PB 177 062)*
3. *Archeology of the Funeral Mound, Ocmulgee National Monument, Georgia*, by Charles H. Fairbanks. 1956. (PB 177 063)*
4. *Archeological Excavations at Jamestown, Virginia*, by John L. Cotter. 1958. (PB 177 064)*
5. *The Hubbard Site and Other Tri-Wall Structures in New Mexico and Colorado*, by R. Gordon Vivian. 1959. (PB 230 988/AS)*
6. *Search for the Cittle of Raleigh, Archeological Excavations at Fort Raleigh National Historic Site, North Carolina*, by Jean Carl Harrington. 1962.
- 7A. *The Archeological Survey of Wetherill Mesa, Mesa Verde National Park, Colorado*, by Alden C. Hayes. 1964. (PB 234 542/AS)*
- 7B. *Environment of Mesa Verde, Colorado*, by James A. Erdman et al. 1969. (PB 234 541/AS)*
- 7C. *Big Juniper House, Mesa Verde National Park, Colorado*, by Jervis D. Swannack, Jr. 1969. (PB 234 537/AS)*
- 7D. *Mug House, Mesa Verde National Park, Colorado*, by Arthur H. Rohn. 1971. (PB 234 539/AS)*
- 7E. *Badger House Community, Mesa Verde National Park, Colorado*, by Alden C. Hayes and James A. Lancaster. 1975.
- 7F. *Skeletal Remains from Mesa Verde National Park, Colorado*, by Kenneth A. Bennett. 1975.
- 7G. *Orthopedic Problems of the Wetherill Mesa Populations* by James S. Miles, M.D. 1975.
8. *Excavations in a 17th-Century Jumano Pueblo, Gran Quivira, New Mexico*, by Gordon Vivian. 1964.
9. *Excavations at Tse-Ta'a, Canyon de Chelly National Monument, Arizona*, by Charlie R. Steen. 1966. (PB 234 540/AS)*
10. *Ruins Stabilization in the Southwestern United States*, by Roland Von S. Richert and R. Gordon Vivian. 1974
11. *The Steamboat Bertrand: History, Excavation, and Architecture*, by Jerome E. Petsche. 1974.
12. *The Bertrand Bottles: A Study of 19th Century Glass and Ceramic Containers*, by Ronald R. Switzer. 1974.
13. *Investigations in Russell Cave, Russell Cave National Monument, Alabama*, by John W. Griffin et al. 1974.
14. *Casemates and Cannonballs: Archeological Investigations at Fort Stanwix National Monument, Rome, New York*, by Lee H. Hanson and Dick Ping Hsu. 1975.
15. *Woodland Complexes in Northeastern Iowa*, by Wilfred D. Logan. 1975.

*These publications are no longer available from the Superintendent of Documents, but may be ordered by title and parenthetical code number by writing to: National Technical Information Service, U. S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22151.

PREFACE

This publication could be considered an archeological antique. I say this because the research was begun in 1951 and completed in 1958. I do not intend to indulge in archeological reminiscence here, but I believe the circumstances should be understood because many years have passed since I last considered the problems of archeology in the upper Mississippi Valley.

In the years intervening, many new techniques have made their impact on the field of American archeology. When this work began, scholars, of necessity, were still seeking to develop local culture sequences (culture sequence, here, may be read as "ceramic sequence," or at best, "sequence of artifact complexes"). Before this work was completed, my intimate personal involvement with the environment of the Mississippi River Valley and its surrounding uplands (to say nothing of long discussions with David A. Baerreis and Warren L. Wittry) had caused me to ponder at length the relationships between man and the land. These factors, in turn, led to the beginnings of soils analyses of mounds at Effigy Mounds National Monument, carried out by Wayne Scholtes of Iowa State University. Such work only whetted my appetite for more sophisticated studies. However, money and time limitations, as well as the research emphasis of the period decreed that many investigative techniques now commonplace were not employed. Hence there were no exhaustive analyses of soils and pollen; no studies of forest and faunal succession,

searches for flint and clay sources and the like—in other words, no exhaustive study of the full gamut of the landscape of primitive man. Presentation of the data, likewise, follows certain conventions of the period in which this study was written: hence the inconsistency in providing scales for certain artifact illustrations—such then was simply not considered terribly important.

Furthermore, at the time this study was accomplished, archeologists were not so interested in processual studies as in culture history. The study reflects this bias. The years have changed my own interest. Northeastern Iowa is a field ripe for processual studies, and were I to work there today, I would so direct my research.

In the two decades since the study was done, manuscript copies have been circulated among scholars, but the basic data have never been presented to a wide audience in systematized form. There are many exciting studies possible within the identical collections presented here, and if I could do it over today, I would adjust my approach to the data considerably. I cannot, therefore, resist reminding the reader of Robert Browning's words from *Andrea del Sarto* (1855) on the work of the artist, equally applicable to the scientist:

"Ah but a man's reach should exceed his grasp, or what's a heaven for."

W. D. L.

September, 1974
Denver, Colorado

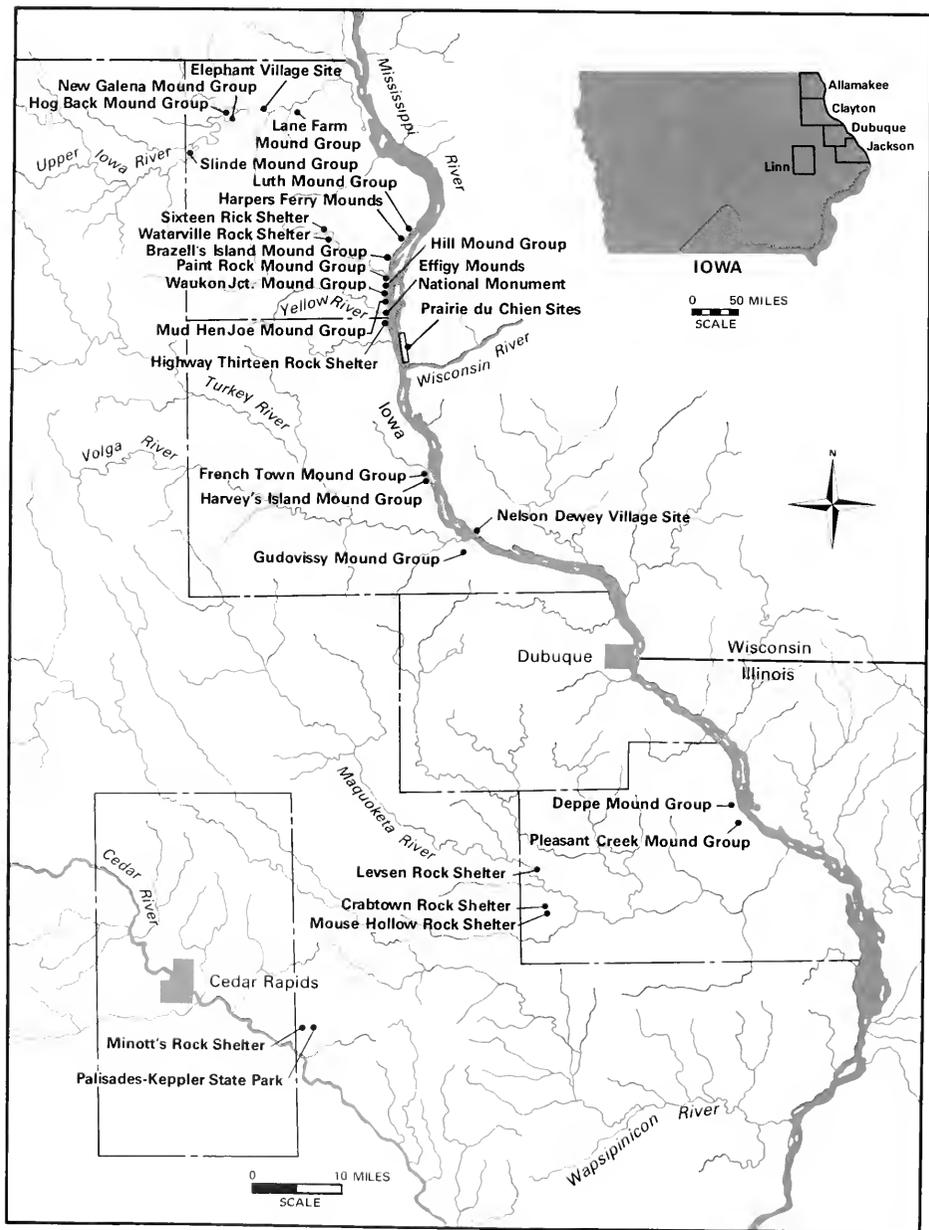


Figure 1. Northeastern Iowa, Mississippi Valley, and southwestern Wisconsin, showing location of sites referred to in text.

ACKNOWLEDGMENTS

A study of this kind, drawing as it does on the contributions, encouragement, and assistance of so many persons, makes it impossible to acknowledge the total debt I owe. All who study Iowa archeology are indebted to the late Charles R. Keyes, of Cornell College, Mount Vernon, Iowa, and to the late Ellison Orr of Waukon, Iowa. I have a slightly greater appreciation of this obligation than most, for I relied heavily on their collections, notes and observations. Their perception and understanding of the mounds were such that no problem considered herein had not been addressed to some extent by them. If I have been in any way successful in shedding light on the life of prehistoric peoples in northeastern Iowa, it is because the work of Keyes and Orr provided me with the raw materials.

I greatly appreciate the cooperation and assistance of William J. Peterson, former superintendent of the State Historical Society of Iowa, for making available the artifact collections, notes, and photographs of the Charles R. Keyes Collection, as well as other data pertaining to Woodland manifestations in northeastern Iowa. I am also grateful to the National Park Service both for encouragement and financial support in pursuing this research. I especially wish to acknowledge the help of William J. Kennedy and Walter T. Berrett, first and second Superintendents, in that order, of Effigy Mounds National Monument; the late Paul L. Beaubien, then Regional Archeologist of the Midwest Region; and John M. Corbett, former Chief Archeologist of the National Park Service.

To Paul Sagers of Emeline, Iowa, I am thankful for the use of his collections from sites in the Maquoketa area. Not only did Mr. Sagers put his extensive collections at my disposal, but he and his wife also offered me the hospitality of their home on several occasions. Gordon Peckham, of Prairie du Chien, Wisconsin, was an enthusiastic guide and informant on sites in and around Prairie du Chien. In addition, he frequently assisted as a volunteer laborer in my test excavations. Leland Cooper, formerly of Hamline University, St. Paul, Minnesota, gave of his knowledge and previous experience in the Prairie du Chien area, and called my attention to the Highway Thirteen Rock Shelter. I am indebted to Elizabeth J. Logan for constant encouragement and assistance in typing and proofreading (if not outright editing) of the initial manuscript.

I wish to express particular thanks to the University of Michigan Museum of Anthropology for a number of photographs. Those obtained from the Museum are cited by negative number in their respective legends.

Finally, I must acknowledge the special assistance of James B. Griffin, Albert C. Spaulding, Frederick P. Thieme, Richard K. Beardsley, and Volney H. Jones. These scholars supplied helpful criticism and suggestions during the course of the research and preparation of the manuscript which was originally prepared as a Ph.D. dissertation.

W. D. L.

*September, 1974
Denver, Colorado*

TABLE OF CONTENTS

1	INTRODUCTION	1
2	WOODLAND SITES IN NORTHEASTERN IOWA	11
	Burial Mounds	11
	Mound Groups in Jackson County	12
	Deppe Mound Group	12
	Mound Groups in Clayton County	17
	Mound Groups in Aallamakee County	26
	Miscellaneous Burial Mound Data	56
	Habitation Sites	57
	Miscellaneous Sites in Jackson County	83
	Miscellaneous Habitation Site Data	86
3	ARTIFACT TYPES	89
	Pottery	89
	Marion Thick	89
	Spring Hollow Incised	89
	Spring Hollow Brushed	92
	Naples Stamped	92
	Levsen Stamped	93
	Levsen Punctuated	94
	Spring Hollow Cordmarked	97
	Spring Hollow Plain	98
	Lane Farm Cord-Imprinted	99
	Lane Farm Stamped	100
	Madison Cord-Imprinted	101
	Minott's Cord-Imprinted	103
	Minott's Plain	105
	Minor Pottery Types of Northeastern Iowa	105
	Types with Havana Paste Characteristics	107
	Miscellaneous Single-Cord Decorated Sherds	107
	Shell-tempered Pottery	108
	Cordmarked Body Sherds	108

Ware Groups	109
Havana Ware	110
Linn Ware	110
Lake Michigan Ware	110
Unclassified Types	110
Chipped Stone Artifacts	110
Ground and Pecked Stone Artifacts	118
Bone and Antler Artifacts	120
Shell Artifacts	123
Metal Artifacts	124
Miscellaneous Pottery Objects	125
4 COMPARATIVE ANALYSIS OF MOUND, ROCKSHELTER, AND VILLAGE SITES	127
Pottery Comparison and Seriation	127
Comparative Analysis of Burial Mounds	141
Red Ocher Mounds	142
Mounds Containing Hopewellian Grave Goods	146
Conical Mounds with Few or No Grave Goods	157
Effigy Mounds and Related Tumuli	161
Simple Conical Mounds	164
Analysis of Rock Shelters and Village Sites	165
The Minott's Focus	165
Other Woodland Village Complexes	170
Mound-Village Correlations and Chronology	175
5 CULTURAL SPECULATIONS AND CONCLUSIONS	178
APPENDIX: HOPEWELLIAN TRAITS OF THE DAVENPORT AREA	190
REFERENCES	192
INDEX	199

ILLUSTRATIONS

Frontispiece.	Conical burial mounds at Effigy Mounds National Monument	
1.	Northeastern Iowa, Mississippi Valley, and southwestern Wisconsin, showing location of sites referred to in text	viii
2.	Rock alinements and burials, Deppe Mound 7	13
3.	Rock alinements and burials, Deppe Mound 8	15
4.	North half of burial pit, Pleasant Creek Mound 3	16
5.	Plan of Gudovissy Mound 1	18
6.	Miniature pot from Gudovissy Mound 1	19
7.	Pottery from the mound fill, Harvey's Island Mound 1	19
8.	Cord-wrapped-stick decorated pot associated with burial, Harvey's Island Mound 1	20
9.	Lane Farm Cord Impressed pot fragment, Harvey's Island Mound 2	21
10.	Plan of burials, French Town Mound 10	22
11.	Bone and stone objects, French Town Mound 10	23
12.	Stone objects, French Town, Mound 10	24
13.	Conch columella beads and socketed antler point, French Town Mound 10	24
14.	Levsen Punctated pot, French Town Mound 8	25
15.	Pottery from the "Valley" Mound, Harpers Ferry Mound Group	26
16.	Plan of excavation, Ryan Mound 2	28
17.	Lane Farm Cord-Impressed pot fragment, Ryan Mound 2	29
18.	Plan of excavation, Ryan Mound 3	30
19.	Plan of excavation, Ryan Mound 4	31
20.	Lane Farm Cord-Impressed pot, Ryan Mound 4	32
21.	Strata of the burial area, Houlihan Mound	32
22.	Brazell's Island Bear Effigy	34
23.	Chipped stone objects from the mound fill, Brazell's Island Bear Effigy	34
24.	Plan of burials, Luth Mound 1	35
25.	Plan of burials, Luth Mound 3	36
26.	Cross section of Waukon Junction Mound 4 (the "Burned Earth" Mound)	37
27.	The Lane Farm Mound Group	38

28.	Lane Farm Cord-Imprinted pot, Lane Farm Mound 3	40
29.	Pottery pipe bowl and Snyder's Notched Point, Lane Farm Mound 3	41
30.	Plan of burials, Lane Farm Mound 11	42
31.	Copper "celts" or plaques, Lane Farm: a, celt from Mound 11; b, celt from field near Mound 11	43
32.	Sherds of a Lane Farm Cord-Imprinted pot, Lane Farm Mound 12	43
33.	Plan of burials, Lane Farm Mound 13	44
34.	Lane Farm Cord-Imprinted pot, Lane Farm Mound 13	45
35.	Lane Farm Cord-Imprinted pot, Lane Farm Mound 13	45
36.	Lane Farm Cord-Imprinted pot, Lane Farm Mound 13	45
37.	Plan of burials, Lane Farm Mound 16	46
38.	Lane-Farm Cord-Imprinted pot, Lane Farm Mound 16	47
39.	New Galena and Hog Back Mound Groups	47
40.	Levsen Stamped pot, New Galena Mound 1	48
41.	Perforated bear canines and copper hemispheres, New Galena Mound 1	49
42.	Sherds of pot from New Galena Mound 4	50
43.	Plan of burial pit and adjacent mound floor, New Galena Mound 28	52
44.	Plan of excavations and burials, Hog Back Mound 1	54
45.	Pot from Hog Back Mound 3	55
46.	Lane Farm Cord-Imprinted pot from Slinde Mound 6	56
47.	Chipped stone, bone, and antler artifacts from the Spring Hollow Shelters	58
48.	Miscellaneous potsherds from the Elephant Site	67
49.	Potsherds from the Waterville Rock Shelter	74
50.	Potsherds from the Waterville Rock Shelter	74
51.	Spring Hollow Plain Sherd from Levsen Rock Shelter	78
52.	Pottery, shell object, boatstone, and chipped stone from Mouse Hollow Rock Shelter	79
53.	Pottery from the Mouse Hollow Rock Shelter	80
54.	Lake Michigan Ware potsherd from the Verne Hute Rock Shelter	85
55.	Marion Thick sherds from the Elephant Site	90
56.	Spring Hollow Incised sherds from Spring Hollow Rock Shelter No. 1	91
57.	Part of Spring Hollow Incised pot from Spring Hollow Rock Shelter No. 1	92
58.	Potsherds from the Levsen Rock Shelter	93
59.	Naples Stamped and Havana Cordmarked potsherds from the Levsen Rock Shelter	94
60.	Potsherds from the Levsen Rock Shelter	95
61.	Levsen Punctated sherds from the Levsen Rock Shelter	96
62.	Spring Hollow Cordmarked sherds from the Spring Hollow Rock Shelter No. 1	97

63.	Potsherds from Spring Hollow Rock Shelter No. 1	98
64.	Aberrant form of Lane Farm Cord-Imprinted pottery from the Waterville Rock Shelter	99
65.	Exterior surfaces of typical Madison Cord-Imprinted rims	100
66.	Interior surfaces of typical Madison Cord-Imprinted rims	101
67.	Lake Michigan Ware sherds from the Minott's Rock Shelter	102
68.	Minott's Cord-Imprinted sherds from Minott's Rock Shelter	103
69.	Minott's Plain and Spring Hollow Brushed sherds from Spring Hollow Rock Shelter, No. 1	104
70.	Triangular and triangular side-notched projectile points	111
71.	Ovoid and lanceolate projectile points	112
72.	Large side-notched and straight-stemmed projectile points	113
73.	Contracting-stemmed projectile points	113
74.	Expanding-stemmed projectile points	114
75.	Corner-notched projectile points	115
76.	Large ovoid and lanceolate blades	116
77.	Oval knives	117
78.	Anvilstone from Minott's Rock Shelter	119
79.	Platform pipes from the New Galena Mound Group	121
80.	Bone and antler objects from the Levsen Rock Shelter	122
81.	Ceramic pipe from the Gingerstairs Rock Shelter, No. 1	125
82.	Diagram showing formal and sequential relationships of Woodland pottery types in northeastern Iowa	128
83.	Chronological placement of Woodland culture groupings and selected sites in northeastern Iowa	130
84.	Decorative variations of Spring Hollow Incised	131
85.	Decorative variations of Naples Stamped	132
86.	Decorative variations of Levsen Stamped	133
87.	Decorative variations of Levsen Punctated	133
88.	Decorative variations of Lane Farm Cord-Imprinted	134
89.	Decorative variations of Madison Cord-Imprinted	135
90.	Additional decorative variations of Madison Cord-Imprinted	136
91.	Rim profiles of Havana Ware	137
92.	Miscellaneous rim profiles of northeastern Iowa pottery	137
93.	Miscellaneous rim profiles of northeastern Iowa pottery	138
94.	Vessel forms of Lane Farm Cord-Imprinted	139
95.	Vessel forms of Levsen Stamped, Naples Stamped, Spring Hollow Incised, Spring Hollow Cordmarked, and Madison Cord-Imprinted	140

TABLES

1.	Numerical distribution of artifact types from Spring Hollow Rock Shelter No. 1	59
2.	Numerical distribution of artifact types from Spring Hollow Rock Shelter No. 2	60
3.	Artifacts from the approach trench, Spring Hollow Rock Shelter No. 2	61
4.	Numerical distribution of artifact types from Spring Hollow Rock Shelter No. 3	62
5.	Numerical distribution of artifact types from Gingerstairs Rock Shelter No. 1	63
6.	Numerical distribution of artifact types from Minott's Rock Shelter	64
7.	Numerical distribution of artifact types from Trench C, Elephant Village Site	66
8.	Numerical distribution of artifact types from 1955 Test I at the Elephant Site	69
9.	Numerical distribution of artifact types from 1955 Test II at the Elephant Site	69
10.	Numerical distribution of artifact types from Test I, Nelson Dewey Site	72
11.	Artifact inventory of the Waterville Rock Shelter	75
12.	Artifact inventory of the Sixteen Rock Shelter	76
13.	Inventory of artifacts from the Levsen Rock Shelter on which depths were measured	77
14.	Inventory of artifacts from three Jackson County site	81, 82, 83
15.	Percentages of pottery types by levels, Spring Hollow Rock Shelter No. 1	129
16.	Percentages of pottery types by levels, Nelson Dewey Site	141
17.	Comparative trait list for Red Ocher Mounds	144, 145
18.	Mounds with Hopewellian grave goods	147
19.	Comparative trait list for 11 Middle Western burial complexes	150-153
20.	Coefficients of association for 11 Middle Western burial complexes	154
21.	Conical mounds with few or no grave goods	158
22.	Effigy mounds and related conicals	160
23.	Simple conical mounds	161
24.	Comparative trait list for sites of the Minott's focus	166



A bluff overlooking the Mississippi River just north of the Yellow River at Effigy Mounds National Monument. The top of this bluff and plateau behind it contain many ancient mounds, some linear, some in effigy, and a series of 19 conical mounds ending at the point of the bluff.

Physiographically, the portion of Iowa with which this report deals differs markedly from the remainder of the state. Allamakee, Clayton, and Dubuque Counties, along with parts of Jackson County, are included in the so-called Driftless Area (Martin, 1916, p. 75). This tract in southwestern Wisconsin and northeastern Iowa was not glaciated during the Pleistocene ice advances. Salient among its features are deep valleys cut through sandstone and limestone formations, often to depths of 300 or more feet. These valleys are bounded by steep, precipitous walls. The uplands between the valleys were once covered with forests of the northern hardwood type and represented the last great intrusion of the woods into the prairie-plains environment to the west. The Driftless Area is some 120 miles wide, most of which lies on the east side of the Mississippi River in present-day Wisconsin. Parts of the area resemble the Ozark Plateau of Missouri and Arkansas.

Important culture centers do not appear to have developed in the area in prehistoric times. Groups living in northeastern Iowa appear to have been culturally marginal to peoples on comparable time levels in other Middle Western areas. Northeastern Iowa is part of a larger area of distinctive aboriginal cultural flavor, of which southern Wisconsin comprises the major part. Northeastern Iowa appears to have been marginal, as well, to the area now included in the

State of Illinois. A case may be made for marginality of southern Wisconsin to the Illinois area as well. However, recent studies indicate that early peoples in southern Wisconsin, although influenced from outside sources, pursued their own particular line of development, and placed their own distinctive stamp on cultural items or ideas they borrowed (Ritzenthaler, 1953, pp. 2-41; Baerreis, Daifuku, and Lundsted, 1954, pp. 1-36; Wittry and Ritzenthaler, 1956, pp. 244-254; Rowe, 1956, pp. 9-103).

In spite of its peripheral position, cultural manifestations in this region were studied at an early date. I. A. Lapham published a volume (1855) summarizing his researches in Wisconsin mound groups. Certain sites in the western part of Wisconsin were mentioned in this paper. Lapham's work is valuable as a compendium of site locations and maps of mound groups for students of Wisconsin archeology, and bears upon the archeology of northeastern Iowa as well. Between 1881 and 1895, T. H. Lewis and A. J. Hill, of St. Paul, Minn., mapped many of the mound groups of the upper Mississippi River Valley (Keyes, 1930, p. 216). Like the work of Lapham, the detailed plats of the Lewis and Hill survey have value today as a compendium of sites. Such maps are valuable aids in distribution studies of mound types, and may be of worth eventually in arriving at population estimates. They may also serve as a means of learning

what once existed in the region, for many of the mound groups have been destroyed through agriculture and other modern activities.

In two papers published in Annual Reports of the Bureau of American Ethnology, Cyrus Thomas described northeastern Iowa mounds, notably those on the Lane and Fish farms in northern Allamakee County, and others in the vicinity of Dubuque (Thomas, 1894, pp. 99–110). Unfortunately, Thomas' descriptions were general. Although the descriptions suggest probable chronological position, they lack details necessary for thorough comparative studies. South of the region with which this report is concerned, groups of conical mounds early commanded the attention of students associated with the Davenport Academy of Natural Sciences. During the closing decades of the 19th century, conical mounds in several groups near the city of Davenport, Iowa, were examined by Tiffany, Lindley, Pratt, and others. The results of their work are reported in the *Proceedings of the Davenport Academy of Natural Sciences*. It is evident from the reports that these mounds were largely of Hopewellian origin. A part of the work of the Academy has been summarized by a modern student (Bennett, 1945, pp. 113–122). Both Griffin (1946, p. 68) and Bennett (1945, p. 121) assign these mounds to the Hopewellian Phase of the Woodland Culture Pattern. North of the area in which the Academy's investigations were made, few Iowa mounds were studied until the period in the 1920's and 1930's during which time the Iowa Archaeological Survey was in operation.

Brief descriptions published in a variety of media, written for the most part by local amateur archeologists, are to be found in the literature. Perhaps the most valuable paper on Iowa mounds written in the 19th century is that by Frederick Starr compiling scattered fragments of information (Starr, 1897, pp. 1–24). However, fieldwork of a quality

permitting detailed descriptions of culture content and chronological outline did not appear until the early decades of the 20th century through the efforts of the Iowa Archaeological Survey.

Sponsored by the State Historical Society of Iowa, and begun in 1922 by the late Charles R. Keyes of Mount Vernon, Iowa, this survey was the first systematic study of the state's archeological resources. Through the survey, Keyes planned to locate and map the state's archeological sites and to make recommendations on the advisability of State ownership for certain of these. With authority granted by the State Historical Society of Iowa, Keyes visited local sites and studied the collections of Iowa's many amateur archeologists. He made surface collections on the sites he visited and stimulated local amateurs to donate parts of their collections to the Society. Among those he was able to obtain, the Ellison Orr collection (from sites predominantly in Allamakee County) was the most notable because of its thorough documentation and spectacular nature.

Other important acquisitions which came to the State Historical Society through Keyes' efforts included the Noe collection from the vicinity of Amana, and the small but significant Hawbaker collection from the Boone River area. Later, when Federal Emergency Recovery Administration (FERA) funds became available, Keyes obtained authority to make excavations. Ellison Orr, of Waukon, Iowa, was appointed field supervisor, and the Iowa Archaeological Survey began its field work in mound groups and village sites along the Upper Iowa and Mississippi Rivers in Allamakee and Clayton Counties (Keyes, 1934, pp. 321–354). The bulk of the excavations were made between 1934 and 1936.

The association of Charles R. Keyes and Ellison Orr was a fortunate one for the study of prehistory. Keyes had received some archeological training during his years as a

student in Germany. Orr had been employed variously as a grade school teacher, farmer, and telephone company manager. Both men were highly intelligent and possessed a familiarity with almost every phase of the natural sciences. Both went out of their way to equip themselves with knowledge necessary to archeological field research. Their earliest fieldwork, accomplished before they had obtained great familiarity with archeological methods, lacked certain refinements of technique, but, viewed as a whole, their excavations were sufficiently controlled to obtain information for most of the essential features of nearly all of the sites they studied. Errors and shortcomings in their work may be ascribed to overall scant knowledge in the field of eastern United States prehistory at the time. They could not be expected to forecast, in 1934, conclusions which seem obvious to the modern student as he looks back over more than 30 years of research. Only recently has a comfortable chronology been developed with artifact types to mark the various horizons.

Orr's training as a surveyor was important to the project. He also possessed an ability to make objective observations and to report these clearly and succinctly. Keyes' contact with professional archeologists gave him some understanding of the materials with which they worked and of the problems to be resolved, in addition to an understanding of the planning necessary to give direction to the project. He made use of his knowledge to such a degree that no major cultural entity recognized in the Mississippi Valley at the time of their excavations was missed in the fieldwork. This is an important consideration, for subsequent fieldwork in Iowa has been meager. Their notes and collections represented the largest repository of information available on the subject of prehistory within the state at the time they finished their work. The collections they amassed consist of materials from their ex-

cavations and surveys, collections donated by amateurs, notes, maps, photographs, manuscripts, and files of survey sheets arranged by counties.

Study of these collections affords a good sampling of Iowa prehistory and, in addition, makes clear those areas where further research is needed to make the record more nearly complete. The collections and notes are most extensive for several of the eastern counties of Iowa (fig. 1). Here Keyes and Orr excavated many rock shelters and mounds. The work was concentrated in two localities. The northeastern corner of Iowa (Allamakee and Clayton Counties) was covered in detail. In Linn and Jackson Counties of east central Iowa, mounds and rock shelters provided information paralleling the results of the work in the northeastern section. Other parts of the state seem to have been covered in less detail. Southeastern Iowa excavations concentrated on the Glenwood Culture, which appears to be an Iowa variant of the Nebraska Culture (Strong, 1935, pp. 124-167, 287). The Mill Creek sites of northwestern Iowa were tested rather extensively, and the material in the collections from these excavations has helped provide fairly detailed understanding of this interesting late prehistoric manifestation.

The materials contained in the collections of the Iowa Archaeological Survey have been known to prehistorians of the eastern United States since the time they were collected. However, no detailed statements have been made concerning them. Both Keyes and Orr were advanced in age when they embarked upon their project, and both died before they could publish their work. It was for this reason that the present study was undertaken, and the material presented in the ensuing pages is drawn from the notes and artifact collections amassed by the Iowa Archaeological Survey. Exceptions to this are the materials presented on the Highway Thirteen Rock Shelter and the Nelson Dewey Site. Information on these sites is

based on excavations carried out by the author during tenure as archeologist at the Effigy Mounds National Monument near McGregor, Iowa. In addition, some of the information presented on the Highway Thirteen Rock Shelter is based on collections made by Professor Leland Cooper of Hamline University, St. Paul, Minn.

Although it was not possible for Keyes and Orr to present in a single manuscript the synthesized results of their research, such syntheses have appeared for other parts of the eastern United States. Hence, by the time this paper was prepared, a chronological framework, embracing numerous prehistoric culture complexes, had been advanced for the Middle West. The general outlines of this framework by now have been generally accepted by most archeologists working in the region.

The culture history of the East appears to have been relatively uniform over the whole of the geographic area involved. In nearly every local sequence, evidence exists for an early (ca. 9,000–10,000 years ago) occupation by hunters whose economy roughly resembled that of the Clovis and Folsom hunters of the High Plains along the east slope of the Rocky Mountains. Remains of such groups have been reported from localities as widely separated as Missouri, Michigan, Illinois, Maine, and Alabama. Data are available to support a theory of continuous development of the life of these people, from generation to generation, into one characterized by a wider variety of projectile point styles; larger population groupings; a more settled existence in areas of greater economic advantage; some elaboration of the arts (particularly stoneworking), and more elaborate burial practices. The cultural assemblages representing the existence of such groups are called Archaic in the generally accepted terminology of the prehistory of eastern United States.

The Archaic probably flourished from around 8,000 years ago until perhaps as late

as 3,000 to 5,000 years ago. At the end of this period there seems to have been a gradual shift in some aspects of culture. The basic economy did not change radically, although some investigators have proposed the beginnings of agriculture in this transitional period. By the end of 1,000 or 2,000 B.C., groups over most of the East had developed some simple forms of ceramics, and had begun to bury their dead in earth mounds. In some localities—notably southern Ohio and to a lesser extent in the valley of the Illinois River—these mounds were quite large and contained structures prepared for use as tombs. These, in turn, contained burials which were given quite elaborate treatment, and which were accompanied by special burial offerings. In the scheme of eastern United States prehistory, this period is called the Early Woodland. To some degree it may be looked upon as transitional between the Archaic and later Middle Woodland, the latter reaching its most complex expression in the Hopewell burial mounds of southern Ohio and the Illinois River Valley.

It is a matter of speculation as to the degree to which agriculture provided an economic base on which the Middle Woodland peoples erected this superstructure of arts, objects, and beliefs. For parts of the Middle West, it appears that agriculture played a prime role in supporting the cultural developments. However, such an assumption is not so clearly warranted in other areas. One such area is that under consideration here.

Judging from the evidence of the burial mounds, the remains of the arts and crafts found in village deposits, and the distribution of remains, the Middle Woodland reached its developmental peak and widest sphere of influence around A.D. 200; then it gradually declined. Over most of the East there is ample evidence for progressive simplicity of burial mounds and treatment accorded the dead. This is not to imply that there was a decline of population. In some

areas of the East, distribution and frequency of sites indicate population increase.

As the Middle Woodland declined, another cultural development was on the rise in the eastern area. This so-called Mississippian Culture Pattern, in its most distinctive form, is overwhelmingly of southern distribution. Its influences, however, were felt over a much wider area, and small "pioneer" communities, conforming relatively closely to the more southerly models, were found as far north as central Wisconsin and as far west as Kansas City, Mo. In some parts of the Middle West, an increasing Mississippian influence on the Woodland culture base is evident. To modern students of American archeology, the characteristics of Middle Mississippi culture are well known. The large organized villages; temple mounds; elaborate ceramics; clear dependence on intensive horticulture; and the distinctive complex of religious objects and art motifs comprising the Southern Cult, all have been presented in the literature. Middle Mississippi communities evidently were at the height of their influence from about A.D. 1200 to 1300 or 1500, although their developmental phases may have appeared as early as A.D. 600, and the last vestiges of the Mississippian life-way are still to be discerned in the habits of some modern aboriginal groups.

This, then, is the general framework of Middle Western archeology as currently known by American archeologists. It is against this taxonomic and chronological structure that the materials analyzed on the following pages will be considered.

This study was made possible through the cooperation of the State Historical Society of Iowa. There was need for arrangement of the Keyes material, as the collections of the Iowa Archaeological Survey are designated. This collection had been moved to the State Historical Society's offices on the campus of the State University of Iowa after the death of Charles R.

Keyes. At the same time, the National Park Service was in need of a study of material in these collections pertaining to the prehistory of Effigy Mounds National Monument. An arrangement was made for me to go to Iowa City, supervise the ordering of the collections, and begin a study of the Woodland sites of the northeastern counties. Work was begun on the collections from mounds and rock shelters in Allamakee, Clayton, Jackson, and Linn Counties.

Some additional material, not included in this paper, was gathered on sites in Cerro Gordo, Chickasaw, Floyd, Marshall, Webster, Hamilton, Johnson, and Mills Counties. The material studied indicated a very extensive Woodland occupation in Iowa, and that this occupation was of considerable antiquity in the region. The collections also provide evidence that an intrusion of Mississippi Pattern elements in late prehistoric times may have fused with the local indigenous Woodland to produce new cultural entities, some of which strongly parallel known developments in the eastern Plains area.

The material presented in this paper is limited by the collections available and, therefore, the discussion focuses on two localities in the eastern part of Iowa. The collections were most complete from Allamakee, Clayton, Jackson and Linn Counties. Allamakee and Clayton Counties are located in the extreme northeastern corner of Iowa along the Mississippi River (fig. 1). Jackson County is separated from these two by Dubuque County, and from Linn County by Jones County. A gap also separates Linn County from Allamakee and Clayton Counties.

Little or no data were available from the intervening areas. Northeastern Iowa, as referred to on the pages which follow, designates the area from the southern boundaries of Jackson, Jones, and Linn Counties north to the Minnesota-Iowa boundary; and from the Mississippi River

west to the western boundaries of Linn, Buchanan, Fayette, and Winnesheik Counties. In reference to archeological remains, however, the definition must be restricted further, for detailed data were available for only the four counties listed above. It is assumed that similar materials would be found in the other northeastern counties if collections were available for study.

In the early stages of research on northeastern Iowa collections, two problems important to the interpretation of Effigy Mounds National Monument were given foremost consideration. The notes donated by Ellison Orr to the National Park Service contain descriptions and photographs of excavations which he performed for the Iowa Archeological Survey on the Lane farm in northern Allamakee County. The distinctive pottery type found repeatedly in the Lane farm mounds shows an interesting mixture of Late Woodland and Hopewellian decorative treatments. This mixture of Late Woodland and Hopewellian traits is reflected in other grave goods and in mound structure as well.

At the urging of several local amateur archeologists, I directed limited excavations in the Spike Hollow Rock Shelter in Allamakee County on a tributary of Paint Creek. The most significant discovery was the recovery of sherds of the pottery type found in the Lane Farm mounds in association with a sherd resembling Hopewell Zoned Incised and sherds of Madison Cord-Impressed (Logan, 1952b, pp. 11-12). The problem of the relationship of Hopewell, Late Woodland, and the Lane Farm complex therefore became very important in the investigations. The second problem of importance in connection with the needs of Effigy Mounds National Monument was that of identifying a village complex attributable to peoples who built effigy mounds. This study will seek to provide evidence for such a complex. It will attempt to place the Lane Farm complex in a meaningful context with

respect to Late Woodland and Hopewellian remains, and to examine the cultural processes which may have operated to produce it in northeastern Iowa.

As the research progressed, it became apparent that the series of burial mounds excavated by the Iowa Archeological Survey which were simpler in construction and grave offerings than Hopewellian mounds, nevertheless seemed to bear some relationship to Hopewell. These mounds were segregated from other groupings and given the tentative label of Allamakee Focus. A part of the problem will be to present evidence for their cultural and chronological position with respect to Hopewell, and to suggest cultural processes involved in their development. These mounds also bore relationships to the effigy mounds and Lane Farm complex. Evidently a complex set of forces was in operation in the northeastern Iowa area at some time during the Hopewellian period. This study will attempt to illuminate these conditions and to suggest the interrelationships of all mound classes apparently belonging to this interesting period of upper Mississippi Valley prehistory.

Another set of burial mounds contained red ocher and an elaborate assemblage of grave offerings. Resemblances to the Early Woodland Red Ocher mounds of Illinois were evident. The discussions of these mounds will seek to outline the beginnings of the Woodland sequence in northeastern Iowa, and demonstrate relationships to surrounding sites in Wisconsin and Illinois.

As I became more familiar with the distribution and content of sites, other problems involving the interaction of primitive peoples of the upper Mississippi River Valley with their environment were apparent. It was noted that the larger sites were on the broad river terraces close to the Mississippi River, and that there were numerous rock shelter campsites in the valleys of smaller tributary streams. The meaning of this distribution will be considered in an attempt

to illuminate environmental factors acting upon the Woodland peoples of the region.

The number of sites representing each time period varies. The general trend appears to be one of increasing numbers of burial mounds and heavier village occupation as time progressed. The generalization that population was on the increase seems warranted. Factors producing an increase in population will be discussed in the hope that some light may be thrown on the economic aspect of the Indians' relationship to the environment. It is evident that the Mississippi River itself played a strong part in the life of Indians in eastern Allamakee and Clayton Counties. The problems associated with environment may be summarized as involving both the Mississippi River and the northeastern Iowa terrain in three aspects: (1) effects on site location; (2) effects on population distribution; and (3) population size. No doubt the river also was important in travel and trade. However, evidence on this subject was lacking, and the river's part in promoting or hindering contacts with other peoples could not be presented in other than speculative terms.

This study, then, seeks to describe and analyze the collections from sites of the Woodland Pattern in northeastern Iowa. The archeological components will be grouped with respect to observed artifact characteristics in an attempt to define culture types. The meaning of the groupings which emerge will be considered in terms of geographical situation and chronology. The groupings will be considered within the context of eastern United States culture history with particular reference to cultural manifestations in Wisconsin, Minnesota, and Illinois. The cultural and environmental questions will be considered separately.

Certain modifications of usual methods of analysis were necessary due to the circumstances under which the work was carried out. The Keyes and Orr notes were available long before an examination of the col-

lections could be made. The notes were quite detailed in their description of features observed in the excavations, but varied in the amount of detail devoted to description of artifacts. Tentative typological categories had been set up for artifacts based on the limited descriptions in the notes, and on comparisons of this information with artifacts in small collections available locally. Inspection of the larger mass of artifact data in the Keyes collection produced many modifications of both typological categories already set up, and of hypotheses formed concerning culture processes.

Physical limitations of laboratory space imposed other modifications of method. Restricted work space and incomplete cataloging of the collections made it necessary to study the artifacts from each site individually, or from each level within certain sites. Small representative samples of each artifact type were selected from the excavation units for comparison with those from other units. Time limitations also governed method of analysis. The Keyes collection was located in a repository some distance from the home of the investigator, and it was necessary to gather all data in one short period of continuous work. Likewise, it was not possible to make frequent re-examination of the material. Therefore it was important to make the original notes as complete as possible. In studying pottery, for example, re-examination would have aided materially in developing types. As this could not be done, the investigation was carried out with reference to the original notes made on ceramics, and with reference to small collections available at or near Effigy Mounds National Monument. Fortunately for the analysis, the variations which presented greatest typological problems were common in local sites and collections.

Numerically, potsherds were the most common single class of remains recovered. The habitation sites contained a total of 10,152 sherds. Another 248 sherds were

found in mound excavations, in addition to 21 complete or nearly complete vessels. In studying these collections, observations were made on characteristics of temper, texture, hardness, color, surface finish, decoration, and vessel form. As the collections were composed largely of sherds, study of form was most often confined to observations of vessel rims, lips, and shoulders. For each individual site the sherds were separated into broad classes. After an initial sorting based on temper, texture, vessel form, and general surface finish, subgroups were developed according to detailed differences in these characteristics and in decoration. These smaller groupings were described in the notes taken on the collections. As a result, many more variations were noted than were represented in the final typological categories and descriptions. In producing the final type descriptions, the minor variations were compared and many were subsumed under broader categories.

As the Woodland sherds were all grit tempered, temper characteristics entered into the analysis of the classes to a lesser degree than did other paste characteristics, certain attributes of vessel form, and surface finish. In the classification of body sherds, the groups segregated in the initial inspection were produced on the basis of thickness and thinness of the sherds, texture of the paste, and the exterior surface treatment. In the case of the latter attribute, the pottery was separated into plain or cordmarked classes, and the cordmarked group was broken down into two, and sometimes three, categories. As the work progressed and greater familiarity with the material developed, separation of the different cordmark variations was made automatically as part of the overall sorting operation. Sherds bearing decoration, rims, shoulders, and other fragments with special characteristics were handled separately from the body sherds, but segregation of variations followed the same lines listed above.

The final type groupings were assigned names according to the practice which has become accepted within the eastern United States over the past several decades. Certain type names are drawn from local sites. These designate types which are either new in the literature on Woodland materials, or which are believed to be sufficiently different from related pottery classes described in surrounding areas to warrant their presentation as separate entities. Others are names carried over from the type descriptions of surrounding regions. These names have been employed where type identity has been indicated through comparison of local pottery with ceramics from other parts of the Middle West. Where local variation was evident in these groups, such variation has been indicated in the descriptions.

Projectile points and other chipped stone tools were second only to pottery fragments as the most common form of artifact remains in northeastern Iowa sites. A wide variety of projectile point forms appeared. Eight major classes were differentiated and several subtypes were noted within the major categories. All of the types presented are descriptive categories, but the possibility that certain of these may be found eventually to conform to artifact types with chronological and spatial significance is believed likely. In separating the classes of chipped stone material, the procedure was similar to that usually followed in cases where nothing is known about spatial and temporal distribution. The obtrusive variations were separated according to criteria which varied with the classes. Form was found to be of most importance. Size sometimes was employed as a sorting criterion. The method was to seek one or two characteristics which distinguished a particular form from other artifacts within the broad class of "projectile point," "knife," etc. Descriptions were then made based on the groups segregated. Similar procedures were employed in grouping the burial mounds and the several

village complexes in proposing culture types.

The following section of the paper is a site-to-site description of the burial mounds excavated by the Iowa Archaeological Survey. This is succeeded by a section treating village sites and rock shelters in like manner. A section defining artifact types follows this. The remainder of the paper is comparative, and includes a discussion of problems connected with the Woodland occupations of northeastern Iowa.



The Mississippi River trench at Pikes Peak State Park south of McGregor, Iowa.

2

WOODLAND SITES IN NORTHEASTERN IOWA

BURIAL MOUNDS

Groups of burial mounds are the most obtrusive and perhaps the most common evidence of prehistoric occupation in northeastern Iowa. The groups range in size from isolated tumuli scattered over the landscape to huge aggregates containing several hundred mounds. In the Harpers Ferry Mound Group alone, an estimated total of 900 mounds existed before agricultural operations and other modern activities obliterated them entirely (Keyes, 1930, p. 220). It is unfortunate that most of the large groups have been destroyed. The largest single cluster remaining in the northeastern counties of Iowa appears to be the Sny-Magill Mound Group on the large Mississippi River terrace at the confluence of Sny-Magill Creek and Johnson Slough, 8 miles south of McGregor, Iowa. The Sny-Magill group is now protected in a detached unit of Effigy Mounds National Monument.

The northeastern Iowa mounds include a variety of types that can be distinguished on the basis of exterior form and internal content. Among the most spectacular are the effigy mounds, a few groups of which are distributed along the eastern border of Iowa in Allamakee, Clayton, and Dubuque Counties. Many such mounds have been excavated in Wisconsin, especially by archaeologists affiliated with the Milwaukee Public Museum, but few have been studied in Iowa. The relatively low return in in-

formation and artifacts in relation to the amount of funds and effort expended in excavation seems to have been a factor governing this. Nevertheless, these few effigy mounds were probably of prime importance in local culture history, and detailed study of the groups which remain perhaps would contribute moderately to the understanding both of the effigy complex as a whole and of local cultural relationships.

Of more common occurrence are those mounds called "linears" and the so-called "chain-mounds." The former are oblong earth embankments, and the latter are alinements of conical mounds connected by additional earth fill. Investigators have included these in the effigy classification, partly on the basis of their form, and partly on the basis of observed cultural similarities (Rowe, 1956, pp. 69, 72). Although this classification appears warranted, it is probably significant that distribution of the linear mounds extends far beyond that of the true effigies—in Iowa, at least. Like the effigy forms, the linears and chain-mounds are in need of further study. The most common mound type in the locality considered here is the conical. Such mounds are circular in ground plan and present a low, dome-shaped silhouette. They vary considerably in diameter and height. Most are small, seldom exceeding 60 feet in diameter and 5 to 6 feet in height. Average size for these mounds is probably nearer 30 feet in diameter and 2 to 3 feet in height.

The information presented on the pages which follow summarizes the excavations made in local mounds by Keyes and Orr with the Iowa Archaeological Survey. Many were nondistinctive and difficult to place in relationship to those which produced more information. Often the mound data were general, not because of lack of careful excavation and reporting on Orr's part, apparently, but rather owing to the character of the mounds and to the advanced state of destruction through agriculture. In descriptions presented here, no attempt is made to group the various mounds according to cultural likeness. Instead, they are described according to mound groups. The mound group descriptions, in turn, are taken up in geographic sequence, beginning with the southernmost groups excavated and moving northward up the Mississippi River. This sequence does not follow the chronological order in which the mounds were excavated, as the Iowa Archaeological Survey excavations began in the valley of the Upper Iowa River in the extreme northern part of the geographic area considered here. The Survey's work proceeded gradually southward, finishing with the few mounds studied in Jackson County. The number of mounds excavated was smallest for the southern part of the region.

Mound Groups in Jackson County

Deppe Mound Group. The Deppe Mound Group is located in the northeast quarter of Section 12, Township 86 North, Range 5 East, in Jackson County. The group consisted of eight conical mounds on the spur of a bluff 287 feet high which extended northward along the Mississippi River 1 mile north of Bellvue, Iowa. Orr excavated the two southernmost mounds of the group, which he designated Mounds 7 and 8. Before proceeding with excavation, he mapped the mound group, and his activity brought forth information from the local population

on previous excavations there. At some time considerably prior to his work, three of the mounds were dug into by a Dr. Hanske and several boys from Bellvue. They found burials, "some other relics," and a thin copper plate "on which were scratched some characters" (Orr MS., 1935, vol. III, p. 56). The information gleaned was meager, and Orr was not able to locate any of the previous excavators or any of the material removed from the mounds. Orr's own excavations avoided the mounds dug in this amateur effort.

Mound 7 (fig. 2). Type: conical; Diameter: 30 ft.; Height: 30 in. The burial floor was at the natural bluff-top level. The interior area contained low, irregular walls, less than a foot wide, made of small, flat limestone rocks. The orientation of this structure was southeast-northwest. An elongate mass of five bundle burials was found along the row of rocks in the northeast quarter of the mound. There were no grave goods or other associations (Orr MS., 1935, vol. III, p. 57).

Mound 8 (fig. 3). Type: conical; Diameter: 60 ft.; Height: 42 in. The mound contained a roughly rectangular structure of limestone at the natural level of the bluff top. This was oriented northeast-southwest on its long axis. Parts of six skulls accompanied by other bone fragments were found under the rocks and scattered within the rock enclosure. Some of these were well preserved. The burials were fragmentary and may have been parts of two separate flexed skeletons. Two of the skulls appear to have been those of children. One long bone fragment had two notches cut in it. In the east half of the mound was a disk cut from a human skull. From this same part of the mound came a fresh-water mussel shell.

Pleasant Creek Mound Group. This was a line of five conical mounds along the east edge of a terrace north of the mouth of Pleasant Creek, in Sections 4 and 5, Township 85 North, Range 5 East. One mound at

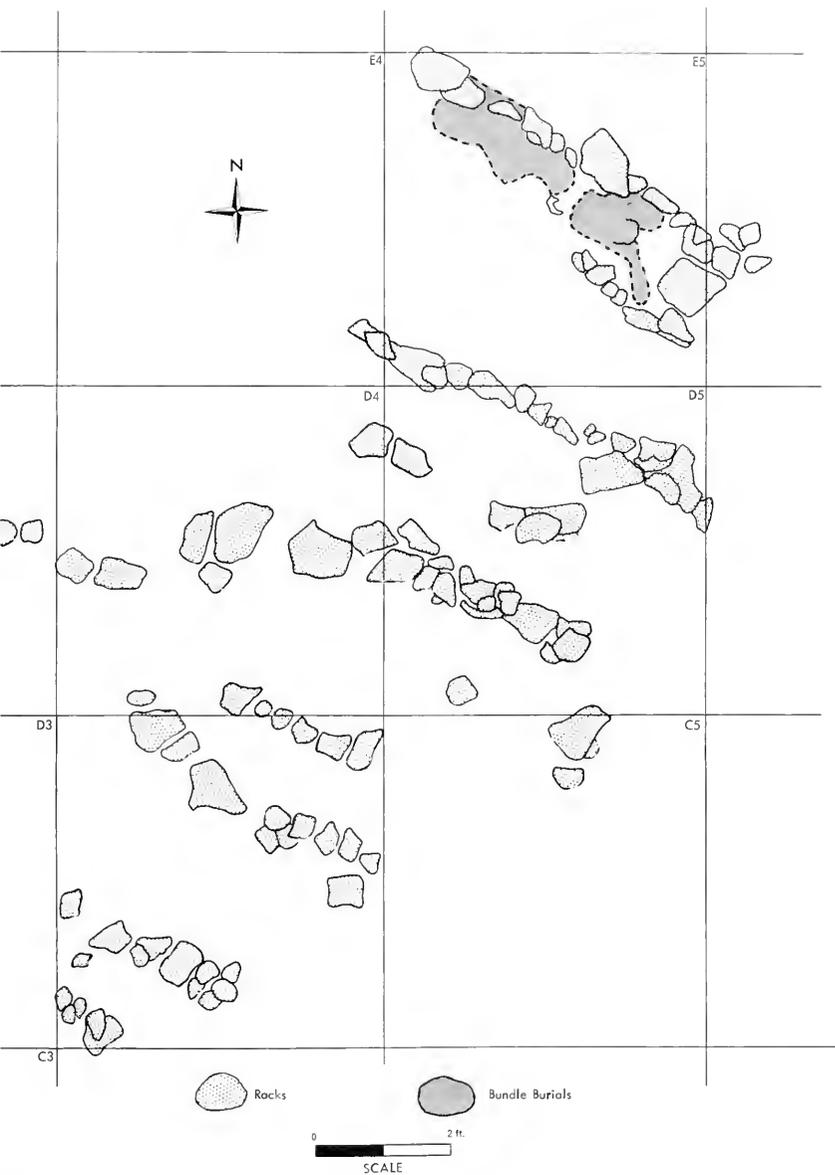


Figure 2. Rock alinements and burials, Deppe Mound 7.

the extreme north end of the group was located on Section 33, Township 86 North, Range 5 East. Another line of mounds once existed in this group but it has been obliterated by repeated plowing. The farmer found beads in the field where the line of mounds originally existed. Orr reported these to be a type of trade beads of European manufacture (Orr MS., 1935, vol. III, p. 18). In the part of the mound group which remained intact, Orr excavated Mounds 2 and 3.

Mound 2. Type: conical; dimensions unspecified. Mound 2 had been subjected to two previous excavations, the first by the sons of a former local minister. They were said to have dug a pit about 6 feet long, 6 feet wide, and 6 feet deep. According to Orr's informants, six or seven skeletons were found "lying across each other" (Orr MS., 1935, vol. III, p. 19). With the skeletons were 70 or more large copper beads. The bones of the skeletons seem to have been in an excellent state of preservation, for the boys removed them and kept them for a long time in the basement of the local Lutheran church. Some time later, Henry Gerlach, owner of the land on which the mound group was located, employed a scraper to remove about 3 feet of the mound fill. Still later, around the year 1900, Gerlach excavated a pit 4 feet wide and 6 feet long in the mound. In this pit he discovered a large deposit of fresh-water mussel shells. The pit was said to have been located at the natural level of the terrace. He found no burials, however.

Orr surveyed the mound before excavation and found patchy, irregular strata of very stiff clay at a level corresponding to the mound surface as it then existed. He found that similar clay could be obtained along the bank of a tributary of the deep slough at the foot of the terrace. In his own excavation he found an irregular stratum of this clay just beneath the surface of the mound. According to Gerlach's statement, this would have been at a level 3 feet below the apex of the

mound in its original state. At a depth of 5.5 feet Orr encountered the layer of mussel shells reported by Gerlach.

This layer of shells covered the southwest part of Orr's excavation. The thickness of the stratum varied from single, scattered shells to a deposit 4 inches thick in a compact bed. Below the shells was a black earth layer which gradually changed to yellow clay. Pure sand was encountered at a depth of 9 feet below the top of the mound. In the southwest quarter of the excavation Orr found a bundle burial within the purple clay stratum. Two feet west of the bundle burial, under similar purple clay, were seven leaf-shaped, ovoid flint blanks of the type often found in Hopewellian sites. All were exceedingly well flaked and were made of high quality blue-gray flint. Orr believed the bundle burials were at the same level as the skeletons found by the sons of the Lutheran minister. He thought that the flint blanks also were included in this stratum. Orr's statement on the excavation of this mound contains observations on how he thought the mound had been constructed:

The mound was begun by clearing an area on the terrace surface at least thirty feet in diameter, over which was spread a layer of fresh clamshells from the nearby river, varying in thickness from one shell to a compact bed, in places 4 inches thick. Black earth made blacker by disintegrated charcoal which was packed solidly in the interstices. Then over this was built a mound of yellow clay to a height of 5.5 feet, the last foot, in the center being largely purplish clay brought from the banks of a small creek flowing across the north part of the terrace. In doing this, a single ceremonial flint, the same as the 7 later deposited, was thrown in an inclusive deposit in the mound earth, in the southwest quarter at 36 in. above the natural level.

At this level and in this purplish clay were found the skeletons and large copper beads

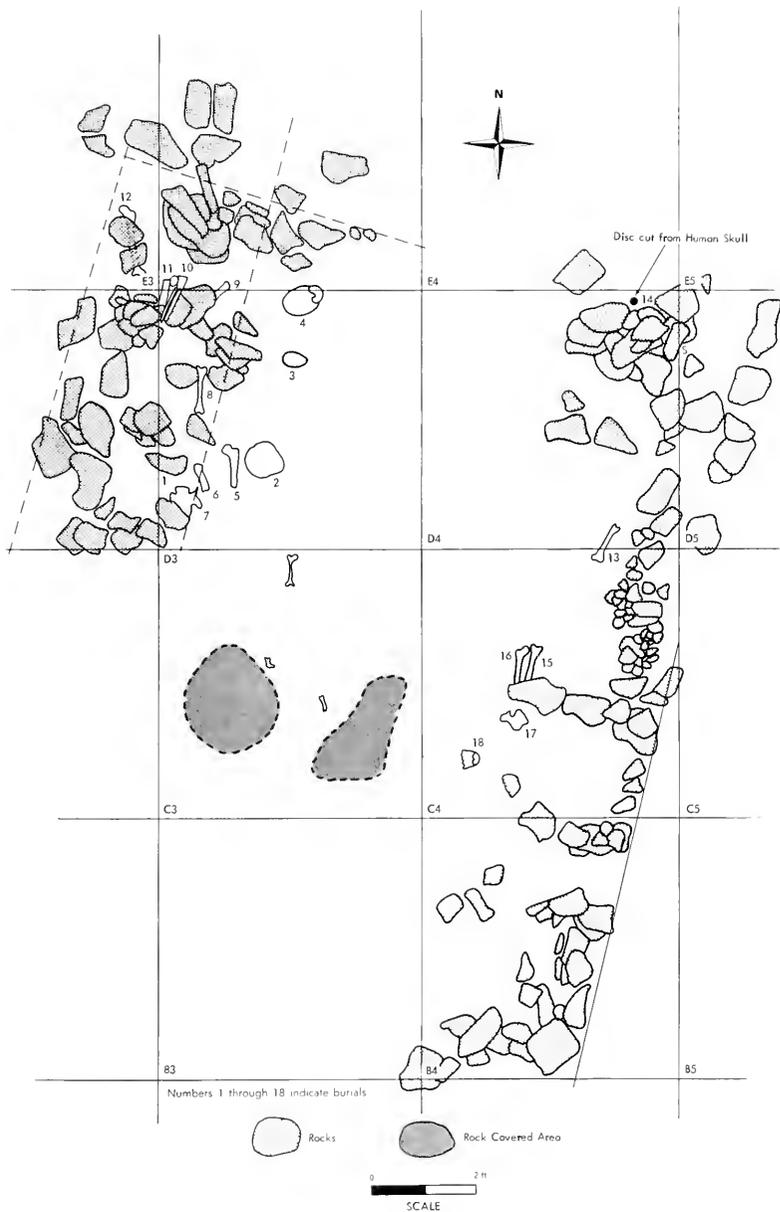


Figure 3. Rock alinements and burials, Deppe Mound 8.

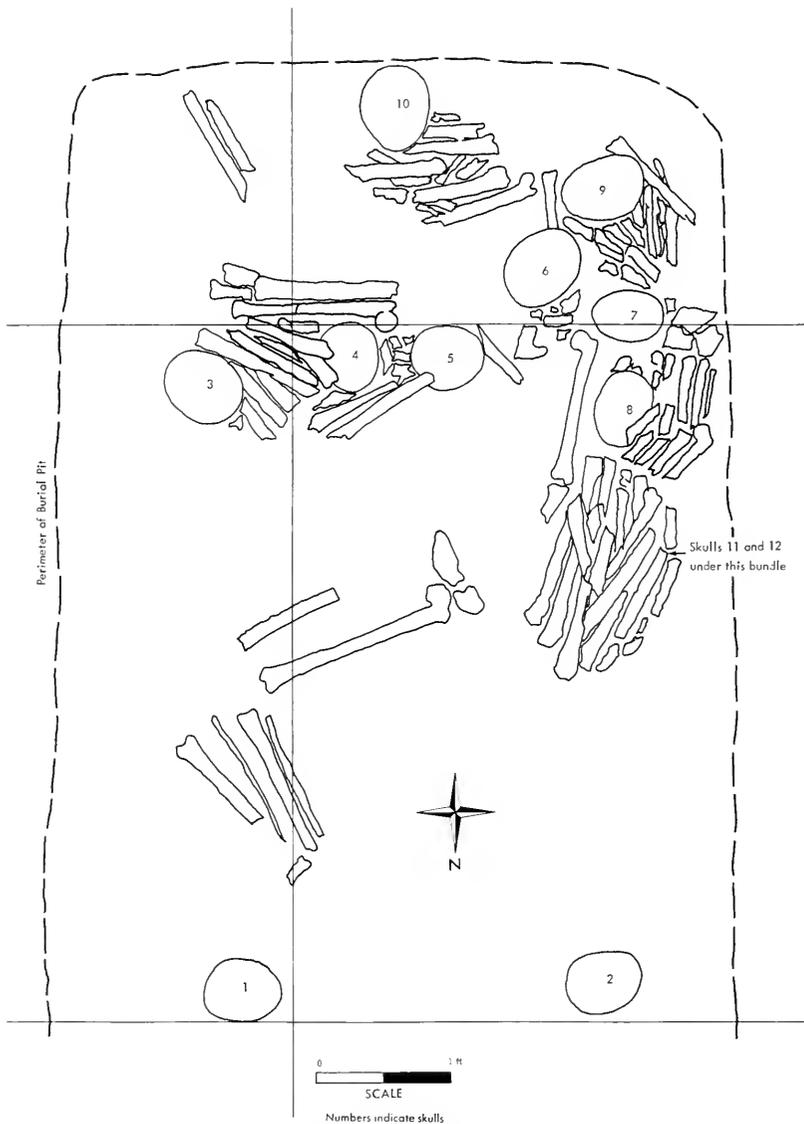


Figure 4. North half of burial pit, Pleasant Creek Mound 3.

at the bottom of the pit made by the Lenz boys, the solitary bundle burial and the seven ceremonial pieces found by us.

After which the mound was built to a height of 10-12 ft., with a probable diameter of around 35 feet. (Orr MS., 1935, vol. III, p. 24.)

Mound 3. Type: conical; Diameter: 30 ft.; Height: 18 in. In the mound floor was a rectangular pit 4 feet deep, 5 feet wide, and 14 feet long. The long axis was oriented north-south. An "altar" of stones was found 18 inches below the surface of the mound. Mussel shells were discovered at the same level. A small deposit of charcoal at a depth of 20 inches lay in the northeast corner of the 5-foot square section at the center of the mound. In the southeast corner of this section were more mussel shells. A lens-shaped deposit of shell was found 10 feet south and 5 feet east of the center of the mound. These shells were outside of the burial pit and 40 inches below the apex of the mound. This depth indicates that the lens-shaped deposit may not have been inclusive in the mound. It is likely that the shell deposit was part of a pre-mound habitation site, although Orr noted no evidence for a village site in connection with the mound group.

Ten bundle burials were found in the north part of the burial pit (fig. 4). Near the center of the pit was a fragmentary skeleton which may have been the remains of a semi-flexed individual. An isolated skull was located two feet east of the mound center. A mandible fragment was found 18 inches east of the mound center, 10 feet south of the mound center was another skull fragment. No grave goods were reported.

Mound Groups in Clayton County

Gudovissy Mound Group 2. In Sections 17 and 18, Township 91 North, Range 1 West, on bluff tops along the Mississippi River in southern Clayton County, are two groups of mounds which Orr designated Gudovissy

Mound Group 1, and Gudovissy Mound Group 2. Both were mapped by the Iowa Archaeological Survey, but excavations were made in Group 2 only. When the maps and excavations were made, this group contained eight conical mounds in good state of preservation. An additional four mounds originally had been part of the group. Orr reported them to be badly obscured through cultivation at the time of his work.

Mound 1 (fig. 5). Type: conical; Diameter: 40 ft.; Height: 36 in. This was the southeasternmost mound in the group. Orr's excavation revealed an oval burial pit 5 feet long and 4 feet wide. The long axis of the pit was oriented east-west. Outside the burial pit at its west end was a pile of large rocks which Orr described as a "subconical heap," 78 inches long (north-south), and 48 inches wide (Orr MS., 1935, vol. III, p. 86).

The pit contained burials of four adults and the skulls of four children. Although these were bundle burials, they had been placed in the pit while some tissue still connected the bones of the legs. Three adult skulls were arranged along the east edge of the pit. They were accompanied by a few long bone fragments. Along the north side of the pit were the four children's skulls. The fourth adult skull was located near the center of the pit. Part of another skull lay nearby. These were accompanied by long bone needles. The skulls were at the east end of the bundles, and the long bones were in positions roughly simulating articulation. At the foot of one of these bundles was a small whole pot. Near one of the children's skulls, at a point close to the center of the burial pit, were fragments of another vessel. Still another pot, in badly disintegrated condition, was found in the southeast corner of the pit.

Although three pots were recorded as having been found with the burials in this mound, information was available on only one (fig. 6). According to a description originally prepared by Griffin in 1935, this pot

*Woodland
Sites in
Northeastern
Iowa*

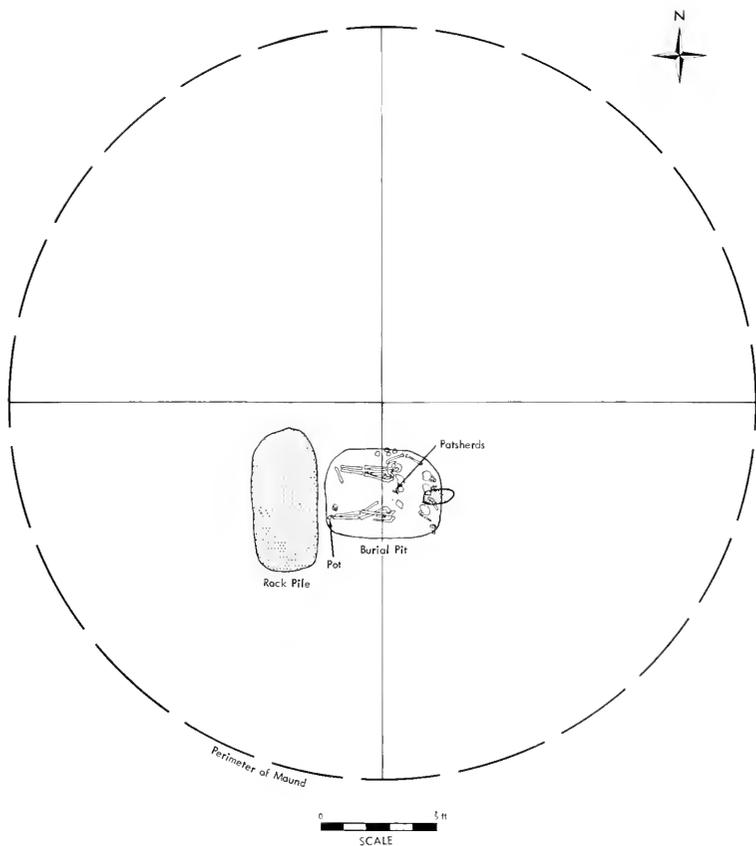


Figure 5. Plan of Gudovissy Mound 1.

was grit-tempered and of medium fine texture. The color was light brown to smoke gray. The paste was soft, with a hardness of 2.0 to 2.5. The surface of the pot had been roughly smoothed. The decoration on the rim consisted of a series of short, vertical lines incised just below the lip. Beneath these were two narrow, horizontal lines incised around the neck outlining a smooth neckband. Two lines were incised around the shoulder forming a curvilinear festoon

design. On the body, two sets of wider and deeper incised lines formed a larger curvilinear festoon design. Both the shoulder and body decoration encircled the pot. The body of the pot was slightly elongate and had a rounded base. The shoulder intersected the neck and the body at angles considerably sharper than are usual on local Woodland pottery vessels; in addition, there was a more pronounced neck constriction. The upper rim flared slightly. The vessel is quite

small—only 6.8 cm. high. It has a lip diameter of 5.5 cm., a neck diameter of 4.4 cm., and a body diameter of 5.7 cm. The lip is 2 mm. thick. The pot as described here resembles one found in the Schwert Mound 7 of Wisconsin, where it was associated with Hopewellian remains (McKern, 1931, p. 250).

Mound 4. Type: conical; Diameter: 30 ft.; Height: 36 in. This mound contained two bundle burials in a pit 6 inches deep and of unspecified form. No grave goods were with the burials and nothing was found in the mound fill (Orr MS., 1935, vol. III, p. 89).

Mound 8. Type: conical; Diameter: 30 ft.; Height: 30 in. The humus layer had been removed from the mound floor. No skeletons were found, although Orr seems to have thought burials were there originally and had deteriorated (*ibid.*, p. 90).

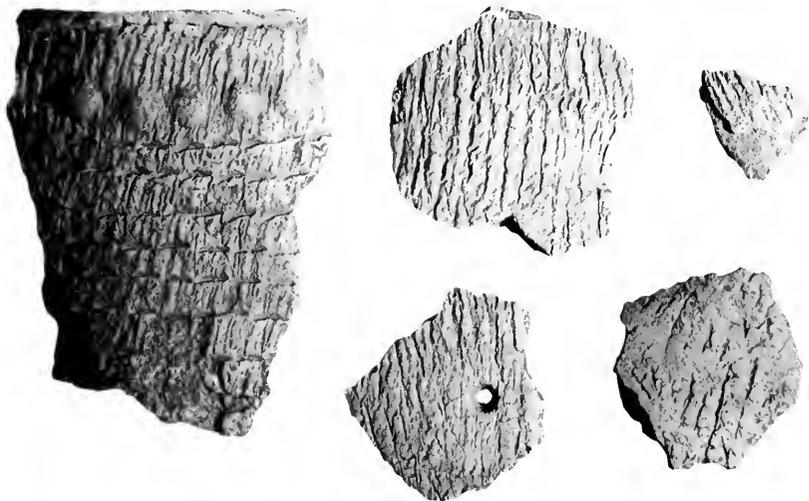
Harvey's Island Mound Group 2. Harvey's Island is actually a peninsula extending



Figure 6. Miniature pot from Gudovissy Mound 1 (UMMA Neg. No. 12701).

southward along the west bank of the Mississippi River about 1½ miles north of the business district of the village of Guttenberg. The peninsula lies between the Mississippi River and the mouth of Buck Creek in Sections 29 and 31, Township 93 North, Range 2 West, and Section 5, Township 92 North, Range 3 West. Most of the penin-

Figure 7. Pottery from the mound fill, Harvey's Island Mound 1 (UMMA Neg. No. 12701).



Woodland
Sites in
Northeastern
Iowa



Figure 8. Cord-wrapped-stick decorated pot, associated with burial, Harvey's Island Mound 1 (MPM Neg. No. 72265).

sula has been subjected to cultivation for a period of more than 50 years. Summer cottages have been built at the south end of the peninsula. Gravel quarrying operations are in progress north of these dwellings. Such activity seems also to have been in progress at the time of Orr's excavation and survey.

Three mound groups once existed on the peninsula. Group 1, about 300 yards north of the barn attached to the Janck residence in Section 5, has been obliterated. While it is known that a huge animal effigy of unique form was found, Orr left us no information on the number and types of mounds in the group. Group 2 consisted of five conical mounds at the time of the Orr survey, three of which were excavated. Two of these contained remains indicative of a Hopewellian origin. Group 3 lies at the extreme north end of the peninsula in Sections 29 and 31 and, at the time of the survey, included one linear and 10 conical mounds.

Mound 1. Type: conical; Diameter: 40 ft; Height: 10 in. A pit seems to have been dug at the time of the mound's construction,

but details of form and dimensions were not given. Cordmarked body sherds with fingernail impressions over the cord-roughened surface were found in the mound fill (fig. 7). Fragments of a bundle burial were noted. The bundle was associated with a pot decorated with a cord-wrapped-stick treatment (fig. 8). The pot was grit tempered, and the body had been roughened with a cord-wrapped paddle with deep cord impressions. It was smoothed over the cord-roughened surface from the upper part of the shoulder to the rim. Decoration was confined to three zones on the neck and rim on the exterior surface, and to the inner rim. The decoration consisted of cord-wrapped-stick impressions 2.2 cm. long and 7 mm. wide placed obliquely from the lip downward on the exterior and interior. On the exterior these impressions slanted toward the left. On the interior they slanted to the right. Below these impressions was a row of bosses 7 mm. wide and spaced from 13 to 23 mm. apart punched from the exterior, and encircling the pot horizontally. They were placed in a smoothed horizontal band 18 mm. wide. Below the bosses, three rows of horizontal cord-wrapped-stick impressions were placed in continuous lines around the neck just above a very slight shoulder expansion. This decoration fills a band 22 mm. wide. The pot had an elongate body with a rounded, conoidal base. Its diameter at the orifice nearly equalled that at the shoulder. Overall height was 10 inches (Orr MS., 1935, vol. III, pp. 142-143).

Mound 2. Type: conical; Diameter: 60 ft.; Height: 24 in. This mound had been obscured by cultivation. Orr's excavation revealed a rectangular, subfloor burial pit 8 feet long and 4 feet wide. The long axis was oriented north-south. At the north end of the pit were six bone bundles. Part of the long bones of these were stacked on end against the edge of the pit. Sixty-five tubular copper beads were scattered through the earthfill of the pit to the south of the burials.

These resembled copper beads reported from Hopewellian mounds in Wisconsin (McKern, 1931, p. 215). In the earth which filled the pit, 4 inches above the floor, were two unperforated canine teeth of a bear. Several long bone fragments were found at the south end of the pit. A fragment of a Lane Farm Cord-Imprinted pot is noted in the collection as having come from this mound (fig. 9).

The excavators discovered an intrusive historic Indian burial 13 feet south and 5 feet west of the mound center. The skeleton was extended with arms at the sides. Beneath the mandible were many purple glass beads which appeared to have been parts of a necklace. Over the left side of the thoracic cage was a thin, circular, brass disk covered with cloth resembling velvet. This disk was 4 inches in diameter. A little farther down on the same part of the skeleton was a similar disk, 3 inches in diameter. The disks and glass beads were of European manufacture (Orr MS., 1935, vol. III, pp. 129-130).

Mound 3. Type: Conical; Diameter: 60 ft.; Height: 20 in. Excavation revealed a rectangular pit, the long axis of which was oriented north-south, 6 feet long and 3 feet wide. A fragmentary extended skeleton with the head to the north lay on the floor. Two fragmentary bundle burials lay one on each side of the extended skeleton. Associated with the bundle burial on the east side of the extended skeleton were three perforated bear canine teeth. On the surface of the pre-mound terrace, outside the burial pit, were two additional bundle burials, one of which included two skulls with the long bones. No grave goods accompanied the bundle burials (Orr MS., 1935, vol. III, p. 140).

French Town Mound Group. The French Town Mound Group, 6½ miles north of Guttenberg in Clayton County, is located in the northwest quarter of Section 32, Township 93 North, Range 2 West. It occupies a high bluff and narrow hogback



Figure 9. Lane Farm Cord Imprinted pot fragment, Harvey's Island Mound 2 (UMMA Neg. No. 12711).

about 200 feet lower than the bluff's summit. The hogback extends southward from the steep slope of the bluff, along the south side of which runs a small, nameless creek. On the east the bluff and hogback are bordered by the sloughs of the Mississippi River. The mound group consisted of one linear and 10 conical mounds. In addition to the mound burials, an interesting inhumation was found at the base of the bluff slope. Small rocks were observed covering an area 4 feet wide and 5 feet long. These were sunk into the ground until only the tops showed flush with the surface. Under the rocks was a skeleton in extended position with arms at the sides. The skeleton was 30 inches in depth from the surface at the feet and 36 inches at the skull. Near the right hand, resting on the pelvis with inner surface downward, was a large mussel shell. Another was located at the right knee. A broken projectile point was found in the earth which had been excavated from around the legs.

Four of the conical mounds in this group were excavated but only two were described in detail. The others, Mounds 6 and 7, were described very briefly. Mound 6 contained a single skull, complete, but crushed. Mound 7 contained parts of a poorly preserved burial and a celt fragment. The burial in Mound 7 appears to have been extended.

Woodland Sites in Northeastern Iowa

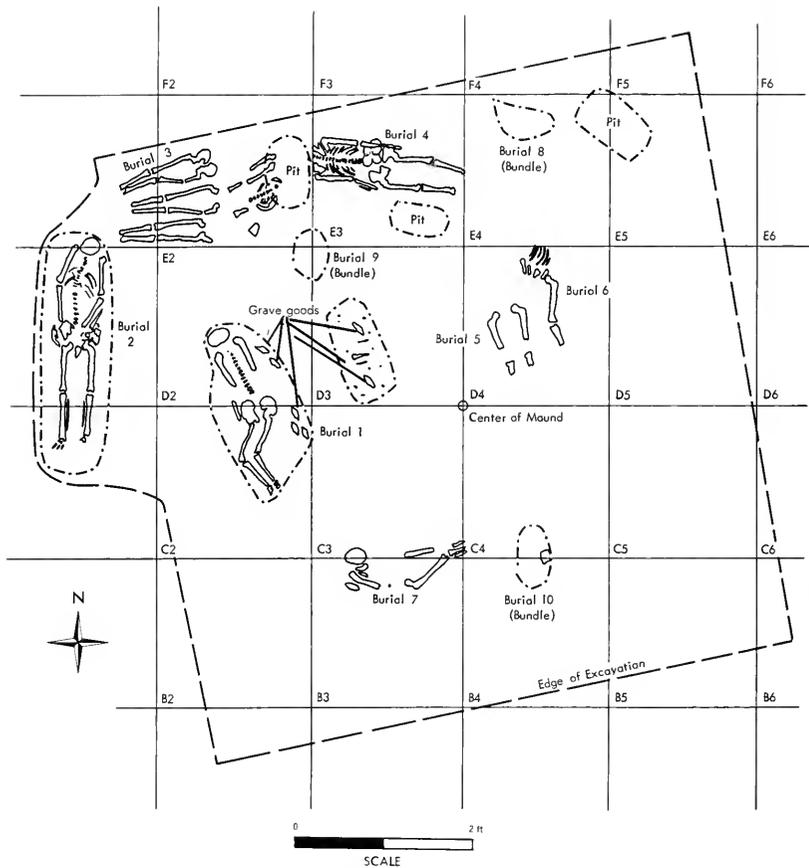


Figure 10. Plan of burials, French Town Mound 10.

Mound 10 (fig. 10). Type: conical; Diameter: 44 ft., Height: 48 in. The floor was prepared by removing topsoil. Five pits were dug in the floor, three of which were filled with yellow clay. Two to three mussel shells were found at the bottom of each. Burials were located in the two remaining pits and on the mound floor and fill. Rocks included in the mound fill were reported to have covered some of the skeletons. The individual burials are listed and described below using Orr's burial numbers.

Burial 1. Semiflexed. One of the two pit burials. The pit in which it lay was roughly rectangular. Red ocher was scattered through the earth fill. Orr noted that the burial was fairly well preserved although the skeleton was incomplete. In the earth filling the pit, and at a depth roughly corresponding to the level of the mound floor, Orr found five ovoid knives or ceremonial blades pointed at both ends. In outline these well flaked specimens resembled the "turkey-tail" blades of Illinois, but lacked

the characteristic notches (fig. 11c, d).

The five blades are markedly uniform in size, their dimensions in centimeters are:

<i>Specimen No.</i>	<i>Length</i>	<i>Width</i>	<i>Thickness</i>
1	14.6	4.2	0.7
2	14.0	4.6	0.8
3	13.8	4.4	1.0
4	13.9	4.3	1.0
5	14.0	4.8	0.8

Average dimensions for the five blades: length, 14.06; width, 4.4, and thickness, 0.86.

This raises the question as to the possibility of standard measurement concepts being held by the makers. It would be interesting to compare statistics on all blades of this type from all mounds of related cultural provenience, to see to what extent an area-wide standard may have prevailed. One would assume that the blade cache in French Town Mound 10 was the product of a single artisan.

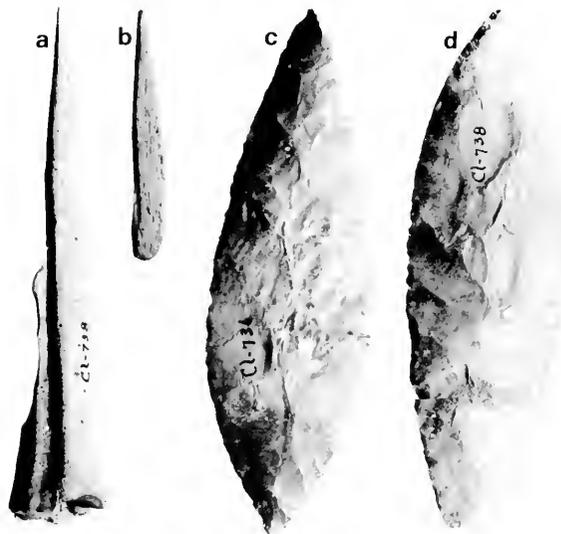
Burial 3. Parts of three intermingled, incomplete, extended skeletons. Beside the shaft of the right femur was a drill point measuring 5 inches in length (fig. 12a). With this same skeleton Orr reported a greenstone smoothing implement. Inspection of this object in the collections of the Iowa Archaeological Survey indicated it may be simply a smooth river pebble (fig. 12c).

Burial 4. Extended. The skull was crushed flat and lay over the left side of the pelvis. No grave goods accompanied the burial.

Burials 5 and 6. Incomplete skeletons lying in extended position on the mound floor. They were not accompanied by grave offerings.

Burial 7. An incomplete, extended skeleton lying on the mound floor. Beside the right shoulder was an ovoid knife pointed at both ends. This blade was almost identical in size and shape to those in the cache accompanying Burial 1.

Figure 11. Bone and stone objects, French Town Mound 10 (UMMA Neg. No. 12703, 12704).



Woodland
Sites in
Northeastern
Iowa

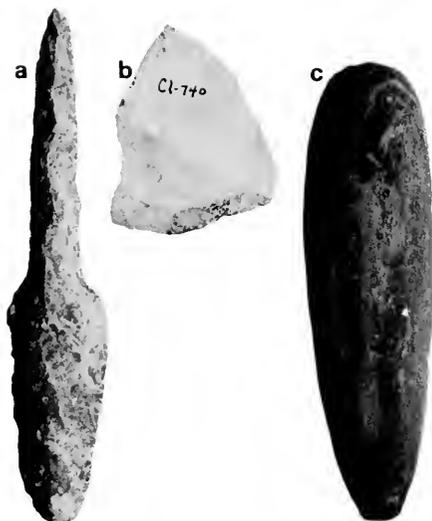


Figure 12. Stone objects, French Town Mound 10 (UMMA Neg. No. 12704).

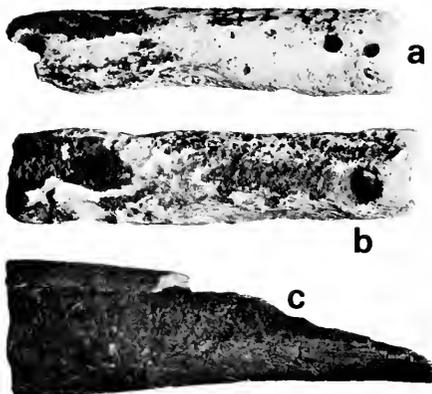


Figure 13. Conch columella beads and socketed antler point, French Town Mound 10 (UMMA Neg. No. 12702).

Woodland
Complexes

Burial 8. A bundle burial lying on the mound floor.

Burials 9 and 10. Bundle burials. These were found in the mound fill. Orr reported limestone rocks in this fill and thought that they had been placed over the burials.

All burials in Mound 10, with the exception of Burials 9 and 10, were covered with red ocher. One additional feature included a flat rock lying on the mound floor near Burial 1. Two blades pointed at either end and a large (13.5 cm. long) bone awl (fig. 11a) lay on this rock. The two blades measure 13.7 x 4.5 x 0.7, and 14.0 x 4.3 x 1.0 cm. respectively.

Although they were not mentioned in the notes, five other objects were found, and at least three of these appear to have been among the grave offerings. They may have been missed accidentally in the excavation and recovered from the back dirt. These included a broken, socketed antler projectile point stained with red ocher (fig. 13c); a small, polished bone splinter awl (fig. 11b); and two conch columella beads, each approximately 3 inches long, hollowed out at the ends and perforated at each end at right angles to their longitudinal axes (fig. 13a, b). These beads also bore red ocher stains. A large retouched flake was also recorded as having come from this mound (fig. 12b).

Mound 4. Type: conical; Diameter: 24 ft.; Height: 30 in. Orr noted one construction feature: a rock layer was placed over the burials at the pre-mound soil surface level. Under the rocks were three long bone shafts, fragments of two mandibles, and part of a scapula. A bundle of five long bones, a pair of femurs, a single femur, a left humerus, and two tibiae were located under another cluster of rocks. These lay in a compact bundle oriented north-south. Two of six mussel shells were cupped under small rocks. A skull fragment, two rocker-stamped potsherds, a cordmarked sherd, a plain sherd, and a perforated carnivore canine tooth were found in the mound fill

(Orr MS., 1935, vol. III, p. 106).

Mound 8. Type: conical; Diameter: 40 ft.; Height: 36 in. This mound contained several features quite unlike those in any of the other mounds investigated in this group. A basin-shaped clay lined pit, about 14 feet in diameter, had been dug into the original soil to a depth of 18 inches. The earth removed from this excavation formed an embankment about a foot high around the perimeter of the pit.

The pit evidently served as a crematory basin, for a large fire had been built within it. The fire appeared to have been smothered with earth resulting in a charcoal stratum, varying in thickness from 2 to 6 inches within the pit. Charred logs, 4 feet long and 4 to 8 inches in diameter, overlay the charcoal stratum in the southeast quarter of the mound. The logs lay east to west, parallel to the long axis of the pit. A rock deposit with one slab set on edge was located south of the logs. Burned human bone fragments, chiefly bits of skulls, were scattered over the floor of the basin under the charcoal. Five feet east of the pit center, imbedded in the clay directly under the charcoal, was a complete pot (fig. 14). This small vessel is grit tempered and had been malleated with a cord-wrapped paddle. The cord impressions were almost completely obliterated by subsequent smoothing of the surface. The color is yellowish gray to smoke-blackened.

Just below the lip there is a series of short, vertical, closely spaced lines impressed by an instrument with a smooth surface. Below this band, on the rim, there is a horizontal area of short irregular incised lines which may well have been made by the same tool as the plain rocker incising on the body. The shoulder area is plain and well smoothed. At the shoulder there are eight low lobes, each of which is decorated by a series of three horizontal rows of plain rocker incised lines. The swing of the rocker impression is 1.3 cm., and the rows overlap. The convex part of the swing is to the right. There is no



Figure 14. Levensen Punctated pot, French Town Mound 8 (Height, 12.5 cm.).

inner rim decoration.

There is a very slight flare to the rim; the lip is narrowed and rounded, and the base is conoidal. The lip thickness is 3.0 mm.; the rim, 5.0 mm., and the body 5.0 mm. The vessel is 12.5 cm. high. The lip diameter is 8.6 cm. The base of the rim is 8.1 cm., and the shoulder is 10.6 cm. in diameter.

Two feet south of the center, also imbedded in the clay layer, was a bundle burial, and beneath the charred logs, 3 feet southeast of the center, were two fragments of a child's skull. Burned human bone fragments were found beneath the charcoal layer. These lay on top of the clay layer and were scattered over the floor of the basin (Orr MS., 1935, vol. III, p. 117).

Evidently the mound was erected over the site of a crematorium. The charred logs apparently were the remains of some type of structure within which the burials were cremated. Addition of the mound fill seemed to have interrupted the burning before it was complete as evidenced by the charred logs, charcoal stratum, and incompletely burned bones.

Woodland
Sites in
Northeastern
Iowa

Mound Groups in Allamakee County

Mud Hen Joe Mound Group. This small group of conical mounds was located along the foot of the high bluffs that line the Mississippi River less than half a mile north of Waukon Junction, Iowa. They were located in Section 3, Township 96 North, Range 3 West. All were destroyed in the process of constructing a county road along the Mississippi River from Waukon Junction to Harpers Ferry. Before destruction, Orr mapped the group and excavated three mounds.

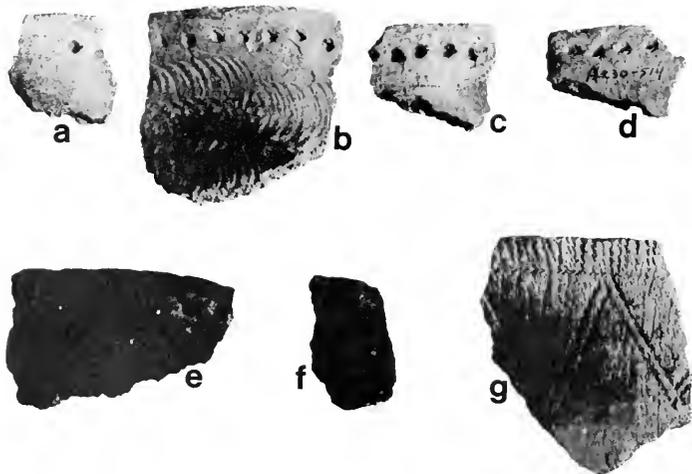
Mound 1. Type: conical; Diameter: 32 ft.; Height: 30 in. Rocks were piled indiscriminately on the mound floor. No burials were found. The mound fill contained the following objects: three chipped flint objects (probably scrapers), one planoconvex scraper, and four potsherds (Orr MS., 1936, vol. V, pp. 162-163).

Mound 2. Type: conical; Diameter: 30 ft.; Height: 18 in. A crude rock wall, approximately 8 feet long and 2 feet wide, was located in the southwest part of this mound. Two rows of rocks were arranged over the

burial area a little above the natural terrace surface level. In the sections immediately west of the mound center were fragments of what apparently had been an extended burial (or perhaps bones placed in positions simulating an extended burial). The bones were located 8 inches below the level of the natural terrace surface and the humus layer had been removed before the burial was placed. A crushed, grit-tempered pot lay between the knees of the skeleton. The skull was absent, but a skull fragment lay by the proximal end of the right femur. Other bone fragments, apparently parts of the left arm, lay across the shaft of the left femur. The frontal part of a skull, a tooth, and a long bone fragment were discovered to the east of this burial. The mound fill contained five grit-tempered potsherds and a broken projectile point. Two of the potsherds were of the Lane Farm Stamped type. The crushed pot could not be located in the collections (Orr MS., 1936, vol. V, pp. 163-164).

Mound 4. Type: conical; Diameter: 30 ft.; Height: 24 in. Three grit-tempered sherds of Madison Cord-Imprinted type were

Figure 15. Pottery from the "Valley" Mound, Harpers Ferry Mound Group (UMMA Neg. No. 12704).



found in the mound fill (Orr MS., 1936, vol. V, p. 164).

Harpers Ferry Mound Group. The Valley Mound. Type: conical; Diameter: 60 ft.; Height: 18 in. A shallow pit about 20 feet wide and 25 feet long had been dug before this mound was built. The long axis of the pit was oriented north-south. The pit was filled with alternating layers of charcoal and earth, as though fires had been smothered. The pit also contained rocks, some of which exhibited signs of burning. No burials were found, and there was no evidence of cremations. A cache of potsherds of the Levens Punctated type was encountered outside the southeast corner of the pit. The sherds appear to have come from an elongate jar, the lip of which was rounded and the rim flaring slightly. Just below the lip on the upper rim is a decoration consisting of a series of stick punctates encircling the rim in a horizontal line. Immediately below these are bands of plain rocker stamping which also seem to have encircled the pot horizontally (fig. 15a-f).

An additional sherd of medium fine texture with reddish brown color was recovered at a point 36 inches deep in the mound. It is covered with vertical cordmarks. The lip is rounded and the rim flares slightly. At the lip on the upper rim are short, vertical, single-cord impressions. These are separated from the decorative zone beneath by a single-cord impression which evidently had extended around the rim of the pot horizontally. Pendant to this line are triangles or chevrons, each of which is composed of two parallel single-cord impressed lines (fig. 15g). Orr evidently considered both pottery types to have been inclusive in the mound (Orr MS., 1934, vol. I, p. 71).

Harpers Ferry Mound Group 13. Mound 2. Type: conical; Diameter: 56 ft.; Height: 60 in. The mound contained an interesting construction feature, i.e., a large rock wall, 8 feet long east to west and 4 feet wide north

to south. The wall was 2 feet high. Orr thought it originally had been built to a height of at least 3 feet and had later toppled over, perhaps as the mound fill was added. On the floor of the mound about 6 inches north of the wall was a well preserved femur and fragments of two additional long bones. Judging from Orr's measurements, the floor of the mound appears to have been located approximately at the natural level of the surrounding soil surface. Other than the wall and the bones, no inclusions were found (Orr MS., 1934, vol. I, p. 72).

Martell Mounds. These were also a part of the great Harpers Ferry Mound Group. Orr did not specify the number or the types of mounds in this group. At least five must have existed, for Orr excavated Mounds 3 and 5. He found a pile of stone and a crude projectile point of the type called Waubesa Contracting-Stemmed in Mound 3 (Baerreis, 1953, p. 155). Mound 5 contained a pile of stones similar to that in Mound 3. There were no other inclusions (Orr MS., 1934, vol. I, p. 85).

Ryan Mounds. These were also a part of the Harpers Ferry Mound Group. They were located in the two northeast blocks of the town of Harpers Ferry and consisted of seven conical and one oval mound. Four of the conicals and the oval (referred to as the "Houlihan Mound" in Orr's notes) were excavated.

Ryan Mound 1. Type: conical; Diameter: 30 ft.; Height: 10 in. The test of this mound, limited to an area near the center, revealed a layer of red ocher 4 inches thick at the level of the original terrace surface. Four sherds of Lane Farm Stamped pottery were found. As the excavation was carried no further, no burials or other inclusions were discovered. Later work indicated that the excavation had not been carried deep enough (Orr MS., 1936, vol. V, p. 91).

Ryan Mound 2 (fig. 16). Type: conical; Diameter: 40 ft.; Height: 10 in. The mound

*Woodland
Sites in
Northeastern
Iowa*

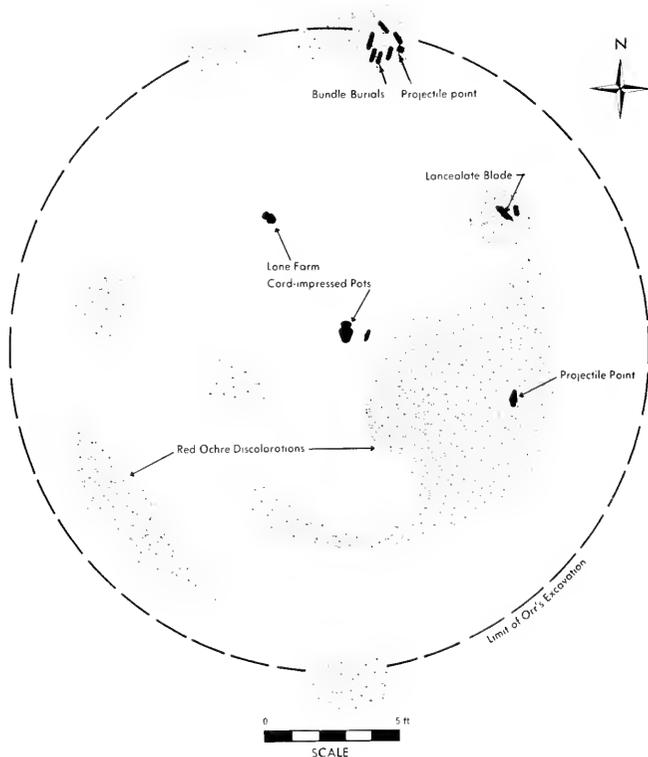


Figure 16. Plan of excavation, Ryan Mound 2.

was excavated to a depth of 60 inches below the apex, or to a depth 50 inches below the level of the terrace. The mound fill was composed of black, sandy loam which changed to very sandy, light yellow material below a depth of 30 inches. Orr's method of excavation and his description of the work leave doubt as to the way in which the mound was built. As usual, the excavation was carried out in a large, circular pit taking in the entire central area of the mound, and features discovered were mapped in 5-foot squares. However, the depth to which the excavation was carried, and the discovery of a prepared burial floor at the bottom of the excavation, indicated that there was either an error in

determining the original terrace surface or that the mound builders had made a deep excavation of their own, the shape of which was not ascertained in the Iowa Archaeological Survey's work.

Directly beneath the center of the mound, at a depth of 12 inches below the natural surface of the terrace (as determined by Orr), was a small grit-tempered pot of the type here called Lane Farm Cord-Imprinted. Six feet northwest of the mound center and 24 inches beneath the natural terrace surface was another pot. Mussel shells were scattered through the mound, apparently also at this level. Northeast of the mound's center, near the edge of the excavation and

40 inches below the terrace surface, a bundle burial was encountered imbedded in a layer of red ocher mixed with sand. The bundle was composed of decayed shafts of long bones. Under one bone comprising the bundle was a small, flat-based, straight-stemmed projectile point.

The fill changed abruptly to compact sand and gravel 50 to 60 inches below the apex of the mound over which red ocher was scattered irregularly over the surface. In this red ocher layer, 10 feet east of the mound's center, was a straight-stemmed, flat-based projectile point of quartzite. This point is $4\frac{1}{4}$ inches long. Also on this red ocher floor, 10 feet northeast of the mound's center, was a longbone fragment accompanied by a large lanceolate blade of very superior workmanship. The blade was discolored by red ocher, and resembled others found in Illinois Red Ocher mounds (Cole and Deuel, 1937, p. 55). Another deposit of red ocher, 66 inches below the mound's apex, was encountered 17 feet southwest of the center of the mound.

The pots in the upper part of the area excavated by the mound builders are small. One is $6\frac{1}{2}$ inches high and $5\frac{3}{4}$ inches in diameter. The decoration of the rim is carried out in single-cord impressions. The upper part of the body is covered with horizontal zones of dentate rocker stamping, the margins of which overlap. Irregular rockered lines appear on the base. The other pot is smaller. It is $3\frac{1}{8}$ inches high and $2\frac{7}{8}$ inches in diameter at the shoulder. The two pots conform to the Lane Farm Cord-Imprinted type in all other characteristics (Orr MS., 1936, vol. V, pp. 91-96). Fragments of another Lane Farm Cord-Imprinted pot said to have come from this mound are shown in figure 17.

Ryan Mound 3 (fig. 18). Type: conical; Diameter: 60 ft.; Height: 24 in. Here again, the builders had preceded mound construction with an excavation. The form and dimensions of the excavation are unknown. A



Figure 17. Lane Farm Cord-Imprinted pot fragment, Ryan Mound 2.

clamshell cache was found approximately 12 feet due east of the mound center 32 inches below the apex (20 inches below the natural surface as measured by the excavators). This cache was nearly 14 feet in length, 2 feet in width, and 5 inches in thickness. The shells were imbedded in a layer of sticky black soil. At the level of the surrounding terrace surface, 7 feet southeast of the mound center, were two human skulls and a longbone fragment. Three feet northeast of these were two longbone bundles. A skull fragment lay between the two bundles. The bundle burials appear to have been found at the level of the terrace. No other inclusions were noted (Orr MS., 1936, vol. V, p. 102).

Ryan Mound 4 (fig. 19). Type: conical; dimensions unspecified. The same techniques seem to have been employed in the construction of this mound as those in the previously described mounds of this group. The builders appear to have prepared an area by making a deep excavation. A bundle burial composed of four long bones was found 50 inches below the apex, and 11 feet southwest of the center. These bones were imbedded in black, sticky soil similar to that described in Mound 3. Near these long bones was a very large copper awl. The awl, semicircular in cross-section, was thickest at its midpoint, and tapered toward either end to a rounded point. Similar deposits of the black soil covering the burial and copper

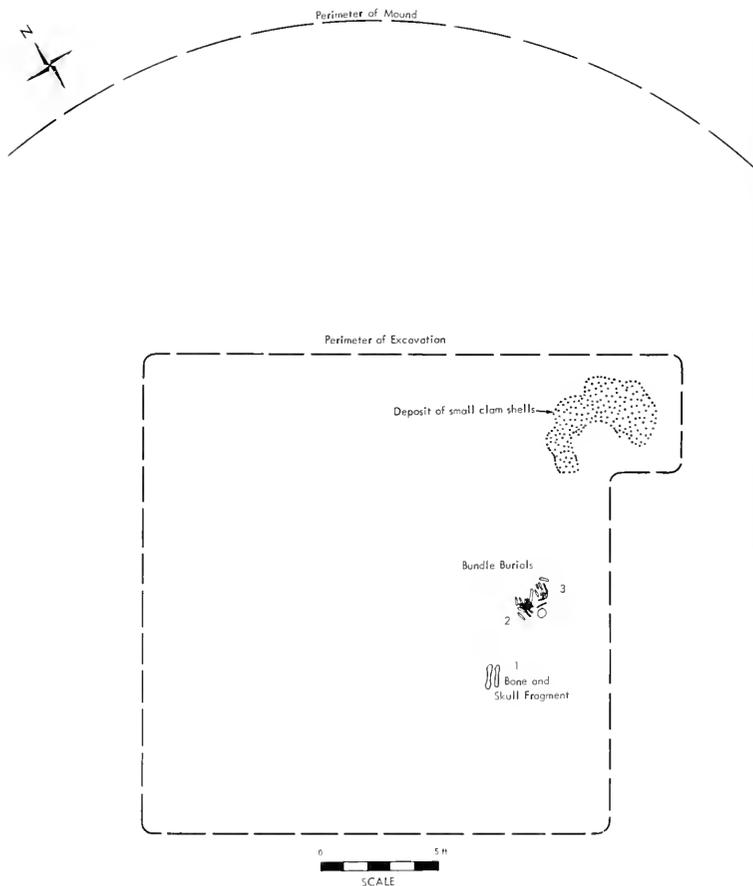


Figure 18. Plan of excavation, Ryan Mound 3.

awl were found scattered over an area roughly 4 feet in diameter at the same level. Some of these black patches lay within a layer of yellow sand stained by the addition of red ocher. Isolated longbone fragments were found in two places on the east and northeast sides of the mound. In two unspecified locations, single clamshells were

found (Orr MS., 1936, vol. V, p. 102). A complete pot, of the Lane Farm Cord-Imprinted type, was noted in the collections as having come from this mound (fig. 20).

This small vessel, like those found in Ryan Mound 2, and in six of the Lane Farm mounds, is noteworthy because it has short vertical single-cord impressions on the outer

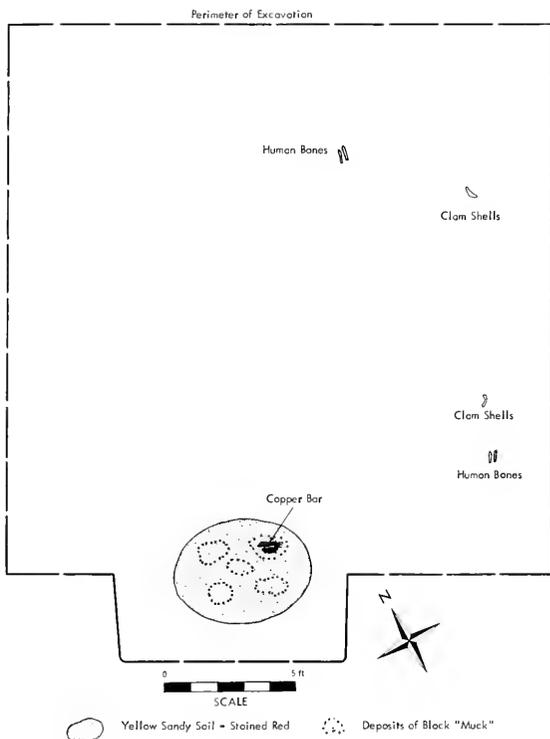


Figure 19. Plan of excavation, Ryan Mound 4.

rim edge and five to six unevenly applied horizontal, wide single-cord impressions on the rim. Below this decorated band there is a row of short, deeply-impressed single-cord impressions pendant to the band of horizontals. The body of the vessel, however, has a number of rows of rocker-stamped impressions. For various reasons it has not been possible to describe this vessel in more detail, but it represents another example of rim treatment which became dominant and of more widely varied decorative pattern on Late Woodland vessels in the Upper Mississippi Valley coupled with a

body decoration found on late Middle Woodland vessels.

Houlihan Mound (fig. 21). Type: oval; Length: 70 ft.; Width: 40 ft.; Height: 23 in. Construction of this mound seems to have been much like that of the Ryan conical mounds. The builders had evidently made an excavation of undetermined shape which was filled with stratified deposits including two burial layers. The mound fill was black, sandy loam. A layer of mixed sand and red ocher was found 36 to 46 inches below the surface of the mound at its apex. Beneath

Woodland
Sites in
Northeastern
Iowa



Figure 20. Lane Farm Cord-Impressed pot, Ryan Mound 4.

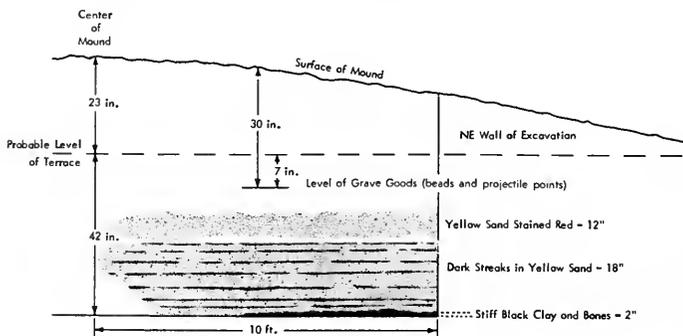
this was a stratum of yellow sand mottled with dark streaks resembling the lenses of earth often interpreted to represent individual basket loads of fill (McKern, 1931, p. 209, pl. XXXVIII, 1). Below this was a stratum of stiff, black clay which lay on the compact, undisturbed gravel of the terrace.

A small, contracting-stemmed point (2.2 inches long, 1 inch wide at the shoulder), lay 7 inches below the level of the terrace, 9

feet northwest from the center of the mound. At the same level, 17 feet northwest of the mound center, was a larger straight-stemmed point (3.5 inches long, 1.6 inches wide at the shoulder). A deposit of 125 "globular" copper beads was discovered 6 feet northeast of the mound's center.* Remnants of vegetable fiber cord were preserved in these beads which were found at the same level as the projectile points. The inclusions were located above the upper level of burials, found in the mixed yellow sand and red ocher 36 to 46 inches below the mound's apex. This layer of burials consisted of bone fragments, apparently the remains of bundle burials. The lower burial stratum was on the terrace gravel beneath the layer of stiff, black clay at the bottom of the aboriginal excavation. No grave goods were associated with the skeletons in either of these layers (Orr MS., 1936, vol. V, p. 101).

*Although Orr spoke of these as being globular, there is a good possibility that they were really short cylinders. I was unable to locate them for study, but in inspecting other beads Orr described as globular, I noted that all were cylindrical in form. If Orr made an observational error it was probably due to the heavy coat of copper carbonate found on the beads. W.D.L.

Figure 21. Strata of the burial area, Houlihan Mound.



Woodland
Complexes

Hill Mound Group. The Hill Mound Group consisted of four conical mounds on top of a bluff overlooking the Mississippi River 3 miles northeast of Harpers Ferry, in the southeast quarter of the southeast quarter of Section 7, Township 97 North, Range 2 West. Three mounds of the group were excavated by Orr. A fourth was partially excavated, but contained nothing.

Mound 1. Type: conical; Diameter: 25 ft.; Height: 44 in. The burial floor was located at the surrounding surface level of the bluff. The mound fill was composed of hard, light yellow clay. At either end of the burial area were rock walls which Orr described as pyramidal in shape. The bases of these walls were 12 to 18 inches above the mound floor. The long axis of the burial area was oriented northeast-southwest. The burials were oriented southeast-northwest.

The burials consisted of six fairly complete extended skeletons on the mound floor between the rock walls. Parts of four additional skeletons were found. All of the latter were skulls, or parts thereof. The burial Orr designated Number 7 was part of a child's skull found over the right elbow of one of the extended skeletons. An adult skull was found between the knees of this extended skeleton and the one adjacent to it. Another skull was located between the femurs of a third extended skeleton, and a fourth skull was found over the vertebral column of a fourth extended skeleton. A grit-tempered pot was located above the pelvis and over the lumbar region of this last skeleton, the only item of grave goods found. The pot could not be located in the collections (Orr MS., 1936, vol. V, pp. 138-139).

Mound 3. Type: conical; dimensions unspecified. The humus layer seems to have been removed from the bluff top before construction. The burial floor was 8 inches below the surrounding bluff level. On this floor were three well preserved skulls arranged in a line. A crushed skull was found 18 inches north of the mound center. A well

preserved femur and a tibia were located 24 inches east of the center. In three different spots to the northeast of these remains were decayed longbone fragments. The mound fill over this burial area was similar in character to that of Mound 1. It consisted of a stratum of hard, light yellow clay containing small flecks of white material. The burial area was covered with rocks. The only object included with the skeletons was a mussel shell (Orr MS., 1936, vol. V, p. 137).

Mound 4. Type: conical; Diameter: 25 ft.; Height: 30 in. A rock wall, the base of which was 42 inches beneath the surface of the mound, was found at the southeast side of the burial floor. This wall, 10 feet long, was described as pyramidal in form.

The burials consisted of single, badly decayed bone fragments at three different positions on the burial floor at a depth corresponding roughly to that of the level of the bluff top. No grave goods were noted (Orr MS., 1936, vol. V, p. 139).

Mound 2. Type: conical; dimensions unspecified. Orr made only a partial excavation. He found nothing.

Brazell's Island Mound Group. This group lies on an extension of the Harpers Ferry terrace which is separated from the main body of the terrace by a small creek emptying into the Mississippi River. The mounds are separated from the bluffs lining the Mississippi River bank by a lagoon. The island is located in the northeast quarter of the southwest quarter of Section 26, Township 97 North, Range 3 West. The mound group consisted of a conical mound, two linears, and an effigy mound of the type considered to represent a bear. Orr excavated the bear effigy and one of the linear mounds, the latter of which contained nothing but occasional lumps of charcoal.

Bear Effigy (fig. 22). Type: bear effigy; Length: 86.9 ft.; Width at shoulder: 41 ft.;

Woodland Sites in Northeastern Iowa

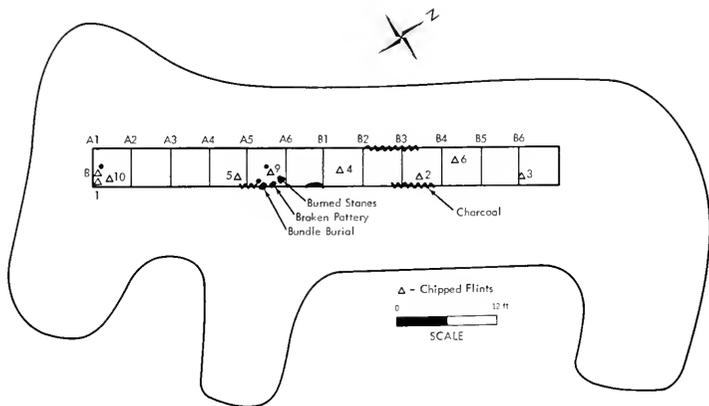
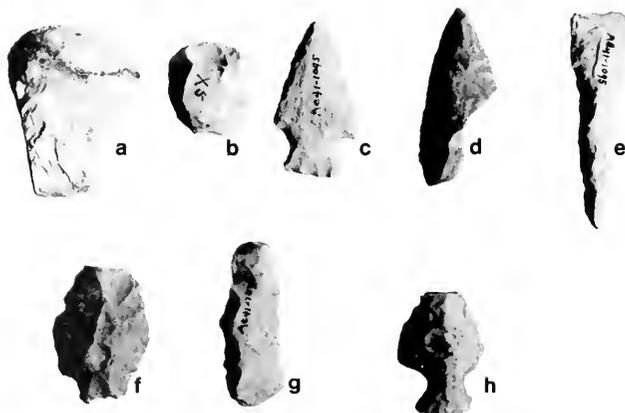


Figure 22. Brazell's Island Bear Effigy.

Height at head: 28 in.; Height at rump: 33 in. This was the only effigy mound excavated by the Iowa Archaeological Survey. It evidently was built directly on the topsoil of the terrace. A lens-shaped fireplace, consisting of a heavy concentration of ashes and dipping down toward the center, was

found in the mound fill. This fireplace appeared to have been made in a shallow pit. Fragments of a bundle burial were found in a shallow, oval pit in the "heart" region of the bear. The bundle burial was accompanied by fragments of a Madison Cord-Imprinted pot, crushed but restorable, and

Figure 23. Chipped stone objects from the mound fill, Brazell's Island Bear Effigy (UMMA Neg. No. 12706).



a small pile of burned stones. The mound fill contained a large trapezoidal scraper, a circular planoconvex scraper, an expanding-stemmed projectile point, a broken proemitted projectile point, an expanding based drill point, a contracting-stemmed projectile point, an irregular oblong chipped stone object, and a corner-notched projectile point (fig. 23a-h). The Madison Cord-Impressed pot is of the decorative variation illustrated in fig. 90k. No other materials were found in the excavation (Orr MS., 1936, vol. V, pp. 111-112).

Luth Mound Group. This was a group of five conical mounds in the southwest quarter of Section 7, Township 97 North, Range 2 West, 2½ miles north of Harpers Ferry. Three mounds were excavated.

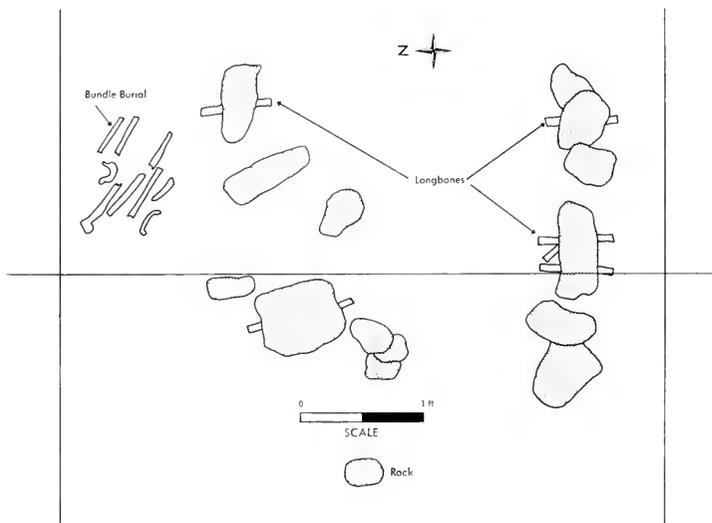
Mound 1 (fig. 24). Type: conical; Diameter: unspecified; Height: 48 in. Few details were given concerning its construction. The fill seems to have been homogeneous.

Limestone rocks were found over the burials. A single large compact bundle burial and several isolated long bones were discovered. A poorly preserved bear canine tooth accompanied the bundle. It was in such an advanced stage of decay that it was impossible to tell whether or not the tooth had been perforated (Orr MS., 1936, vol. V, p. 124).

Mound 2. Type: conical; Diameter: 30 ft.; Height: 24 in. As in Mound 1, parallel rows of rocks were found. These were oriented in an east-west direction. The rocks lay 30 inches below the apex of the mound. Parts of an extended burial lay at right angles to the rock alignments. Only bone fragments remained of this poorly preserved skeleton. A large corner-notched blade or spear point, 9.2 inches in length, and made from mottled pink and white quartzite was found at the left shoulder.

Under the northernmost row of rocks were several jumbled bundle burials. Parts

Figure 24. Plan of burials, Luth Mound 1.



Woodland
Sites in
Northeastern
Iowa

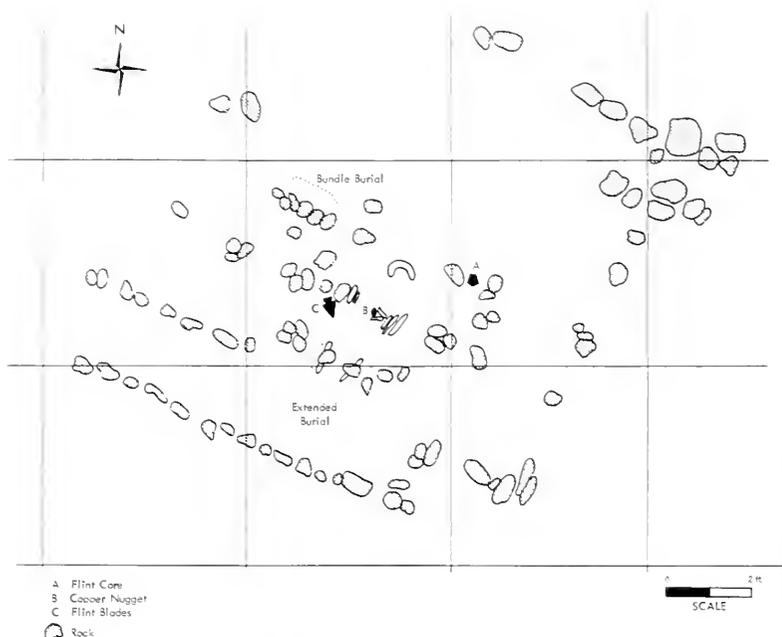


Figure 25. Plan of burials, Luth Mound 3.

of four skulls were represented, indicating at least four individuals. West of the skull accompanying the extended burial were parts of two additional skulls and two long bones. Longbone fragments were also scattered between these and the bundle burials. One blade found with the extended skeleton is of the type called Snyder's Notched, a Hopewellian projectile point type (Scully, 1951, p. 12).

Mound 3 (fig. 25). Type: conical; Diameter: 30 ft.; Height: 24 in. Four parallel rows of rocks were found. These appeared to delimit a rectangular area oriented roughly southeast-northwest. Toward the center of the enclosure was a fragmentary extended burial with the skull to the northeast and the bones of the torso extending southwest at an approximate right angle to

the axis of the rock arrangement. Near the distal end of the right humerus was a large, corner-notched, brown chalcedony blade. Near the left femur was a large, ovoid, unnotched blade made from the same chalcedony. A nugget of copper was found near the center of the thoracic cage, and a flint core was situated 2 feet east of the skull. A bundle burial with no accompanying grave goods lay beneath the row of rocks 3 feet northwest from the skull of the extended skeleton (Orr MS., 1936, vol. V, pp. 125-126).

The large corner-notched point found in this mound is of the Snyder's Notched type. The ovoid blade resembles the Hopewellian "blanks" of Pleasant Creek Mound 2. Both blades found in Luth Mound 3 were made of the type of brown chalcedony believed to

be Knife River flint, the source of which is Dunn County, North Dakota (Bennett, 1945, p. 94).

Paint Rock Mound Group. The Paint Rock Mound Group is located on top of a Mississippi River bluff in the southwest quarter of the northeast quarter of Section 3, Township 96 North, Range 3 West, about three-quarters of a mile north of the village of Waukon Junction. Only one mound in the group was excavated. This was a partial excavation prompted by a report of looting on the part of local boys. The mound studied was designated Mound 1 in the excavation notes.

Mound 1. Type: conical; Diameter: 44 ft.; Height: 36 in. The excavation cleared out the pit previously dug by the boys who looted the mound. The mound had been constructed over a floor from which the topsoil had been removed. The mound fill over the burial area was composed of light gray, hard earth. Immediately over the skeleton was a layer of reddish clay. The remainder of the mound fill above the light-gray earth was yellow loess identical to the surrounding bluff top soil.

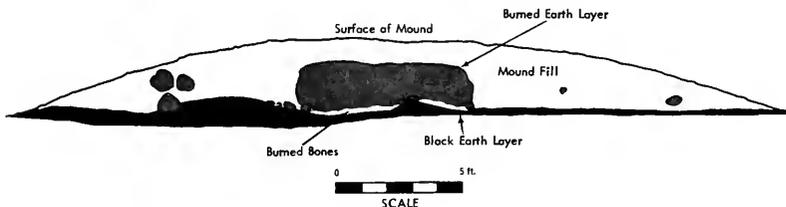
In their digging, the boys had partially disturbed an extended skeleton which seems to have been oriented northwest-southeast. The bones of the skeleton discovered in Orr's excavation were badly jumbled, but it also appeared to have been extended. The skull lay on top of the bones

of the upper torso. A badly broken grit-tempered pot was found with the skeleton disturbed by the looters. Parts of the same pot were found by Orr in the loose dirt left by the boys. A part of the pot taken from the site by the boys was later given to Orr, who was able to make a partial restoration of the vessel. The pot is of the type called Levsen Stamped, and the decoration had been produced with a cord-wrapped implement. The decorative treatment of the pot is illustrated in figure 81g.

Waukon Junction Mound Group. This mound group is located atop a Mississippi River bluff just north of the mouth of Paint Creek in the east half of the southwest quarter of Section 3, Township 96 North, Range 3 West. The village of Waukon Junction is located at the foot of the bluff on its south side near the mouth of Paint Creek. The group consists of five conical and nine linear mounds, one bear effigy, and one bird effigy. The only mound excavated in this group was Mound 4, a conical also referred to by Orr as "The Burned Earth Mound."

Mound 4 (fig. 26). Type: conical; dimensions unspecified. The mound, according to Orr's description, was built on a layer of disintegrated rock which composed the subsoil of the bluff top. On top of the subsoil was a black earth layer. In the central area, on top of the black earth, were fragments of burned human bones scattered over an area about 10 feet in diameter. Over the bones

Figure 26. Cross section of Waukon Junction Mound 4 ("The Burned Earth Mound").



Woodland
Sites in
Northeastern
Iowa

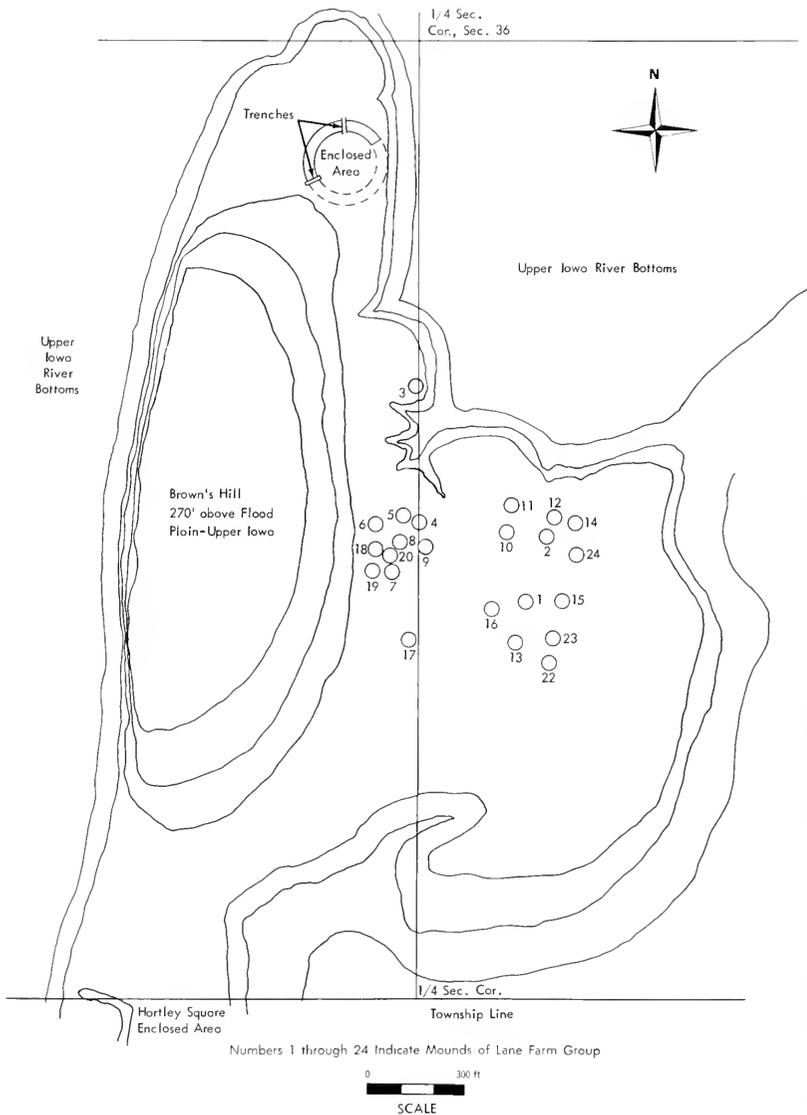


Figure 27. The Lane Farm Mound Group.

was an irregular mass of earth which had been burned until it had assumed the character of soft red brick. A few rocks were scattered between the bone layer and the burned earth deposit.

Orr believed the cremation had been accomplished elsewhere and later brought to the mound site for burial. He also suggested that the clay had been puddled before it was fired. Very little charcoal was found in spite of the repeated evidence of cremation and burning. No grave goods were found.

The excavation appears to have been too limited to produce full details. The excavated area consisted of a cross-section trench, 5 feet wide. Detailed profile drawings of the east and west walls of the trench, and a drawing of the north wall of the trench at the center of the mound were supplied with the notes. The profile of the west face of the north-south trench indicated that the builders had made a shallow excavation and piled earth, possibly from the excavation, around its edges. The bone fragments seem to have been found in this shallow depression, and the bulk of the burned earth was piled over the top. That Orr's excavation merely passed through the edge of the pit is evidenced by his profile drawing of the east face of the trench. This drawing showed a uniform, thick layer of black earth across the area near the center of the mound.

Further evidence was provided by the east-west profile taken in the center of the mound depicting a decided "dip" from east to west in the stratum of black material. This interpretation of profiles was bolstered by evidence from Wisconsin where such excavations surrounded by an extra embankment were found (McKern, 1931, pp. 252-253).

Lane Farm Mound Group (fig. 27). The Lane Farm mounds were located on the south half of Section 36, Township 100 North, Range 5 West. At the time the site

was studied by the Iowa Archaeological Survey, it consisted of 17 conical mounds and an area enclosed by a circular embankment of earth. South of the Lane Farm group, on the Hartley farm (northwest quarter of the southwest quarter of Section 36, Township 100 North, Range 5 West), was a rectangular earth enclosure accompanied by two conical mounds in fair state of preservation and the remnants of two other mounds. In 1882, when Colonel Norris visited the Lane Farm for the Bureau of American Ethnology, he reported 90 mounds (84 conicals and 6 linears) in addition to the earth enclosure. Norris excavated part of the circular enclosure, but his conclusions as to its cultural origins are not clear (Thomas, 1894, pp. 99-101).

This multi-component site had once been the location of an Oneota village in late prehistoric and early historic times. Orr excavated 10 of the 17 mounds still existing and trenched the Lane Farm circular enclosure. He concluded that the enclosure had been constructed during the course of the Oneota occupation. It is difficult to assess the evidence in favor of this conclusion. Oneota material was found in and over the earth fill of the embankment. Oneota cache pits cut into the embankment repeatedly. No objects indicating the possibility of Woodland origin were discovered, and Orr's account was positively and convincingly presented (Orr MS., 1936, vol. V, pp. 14-33). On the other hand, it was suspected that at this early stage in the experience of the Iowa Archaeological Survey's operators, they may not have acquired sufficient familiarity with their materials to distinguish intrusive features from those inclusive in sites, for this work was carried out in the first summer of the excavations. Elsewhere in the eastern United States, earth enclosures have been associated with Woodland occupations (Webb and Snow, 1945, pp. 16-17). In Iowa, distributional evidence supports Orr's conclusions, for enclosed areas have

*Woodland
Sites in
Northeastern
Iowa*



Figure 28. Lane Farm Cord-Imprinted pot, Lane Farm Mound 3 (UMMA Neg. No. 2541).

been found repeatedly associated with Oneota remains.* The information on the Lane Farm Mound Group from the Iowa Archaeological Survey excavations is presented below.

Mound 1. Type: conical; Diameter: 40 ft.; Height: 18 in. Two layers of burials were found to the south of the mound's center. The upper layer was located at approximately the natural level of the terrace and consisted of three bundle burials in advanced stages of decomposition. A projectile point was found in association with these bone bundles. The type was unspecified in the notes, and the point could not be found in the collections. A small drawing made by Orr on his ground plan of Mound 1 indicated that it may have been a corner-notched point. However, the drawing may have been merely symbolic rather than a true representation. The lower layer of burials consisted of five bone bundles and six crushed skulls on a level about a foot lower than that of the upper burial layer. No

grave goods accompanied them.

The mound fill contained two grit-tempered, cordmarked potsherds, a Lane Farm Cord-Imprinted sherd, a small bone fragment, a small triangular projectile point, an Oneota potsherd, and two small grit-tempered sherds (Orr MS., 1934, vol. I, p. 28).

Mound 2. Type: conical; Diameter: 33 ft.; Height: 16 in. This mound was a confused hodgepodge. Although it appears to have been of Woodland origin, later Oneota peoples placed their own burials within it, obscuring its original condition almost completely. On constructing the mound, the floor seems to have been cleared of humus. This floor was uneven, but no evidence of burial pits or burial layers was noted. A circular heap of limestone fragments was found at the southwest corner of the excavation, 18 inches below the surface.

Seven burials were encountered. Of these, five were extended and two were described as consisting of skull fragments only. Oneota grave goods were associated with one of the extended skeletons, consisting of a pot at the right knee, and a lump of charcoal at the left humerus. No grave goods were found in association with the skull fragments. In the mound fill were 44 Oneota potsherds, four grit-tempered cord-marked sherds, one plain grit-tempered sherd, and one Lane Farm Cord-Imprinted rimsherd in addition to numerous flint chips and bone fragments.

In spite of the meager evidence on which inferences concerning the origin of the burials could be based, it was concluded that the four burials without grave goods may have been Woodland. The circular pile of lime-

*Four earth enclosures in northern Allamakee County are associated with Oneota remains. The Blood Run enclosure in northwestern Iowa also contains remains stemming from an Oneota occupation judging from statements made in Keyes' notes on file with the State Historical Society of Iowa.

stone fragments was a recurrent feature in other mounds excavated, and served to identify the mound as Woodland. An alternate hypothesis would be to regard all of the extended skeletons as Oneota in origin and to consider the skull fragments as the disturbed remains of the burials inclusive in the mound in its original state (Orr MS., 1934, vol. I, pp. 31-32).

Mound 3. Type: conical; Diameter: 24 ft.; Height: 24 in. The topsoil had been removed in preparing a burial area. Toward the north edge of the mound, at a point 45 inches below its apex, was a concentration of charcoal. In the same area, 60 inches below the mound's apex, were fragments of animal bones. Another charcoal concentration was found in the east edge of the mound at a depth of 36 inches. A bundle burial, located southwest of the mound's center at a depth of 28 inches, was accompanied by a Lane Farm Cord-Imprinted pot (fig. 28), the bowl of a pottery elbow pipe, and a Snyder's Notched projectile point (fig. 29a, b). Also located southwest of the mound's center, at a depth of 36 inches, was a mussel shell (Orr MS., 1934, vol. I, p. 36).

This small vessel is grit tempered with a surface hardness of 2.0 to 2.5. The color is dark brown. The surface was smoothed and rubbed somewhat after the decoration was applied so that the techniques employed are not too clear in the photograph (fig. 28).

Beginning at the outer lip edge there is a series of short, closely spaced vertical cord impressions extending 6 to 7 mm. down the rim. Below this band are 4 parallel horizontal cord impressions and this band averages about 1.0 cm. wide. Below the horizontal band is the second series of short closely spaced vertical cord impressions in a band 1.2 cm. wide.

Mound 11 (fig. 30). Type: conical; dimensions unspecified. The builders seem to have made an excavation of undetermined extent and form in the mound floor. There were three layers of burials. The top layer



Figure 29. Pottery pipe bowl and Snyder's Notched point, Lane Farm Mound 3 (UMMA Neg. No. 2542).

was located slightly below the natural surface of the terrace surrounding the mound. It consisted of five bundles and one extended burial. The extended burial was oriented north-south, beneath which were the bones of a bundle burial accompanied by two crudely chipped flint objects. This bundle constituted the second burial layer. Three bundles of bones comprised the lowest layer, two of which were located 12 inches below the surface of the terrace. The remaining bundle was 25 inches below the terrace surface. A large rectangular copper celt accompanied one of the burials in the upper layer (fig. 31a). A flint hammerstone and flint debris were found in the mound fill, and a stone altar on the mound floor (Orr MS., 1936, vol. V, p. 8).

Mound 12. Type: conical; Diameter: 33 ft.; Height: 14 in. Evidently this mound had been disturbed some time after its construction and the burial complex was confusing. The disturbance may have resulted from Oneota excavations as burials of Oneota origin were discovered within the mound. Burials 1, 2, and 6 were extended, and each was accompanied by a bison scapula. All three lay slightly below the level of the surrounding terrace surface. The bison scapula accompanying Burial 1 was located over the left femur. In the case of Burial 2, the scapula lay beside the right leg. The scapula with Burial 6 had been placed over the right femur near the pelvis. Burials 3, 4, 5, and 7

Woodland
Sites in
Northeastern
Iowa

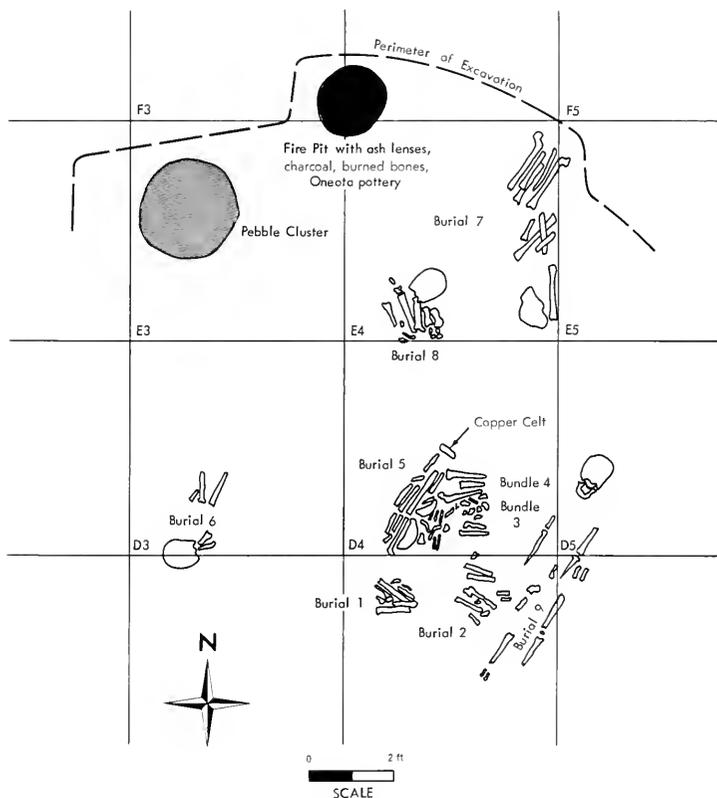


Figure 30. Plan of burials, Lane Farm Mound 11.

also appear to have been extended, although they were fragmentary. Beneath the few bones representing Burial 4 were eight grit-tempered sherds. Beneath the bones of Burial 7 were the sherds of a grit-tempered pot scattered over an area about 3 feet in diameter (fig. 32). At the south end of the two femurs of this skeleton were two Oneota potsherds, each of which had come from a different pot.

All of these burials were in the southeast quarter of the mound. In this same quarter

was a pile of limestone fragments with a bison scapula beneath it. A mussel shell was found in the south edge of the pile of rocks, and on the north side was an Oneota pot. In the southwest quarter of the mound were three bundle burials which were believed to have been Woodland and part of the mound's original content. They were found at a depth of 33 to 34 inches below the mound's apex; no grave goods accompanied them. Orr believed that Burial 7, in the southeast quarter of the mound, also might

have been a Woodland burial because it lay at the same level as the bundle burials, and on top of the grit-tempered potsherds. Burial 7 was very fragmentary, consisting of portions of two skulls, a badly decayed humerus, a radius, and the shafts of two femurs placed in rough approximation to their proper anatomical positions. The skeletons which could be assigned definitely to the Oneota seem to have been more complete and in better state of preservation (Orr MS., 1934, vol. I, pp. 42-49).

The grit-tempered sherds of Woodland origin all were of the Lane Farm Cord-

Figure 31. Copper "celts" or plaques, Lane Farm, a. celt from Mound 11; b. from field near Mound 11 (UMMA Neg. No. 12743).

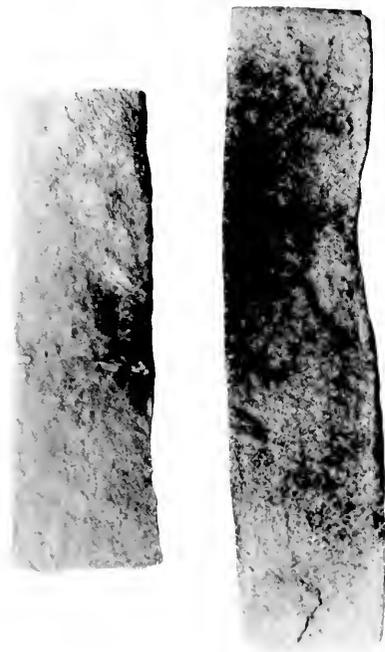


Figure 32. Sherds of a Lane Farm Cord-Imprinted pot, Lane Farm Mound 12 (UMMA Neg. No. 12709).

Imprinted and Lane Farm Stamped types (fig. 32). The rims were decorated as illustrated in figures 32 and 88d.

Mound 13 (fig. 33). Type: conical; Diameter: 35 ft.; Height: 10 in. This mound was built directly on the topsoil of the terrace, and contained a pile of limestone rocks in the burial area. The burials were in small oval pits. Burial 1 was in a pit 8 inches deep, 36 inches long, and 18 inches wide. No grave goods accompanied it. This pit and accompanying bone-bundle burial were located in the southwest quarter of the mound. Burial 2, also a bundle burial, was in a pit 12 inches deep, 40 inches long, and 14 inches wide. A Lane Farm Cord-Imprinted pot was found

*Woodland
Sites in
Northeastern
Iowa*

in the pit (fig. 34). Burial 3, another bundle burial, was found in a pit 28 inches deep, 40 inches long, and 26 inches wide. In the pit and in association with the bone bundle, was another Lane Farm Cord-Imprinted pot (fig. 35). About a foot northwest of Burial 3 was an additional Lane Farm Cord-Imprinted pot which had been placed on the mound floor outside the burial pits (fig. 36). The pot contained three clamshells.

No consistent orientation was noted for the burial pits. The pit containing Burial 1 was oriented east-west. The pit for Burial 2 was oriented north-south, and the pit for Burial 3 was oriented northeast-southwest (Orr MS., 1934, vol. I, pp. 50-55).

Mound 16 (fig. 37). Type: conical; Diameter: 30 ft.; Height: 8 in. Orr noted that this mound had been built on the topsoil, but indicated depths which would have placed the

Figure 33. Plan of burials, Lane Farm Mound 13.

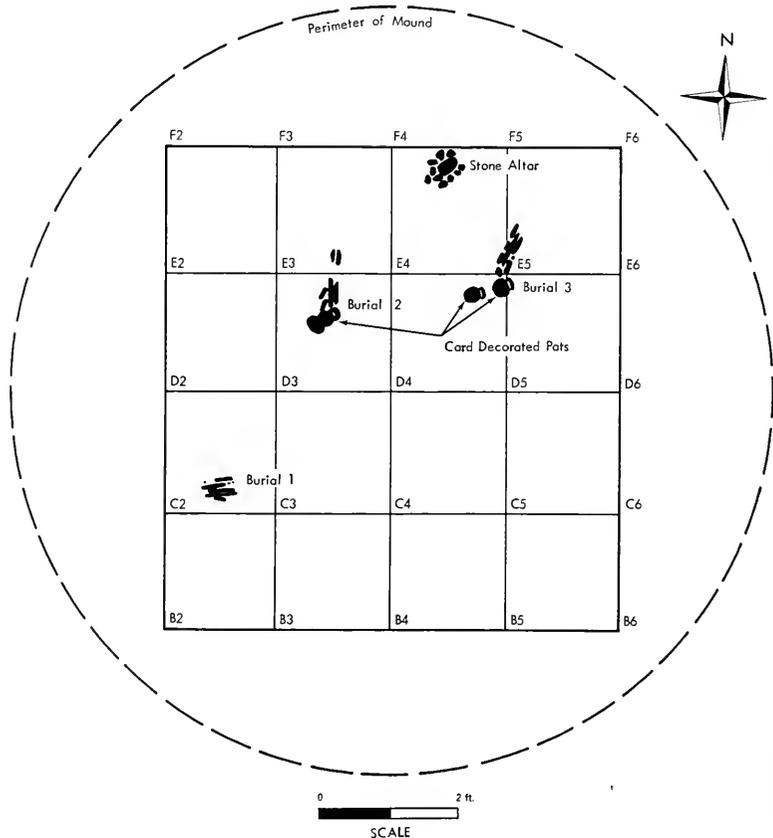




Figure 34. Lane Farm Cord-Imprinted pot,
Lane Farm Mound 13 (UMMA Neg. No. 2546).



Figure 35. Lane Farm Cord-Imprinted pot,
Lane Farm Mound 13 (UMMA Neg.
No. 12741).

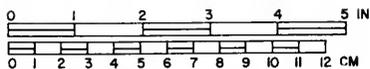
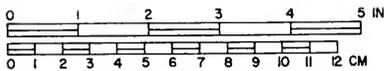


Figure 36. Lane Farm Cord-Imprinted pot,
Lane Farm Mound 13 (UMMA Neg.
No. 12742).



*Woodland
Sites in
Northeastern
Iowa*

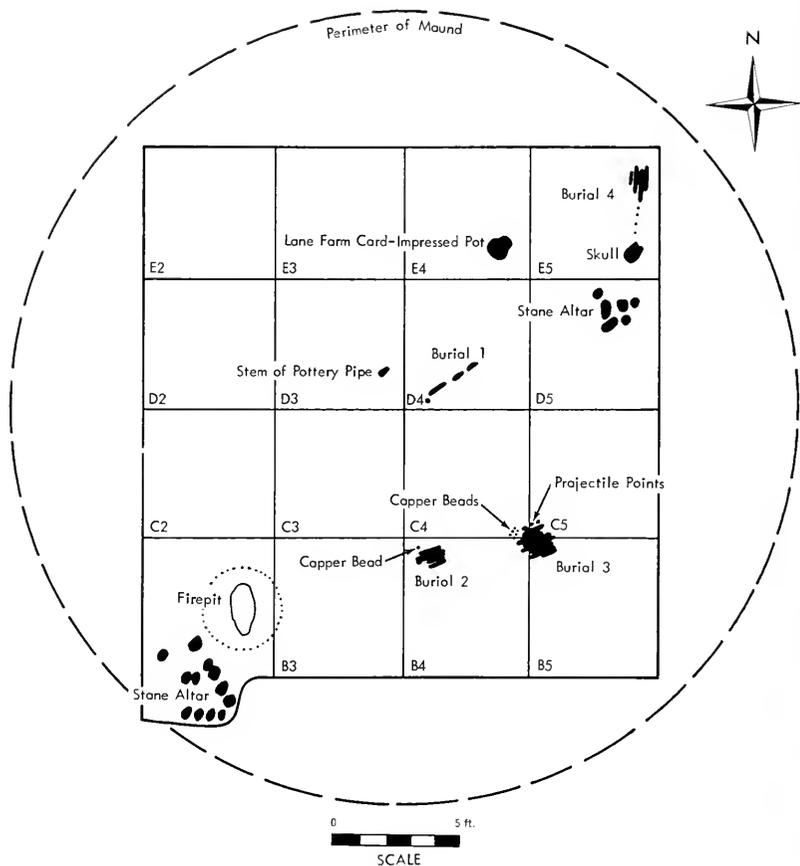


Figure 37. Plan of burials, Lane Farm Mound 16.

burials somewhat below the terrace surface. Judging from Orr's description, I believe the builders had made an excavation of some extent in preparation for placement of the burials. The remains of an intrusive pit were found in the southwest quarter of the mound. This pit contained charcoal, clamshells, fish bones, flint chips, flint cores, and Oneota sherds.

The floor varied in depth below the terrace surface from 14 to 18 inches. Near the edge of the mound in the southwest quarter of the excavation was a pile of limestone fragments. Near the center of the mound lay three long bone fragments with a few grit-tempered potsherds. A bundle of long bones was found a little more than 5 feet south of the mound's center. A short cylin-

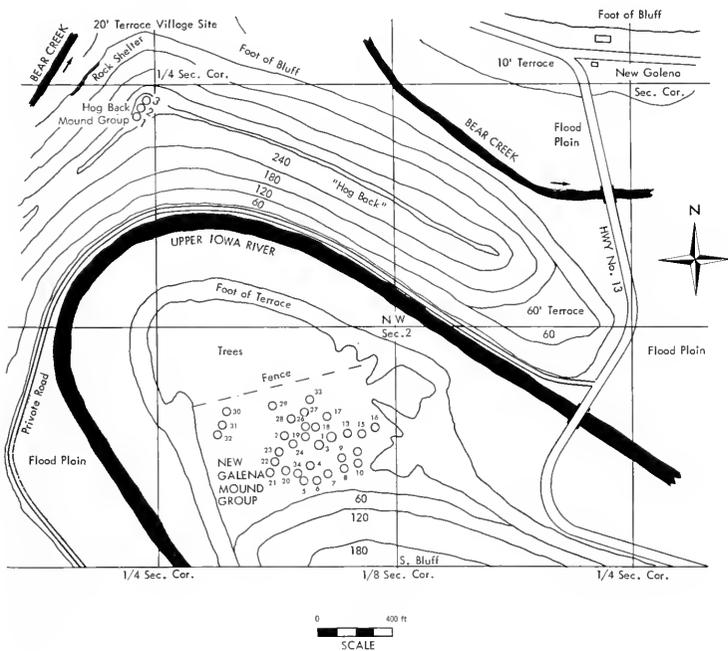
drical copper bead accompanied the bundle.

Another bone bundle lay slightly less than 5 feet east of the bundle accompanied by the copper bead. Six short cylindrical copper beads, a small triangular projectile point, a corner-notched point, and a contracting-stemmed point were associated with this third bundle. A fourth bundle burial lay along the edge of the mound in the extreme northeast quarter of the excavation. No grave goods were associated with it. About 5 feet west of the fourth bundle was a crushed grit-tempered pot of the Lane Farm Cord-Im-pressed type (fig. 38). A pottery elbow pipe stem was found near the center of the mound west of the three longbone fragments listed above. The sherds found in the burial area were of Lane Farm Cord-Im-



Figure 38. Lane Farm Cord-Im-pressed pot, Lane Farm Mound 16 (UMMA Neg. No. 2545).

Figure 39. New Galena and Hog Back Mound groups.



Woodland
Sites in
Northeastern
Iowa



Figure 40. Levsen Stamped pot,
New Galena Mound 1.

pressed and Lane Farm Stamped types. A second pile of limestone fragments was noted in the northeast quarter of the mound (Orr MS., 1934, vol. I, pp. 56-57).

Mound 7. Type: conical; Diameter: 40 ft.; Height: 8 in. Eight potsherds were found in the mound fill. Of these, one was a Madison Cord-Imprinted rim and another was classed as Spring Hollow Cordmarked. The remainder were unclassified (Orr MS., 1936, vol. V, p. 6).

Mound 10. Type: conical; dimensions unspecified. Two poorly preserved bundle burials and an extended skeleton were found. A bison scapula lay beside the right femur of the extended skeleton. Sherds of Oneota pottery were found around the skeleton. At a depth of 24 inches in the southeast quarter of the mound was a well-made, elongate ovoid knife. An additional 24 Oneota sherds were found in the mound fill (Orr MS., 1936, vol. V, p. 7).

Mound 17. Type: conical; dimensions unspecified. This mound was built directly on the topsoil of the terrace. It contained nothing but a pile of limestone and sandstone fragments (*ibid.*, p. 6).

New Galena Mound Group. This group was located on the south half of the northeast quarter of Section 2, Township 99 North, Range 6 West, along the Upper Iowa River (fig. 39). When Orr mapped the mound group in 1904, it contained 32 conical

mounds. The Iowa Archaeological Survey excavated five mounds in the group in 1934; in 1936, they returned to the site and excavated an additional nine mounds.

Mound 1. Type: conical; Diameter: 48 ft.; Height: 30 in. The builders had excavated a pit 4 feet wide, 5 feet long and 31 inches deep. The pit, oriented northeast-southwest, may have contained five bundle burials according to an estimate Orr presented in his notes. However, the photographs accompanying the notes indicate the possibility that there were more, since parts of at least six skulls can be seen. A complete grit-tempered pot was found at about the middle of the mass of bone bundles (fig. 40). Near the pot were two copper hemispheres 2.5 and 2.1 cm. long with perforations near their rims set diametrically opposite each other (fig. 41c, d). In the mound fill the excavators found a flat-based triangular knife made of gray chalcedony. This artifact is 4 inches long and 1½ inches wide at the base. Near the surface of the mound was a large, ovoid, lanceolate blade of a type commonly found in Oneota sites of the locality. This object, having been found so near the surface of the mound, was probably intrusive.

The pot found with the burials is short, squat, and has a rounded base. The lip is sharply everted and notched with a cord-wrapped stick. The upper rim flares markedly. Below the rim, the neck is straight,

merging gradually into a slight shoulder. Diameters at the orifice and shoulder appear to be about equal.

The pot is approximately 3½ inches high, and about 5 inches in diameter at the mouth. In addition to cord-wrapped-stick notches on the lip, there were horizontal cord-wrapped-stick impressions around the neck below a zone of stick or reed punctates. The cord-wrapped-stick impressions on the neck tended to be placed in vertical zones evenly spaced around the vessel. Just below the widest part of the body was a series of ellipses whose long axes were placed horizontally. A horizontal incised line encircled the pot, dividing the ellipses into equal halves. The zones thus described within the ellipses were alternately plain or filled with vertical to oblique cord-wrapped-stick impressions. On the exterior of the ellipses, opposite the plain areas on the interior of these figures, the body was covered with vertical cord-wrapped stick impressions. Opposite the cord-wrapped-stick filled areas within the ellipses, the body was plain. This pot resembled no other found elsewhere in the northeastern Iowa, with the exception of fragments of a pot found in Mound 4 of this same mound group (fig. 42). Orr considered the mound to have been of Hopewellian origin (Orr MS., 1934, vol. I, pp. 5-6).

Mound 2. Type: conical; Diameter: 40 ft.; Height: 24 in. This mound was built on a floor cleared of humus. A single extended skeleton was found 1 foot below the natural surface of the surrounding terrace. There were no grave goods, and nothing was found in the mound fill (Orr MS., 1934, vol. I, p. 6).

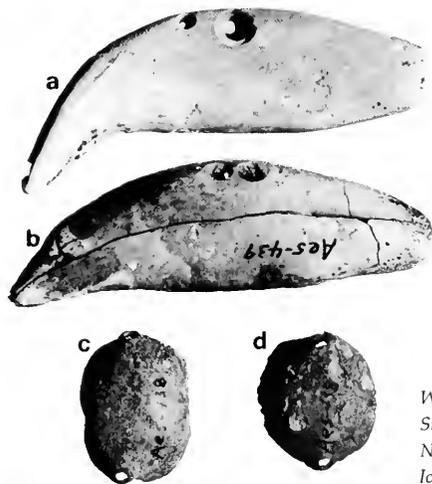
Mound 3. Type: conical; Diameter: 40 ft.; Height: 24 in. Orr noted a rectangular burial pit 5 feet wide, 8 feet long, and 36 inches deep, oriented northeast-southwest. Intrusive in the mound fill was an extended Oneota skeleton with head to the west. Near the left shoulder was a small deposit of flint flakes. An Oneota knife was found at the

left femur, and by the right knee was an Oneota pot. Beside the left ankle was a cache of 14 small triangular projectile points.

The rectangular pit contained 22 bundle burials. The skulls had been placed in rows at both ends of the pit. The bundles of long bones were stacked in front of each of the skulls. Two perforated bear canine teeth, 7.0 and 7.3 cm. long, were found in this mass of bones (fig. 41a, b). Under one of the skulls was a "nest" of six grit-tempered sherds. These could not be located in the collections from the excavation. Orr described them as pieces of a thick-walled vessel tempered with crushed granite. He also observed that the sherds were so soft that they were difficult to save (ibid., p. 6).

Mound 4. Type: conical; Diameter: 50 ft.; Height: 24 in. The mound contained seven extended skeletons on a floor cleared of humus. No other inclusions were mentioned, but among the objects in the Keyes Collection were fragments of a crude limestone

Figure 41. Perforated bear canines and copper hemispheres, New Galena Mound 1. (UMMA Neg. No. 12708).



Woodland
Sites in
Northeastern
Iowa

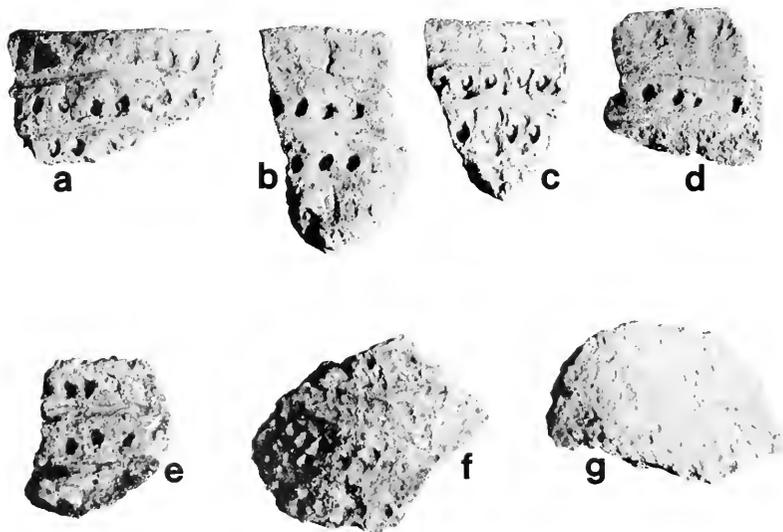
tempered vessel said to have come from Mound 4. The lip of the pot is rounded and plain, and 7.0 mm. wide. The rim is 1.1 cm. thick. On the exterior rim below the lip are vertical elongate punctates. Immediately beneath these is an incised line poorly drawn with a rounded point. At least four such horizontal lines were incised around the neck of the pot. The spaces between these lines are filled with a horizontal row of circular punctates 4.0 mm. wide with a hollow cylinder which are spaced at regular intervals around the neck (fig. 42a-e). The entire surfaces of body sherds from this vessel were covered with similar punctates applied in no discernible arrangement or order (fig. 42f-g). The sherds were very soft and friable and had a surface hardness of 2.0 (Orr MS., 1934, vol. I, p. 6).

Mound 8. Type: conical; Diameter: 32 ft.; Height: 18 in. This mound contained only fragments of bone in what appeared to have been two levels. The notes did not state

burial type, but examination of photographs of the bones *in situ* indicated bone bundles (ibid., p. 6).

Mound 15. Type: conical; Diameter: 24 ft.; Height: 24 in. No construction features were mentioned in the notes. A single fragmentary bundle burial was found 24 inches below the surface. Orr's description did not specify what this measurement represented, that is, whether this was a depth below the surface of the mound, or below the estimated original terrace surface. A chipped-stone celt (or adze) and a scraper were found 6 inches below the original terrace surface as estimated by Orr. Three pits were excavated along the margin of the mound. One had been filled with black earth. The contents of the second pit were not described. The third contained limestone fragments, charcoal, Oneota pottery, and black earth. It was assumed that all three pits were of Oneota origin (Orr MS., 1936, vol. V, p. 74).

Figure 42. Sherds of pot from New Galena Mound 4 (UMMA Neg. No. 12707).



Mound 16. Type: conical; dimensions unspecified. Two Oneota cache pits were found in the mound. One contained an Oneota rimsherd.

Fragments of burned limestone were in the other pit. Orr thought the pits were dug by the builders of the mound. If this were the case, the mound would have been of Oneota origin (*ibid.*, p. 73). In the collection in Iowa City, a disk-like granite mano or pestle was noted as having come from Mound 16 as well as a handle from an Oneota pot and an abraded. Orr mentioned none of these items in the notes.

Mound 18. Type: conical; Diameter: 30 ft.; Height: 12 in. A subfloor pit containing burials was found. The notes did not provide information on dimensions or form of the pit. It seems to have been about 3 feet deep, and the burials within were oriented northeast-southwest. These burials consisted of three fragmentary adult skeletal bundles, with a bundle burial of a child's skeleton to the south of the adults. No grave goods were found (*ibid.*, p. 82).

Mound 23. Type: conical; Diameter: 33 ft.; Height: 24 in. The mound contained burials at unspecified depths below the natural terrace surface indicating that the builders had made an excavation before placing the skeletons. The central part of the mound contained no burials. Of the three skeletons found, only one seems to have been Woodland. The other two evidently were of Oneota origin. One Oneota burial was found toward the south edge of the excavation. It consisted of two femur shafts and two tibiae at a depth of 20 inches below the natural terrace level. East of the knees and slightly above the burial floor were 10 flakes of dark flint, 14 flakes of another type of flint, 9 small triangular projectile points, one small cone-shaped catlinite object, a small cubical black stone object, a clamshell fragment, a smoothing stone, and a copper "snake." Beside the right tibia were two small triangular points, and over the left knee was a

broken platform pipe of the type usually considered Hopewellian in origin (fig. 79b). The shouldered bowl is, however, unusual on Hopewell pipes and this may well be a later variant.

The other Oneota skeleton was extended. It lay near the east side of the excavation. The mandible lay across the right femur. Orr believed that the right arm had been separated from the body prior to burial, as the "elbow" was toward the skull with the proximal end of the humerus beside it. The distal end of the ulna lay over the pelvis. A rolled copper tube lay against the left side of the skull. Another copper tube lay between the distal ends of the femurs. Beside the humerus of the putatively detached arm were a large flake of white flint, a white flint planoconvex scraper, a white flint knife, a pestle made from translucent stone of an unknown type, and an Oneota pot. Beside the left femur was a carefully flaked Oneota knife.

The third burial was a bone bundle in the west side of the excavations. It consisted of a skull, three longbone fragments, and a mass of decayed smaller bones. No grave goods were found with it. It may have been part of the mound's original Woodland burial complex (*ibid.*, pp. 76-77).

Mound 27. Type: conical; Diameter: 30 ft.; Height: 14 in. Although no burials were recorded, grave goods were recovered. A platform pipe of Hopewellian type was found 16 inches below the level of the surrounding terrace (fig. 79a). This depth may indicate a pit dug before the mound was built. A bison scapula hoe was found 6 inches below the level of the terrace surface. A mass of carbonized grass was found 20 inches below the terrace level. A pit near the mound's center appeared to have been an Oneota intrusion, and contained Oneota potsherds and an antler tine (Orr MS, 1936, vol. V, p. 81). The platform pipe, lavender in color, is smaller than the specimen found in New Galena Mound 23. The ventral sur-

Woodland
Sites in
Northeastern
Iowa

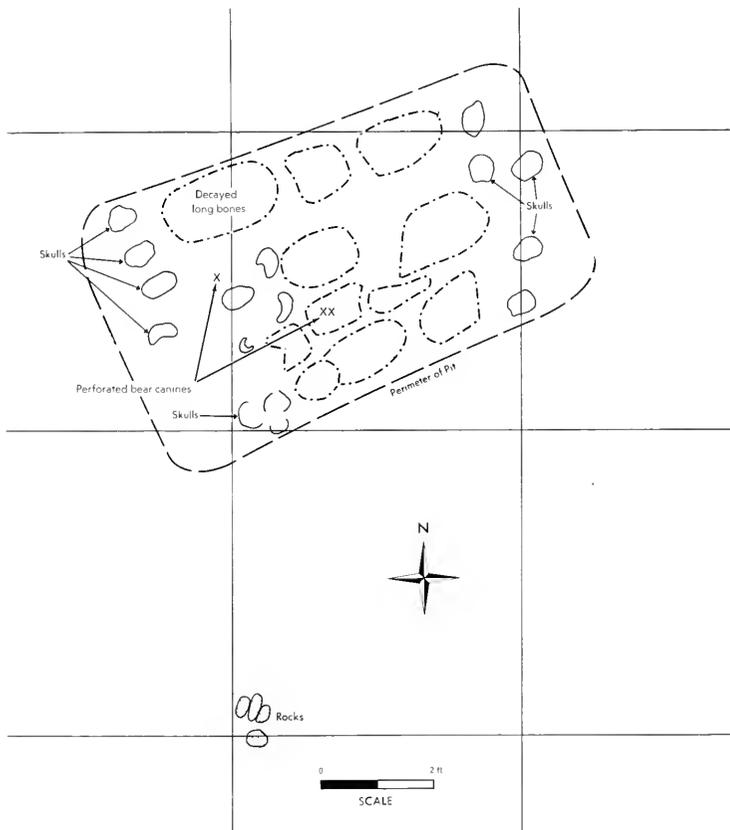


Figure 43. Plan of burial pit and adjacent mound floor, New Galena Mound 28.

face of the platform was flat rather than curved.

Mound 28 (fig. 43). Type: conical; dimensions unspecified. Mound 28 contained a rectangular burial pit, the long axis of which was oriented northeast-southwest. Four large rocks lay nearby. The pit contained fourteen bundle burials as estimated from the number of skulls. The long bones were

aligned with the long axis of the pit. The skulls lay in rows along the end of the pit at the ends of the bone bundles. Grave goods consisted of a perforated bear canine on top of one of the long bone bundles (*ibid.*, p. 75).

Mound 30. Type: conical; Diameter: 25 ft.; Height: 10 in. Just below the surface of the mound in the southeast quarter was a pile of coarse gravel and sand. Below this

was a layer of black, sandy soil 10 inches deep. The black, sandy soil was on top of a gravel and sand deposit, at the bottom of which were ashes, charcoal, and burned bones about 8 inches deep and 3 feet in diameter. Four large rocks, evenly spaced around this deposit, showed evidence of contact with fire.

At the bottom of the fired area and a little to one side was a triangular spear point or knife of white flint with a wide, nearly straight stem and flat base. This point was associated with a pelvis fragment. Directly east of the center of the mound was another gravel deposit, 3 feet in diameter. In the northeast quarter of the mound was a rectangular pit 4 feet wide, 6 feet long, and 12 inches deep. A burned rock about 7 inches in diameter lay in one corner of the pit (*ibid.*, p. 84).

Mound 32. Type: conical; Diameter: 24 ft.; Height: 10 in. The excavation was carried down to a depth of 24 inches. Nothing was found except 10 friable, grit-tempered sherds cupped one within the other. Their surfaces were plain. As they could not be located in the Keyes Collection, no further details are known. Orr did not describe construction features of the mound (*ibid.*, p. 84).

Hog Back Mound Group (fig. 39). This small group was located on a high, narrow ridge between the Upper Iowa River and Bear Creek in the northwest quarter of the northeast quarter of Section 2, Township 99 North, Range 6 West. The group consisted of three conical mounds, two of which were excavated by the Iowa Archaeological Survey.

Mound 1 (fig. 44). Type: conical; dimensions unspecified. Mound 1 was very complex, the result of previous excavations and Oneota intrusions. The burials were found in what appeared to be two layers. The upper layers consisted of Burials 1 through 7. They are described below:

Burial 1. Extended. This skeleton lay with head to the west.

Burial 2. Extended. The skeleton seems to have been disturbed by vandals. Only the pelvis and lower limbs remained. The left femur showed evidence of an old fracture that had healed.

Burial 3. Extended. The burial consisted of a skull, part of the vertebral column, the left side of the thoracic cage, and the left humerus. It also may have been disturbed by vandals.

Burials 4, 5, and 6. These burials consisted of single skulls only.

Burial 7. Extended. This was a nearly complete skeleton, the skull of which lay to the northeast.

The lower burials were encountered at a depth averaging 2 feet deeper than that of the burials in the upper layer. The lower layer consisted of six skeletons. Their characteristics were as follows:

Burial 8. A bundle burial, consisting of a skull fragment and the shafts of four longbones.

Burial 9. A bundle burial.

Burial 10. Extended with head to the west.

Burial 11. Extended with head to the northwest. A bone awl was found between the knees of this skeleton.

Burial 12. A skull and parts of femurs arranged in the relationship they would have had to each other in a flesh burial. The remainder of the burial was a bundle of bones.

Burial 13. Extended. An Oneota pot lay by the proximal end of the left femur. Beneath the pot were 48 flint flakes, a plano-convex scraper, a flint drill point, a flake knife, and an antler tine. A small limestone pipe of elbow form and an ovoid knife were found by the proximal end of the right femur. Near the right tibia was a cache of 16 triangular projectile points. Over the thoracic cage were two fragments of coiled copper wire and a bone bead.

The mound had been badly disturbed by Oneota excavations and by the ravages of

*Woodland
Sites in
Northeastern
Iowa*

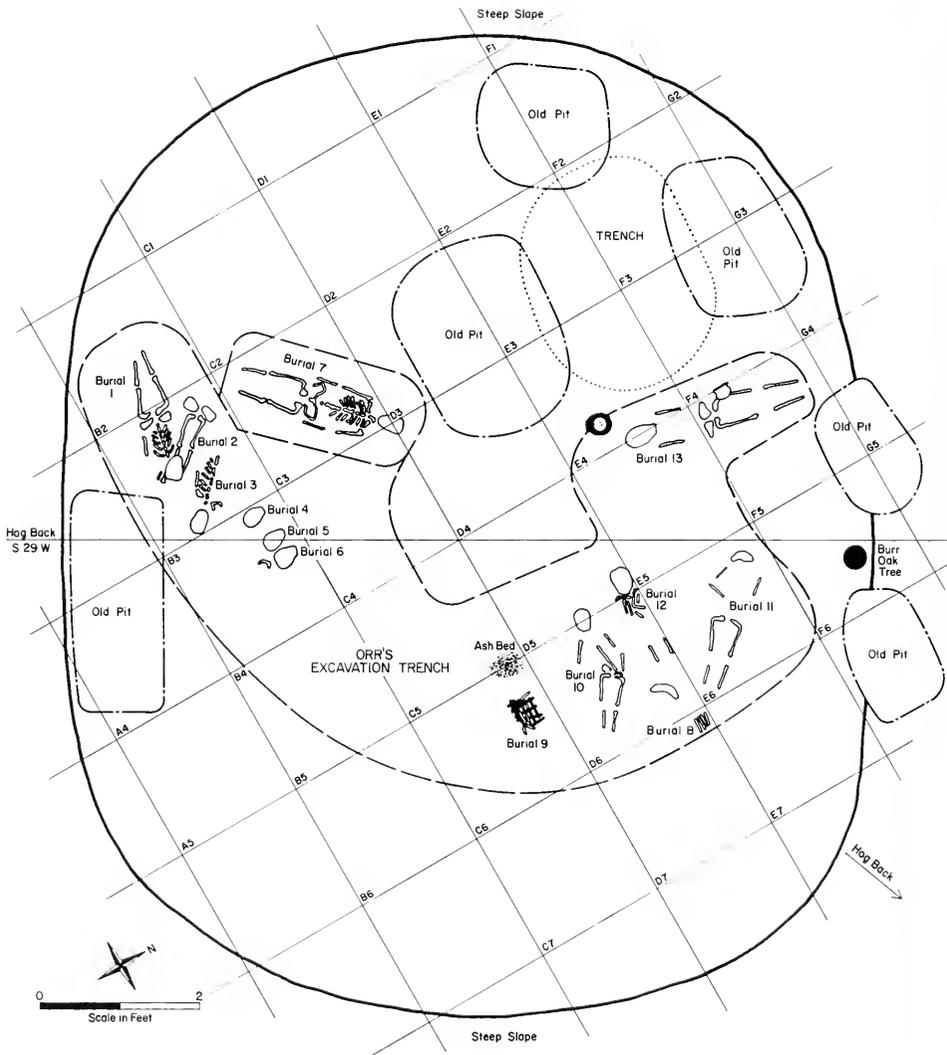


Figure 44. Plan of excavations and burials, Hog Back Mound 1.

Woodland
Complexes

vandals, and little could be ascertained concerning its construction. A deposit of ashes and charcoal was found near Burial 9. In view of the disturbance, it was questionable as to whether or not the deposit was inclusive. The mound fill contained five grit-tempered sherds, three roughly flaked flint objects, one planoconvex scraper, and one straight-stemmed projectile point (*ibid.*, pp. 49-51).

Mound 3. Type: conical; Diameter: 24 ft.; Height: 24 in. The humus layer was removed before the mound was built. The burial consisted of a skull fragment at the mound's center, 6 inches below the bluff-top level. A complete pot was found 18 inches west of this fragment. The pot was grit-tempered with a plain surface, resembling Weaver Plain pottery (Griffin, 1952b, pp. 121-122). A large chipped-stone celt, or scraper, and a straight-stemmed projectile point were recovered from the mound fill (Orr MS., 1936, vol. V, pp. 62-64).

The small pot is of the type called Spring Hollow Plain. The lip is rounded and the upper rim flares slightly. The diameter of the pot expands slightly at the shoulder. The body is elongate with a rounded base (fig. 45).

Slinde Mound Group. This group consisted of 15 conical mounds located on a terrace above the Upper Iowa River in the southwest quarter of the northwest quarter of Section 30, Township 99 North, Range 6 West. Five mounds were excavated by the Iowa Archaeological Survey. One in particular was interesting in that it contained grave goods indicating a relationship to the mounds of the Lane Farm group.

Mound 5. Type: conical; Diameter: 27 ft.; Height: 28 in. A pile of burned limestone fragments lay on the mound floor. No burials were found. The mound fill contained flint chips, charcoal fragments, a grit-tempered potsherd, and a crude projectile point (Orr MS., 1934, vol. I, p. 122).



Figure 45. Pot from Hog Back Mound 3 (UMMA Neg. No. 12740).

Mound 6. Type: conical; Diameter: 40 ft.; Height: 48 in. The mound fill contained two grit-tempered sherds. West of the mound's center was a thin lens of charcoal below the pre-mound terrace surface. The burial floor appeared to have been excavated below the original terrace surface, and its depth varied between 14 and 25 inches. A heap of pebbles was found in the southeast part of the mound 14 inches below the terrace surface. Two decayed oak posts were set upright in the mound floor about 2 feet west of the center and 15 inches below the terrace level. These logs were roughly 1 foot long and 8 inches in diameter. At the center of the mound, 25 inches below the terrace level, was a single skull accompanied by a grit-tempered pot containing a mussel shell. The pot was almost complete. A corner-notched projectile point lay beneath the pot (*ibid.*, pp. 122-123).

The pot associated with the skull, projectile point, and clamshell is of the type called

*Woodland
Sites in
Northeastern
Iowa*



Figure 46. Lane Farm Cord-Imprinted pot from Slinde Mound 6.

Lane Farm Cord-Imprinted. It is decorated on the rim with impressions of single cords arranged horizontally to the line of the lip. Pendant to these are evenly spaced pairs of oblique single cord lines slanting to the right. The body is covered with plain rocker stamping. Some effort had been made at smoothing the surface after the decoration had been applied (figs. 46 and 89h).

Mound 7. Type: conical; Diameter: 30 ft.; Height: 24 in. The builders evidently made a shallow excavation, clearing the humus from the floor. A femur fragment was found 6 inches below the natural level of the terrace. A crude knife was found in the sand thrown out of the mound (*ibid.*, p. 123).

Mound 8. Type: conical; Diameter: 20 ft.; Height: 24 in. The topsoil had been removed from the floor. A limestone rock was found 10 inches below the level of the natural surface of the terrace. Charred logs were found 16 inches below the surface of the mound.

What appeared to be bundle burials were scattered over the floor. Burial 1 consisted of long bones 14 inches below the level of the terrace; Burial 2 was a badly decayed long bone fragment at a depth of 5 inches below the terrace level; Burial 3 was a single long bone fragment 24 inches below the level of the terrace surrounding the mound; Burial 4 was a long bone fragment accompanied by bits of a pelvis and clavicle 14 to 16 inches below the terrace level (*ibid.*, p. 123).

Mound 13. Type: conical; Diameter: 18 ft.; Height: 12 in. No burials were found. A net sinker, made from a small sandstone concretion, was located 18 inches below the mound surface (*ibid.*, p. 124).

MISCELLANEOUS BURIAL MOUND DATA

In addition to the Iowa Archaeological Survey's data presented in the preceding section, material was gathered on several miscellaneous mound excavations. The Keyes collection contained artifacts from a conical mound on the Ed Thompson farm about 1 mile south of Clermont, Iowa, in Fayette County. They included a catlinite platform pipe with incised lines on all edges of the platform; two large "ceremonial" blades made from a translucent brown material; two badly decayed, copper stained bear canine teeth; and 15 rolled sheet copper beads, cylindrical in form. No information was available on burials which may have accompanied these items.

Near Bluffton, Iowa, in Winnesheik County, an amateur archeologist excavated a conical mound on the Lyle Bentley farm. I was permitted to examine the pot found in the excavation and was given a verbal account of features noted by the excavator. The mound evidently contained a single bundle burial over which lay a few rocks.

The pot mentioned above accompanied the burial and is of Madison Cord-Imprinted type, decorated with single cord impressions

over a cordmarked surface on the upper rim. The lip of the pot was notched lightly with single cords. Below the cord-impressed zone on the upper rim, a zone of small stick or reed punctates forms a dotted line around the pot horizontally and paralleling the zone of single cord horizontals above (fig. 88f). The vessel shape differs somewhat from that usually noted for Madison Cord-Impressed pots. The shoulder is set very low, almost at the base of the vessel. There was a slight constriction of the pot's diameter above the shoulder which curved smoothly into a slight flare of the upper part of the rim. The pot was almost a deep bowl in form (fig. 95i).

Prior to cultivation, a cluster of six conical mounds was located on the Knight farm, along the shore of Gremore Lake (a sheltered backwater of the Mississippi River) in the outskirts of the north part of Prairie du Chien, in Crawford County, Wis. In the summer of 1955, the landowner began to remove one of the mounds along the roadside for use as fill for a summer cottage which he was building on the shore of Gremore Lake.

I visited this operation in the company of an amateur archeologist of Prairie du Chien. Most of the mound had been removed, but a layer of red ocher located somewhat below the original level of the terrace remained partially intact. In the process of removing this layer with trowels, a corner-notched projectile point was found in the red ocher. Due to weather conditions, the red ocher layer could not be completely removed at this time. However, before work on the mound was resumed with the power shovel, the amateur who first called my attention to the site completed removal of the red ocher layer with a trowel. In the edge of the layer he found a crude limestone celt. No burials or parts of burials were discovered in the red ocher layer. Subsequently the mound was completely destroyed by the power shovel.

Notes and photographs pertaining to a

mound overlooking the Mississippi River near Lanesville in Jackson County, Iowa, were found in the Keyes collection. No information was included on burials. The grave goods were spectacular in comparison to those found in most northeastern Iowa mounds. They consisted of three incised and perforated bear canine teeth, two serrated copper crescents, a copper earspool, part of another copper earspool, 22 rolled copper beads of cylindrical form, one large contracting-stemmed projectile point fragment, and one large corner-notched flint blade, 11 inches long.

HABITATION SITES

The numerous burial sites studied by the Iowa Archaeological Survey were thought to present a good, general picture of the burial complexes associated with Woodland horizons in Iowa's northeastern counties. Village excavations, however, were not so complete. In general, the Iowa Archaeological Survey seemed to have devoted more attention to burial mounds than to habitation sites. Likewise, among the village and campsites, rock shelters were studied more frequently than "open" sites.

It is probable that the higher ratio of artifacts recovered to volume of earth removed in rock shelter excavations played a part in this selectivity. Also, rock shelters are very common in the northeastern Iowa counties. They range in size from small enlarged crevices in the sandstone formations to wide-mouthed, shallow caves of the type exemplified by the Sixteen Rock Shelter in Allamakee County and the Levsen Rock Shelter in Jackson County.

A great many of the local shelters appear to have been occupied at one time or another by prehistoric peoples. From the standpoint of a study focusing on Woodland archeology, they are very important for they seem to have been occupied most heavily during these earlier stages of local cultural develop-

*Woodland
Sites in
Northeastern
Iowa*

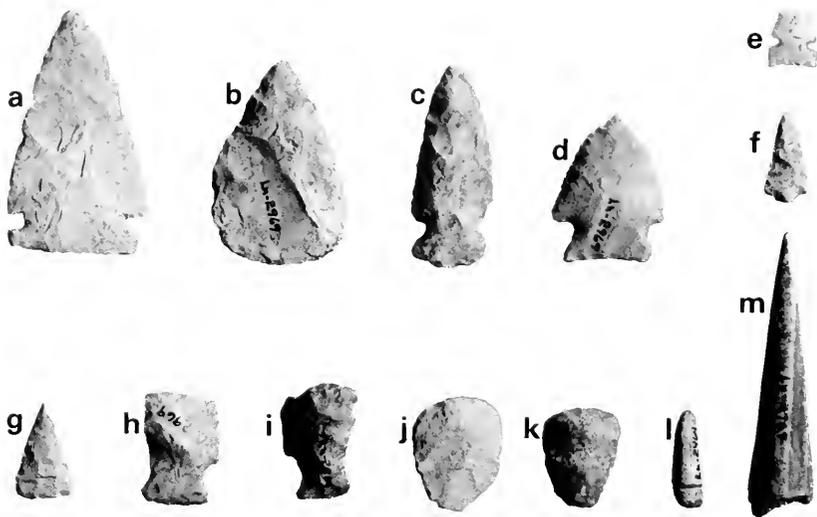


Figure 47. Chipped stone, bone, and antler artifacts from the Spring Hollow Shelters (UMMA Neg. No. 12736).

ment. In Allamakee County, for example, the bulk of remains assignable to protohistoric and early historic times is found in large village sites on open river terraces. Only a meager amount of material in the top levels of the shelters is assignable to this period. A well situated shelter often may contain a nearly complete record of local culture history.

Among the site descriptions which follow, it will be noted that not all of the excavations were the product of the Iowa Archaeological Survey's research. The Survey excavated the three Spring Hollow Rock Shelters, the two Gingerstairs Shelters, the Minott's Shelter, the Waterville Shelter, the Sixteen Shelter, and the Elephant Site. The Levsen, Mouse Hollow, Crabtown, Jeffrey Edwards Creek, Clay Mills, Verne Hute, Pine Run, and Farmer's Creek Rock Shelters, and the Bolling Pasture Site were studied by Paul Sagers of Emeline, Iowa, who furnished

notes and information to Keyes and me. Excavation of the Highway Thirteen Rock Shelter was begun under the direction of Leland Cooper of Hamline University, St. Paul, Minn., and was completed by me. Data from the Nelson Dewey Site, Cassville, Wis., are also based on excavations under my direction. The data for these sites are not all of the same quality. The information is considered best for the Spring Hollow, Gingerstairs, Minott's and Highway Thirteen Rock Shelters, and for the Nelson Dewey Site. The Levsen Rock Shelter provides a full array of artifact types for the Woodland horizons, but is lacking in stratigraphic or superpositional data.

Spring Hollow Rock Shelter No. 1. This shelter was located on the Cedar River in Linn County, Iowa, within the Palisades-Kepler State Park a few miles south of Mount Vernon. Excavation was directed by Charles R.

Keyes during the late years of the Iowa Archaeological Survey's activity. The shelter was divided into sections five feet square and was excavated in arbitrary 6-inch levels within these sections. Little is known of the excavation details. Vertical distribution of certain pottery types indicates the possibility of some disturbance in the deposits, especially in the section designated B2. Since the quantity of material recovered within any one excavation block was too small for meaningful analysis by individual section, the shelter was treated as a unit in spite of the presumed disturbance of one or more

parts of the site. Comparative analysis of the several 6-inch levels therefore includes material from the shelter as a whole for each level. Chipped stone, bone, and antler artifacts from the Spring Hollow Shelters are depicted in figure 47.

In addition to the artifacts, the shelter contained habitation debris of another type. Bird and animal bones representing deer, bear, small carnivores, squirrel, and large birds (possibly turkey) were noted. Bones of smaller mammals and birds and mussel shells also were found. Burned and smoke-discolored limestone and sandstone frag-

Table 1. Numerical distribution of artifact types from Spring Hollow Rock Shelter, No. 1

<i>Artifact type</i>	<i>6-inch excavation levels</i>				
	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>	<i>V</i>
Pottery					
Madison Cord-Imprinted					
Rim	35	44	3	2	4
Body	248	418	98	37	34
Spring Hollow Plain					
Rim	1	6	1	4	3
Body	23	35	25	36	26
Spring Hollow Cordmarked		55	1	3	1
Spring Hollow Incised	4	6	5	30	11
Spring Hollow Brushed		3	4	11	1
Levsen Stamped	1	3	3	3	
Minott's Plain		2			
Cordmarked bodysherds	84	97	94	107	26
Rim with chevrons incised on lip	2				
Shell-tempered with plain surface	1				
Chipped stone:					
Projectile points					
Small triangular	2				
Small corner-notched	1				
Broken		1			
Ribbon flakes	1		1		
Irregular flake knives	4	7	5	1	
Spokeshaves		3	1		
Ground and pecked stone:					
Pebble hammerstone				1	
Bone:					
Polished antler tip		1			

*Woodland
Sites in
Northeastern
Iowa*

<i>Artifact type</i>	<i>6-inch excavation levels</i>				
	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>	<i>V</i>
Pottery:					
Madison Cord-Imprinted					
Rim		8	9		
Body	101				
Spring Hollow Plain					
Rim			1		
Body	15	3			
Levsen Stamped	1				
Spring Hollow Cordmarked	24				
Unclassified cordmarked bodysherds	19				
Chipped stone:					
Projectile points					
Ovoid			1		
Small triangular				2	
Large triangular					1
Triangular side-notched	1	1			
Small expanding-stem			1		
Large contracting-stem			1		
Small contracting-stem				2	
Straight stem				1	
Large side-notched				1	
Large corner-notched					2
Small corner-notched		1			
Broken			2	1	1
Flat-based triangular knife					1
Broken knife fragments		2			
Planoconvex scrapers	2	3			7
Ribbon flakes	3	1			1
Irregular flake knives	2	6	4	5	5
Spokeshaves		1			
Core choppers	1				
Ground and pecked stone:					
Hammerstone		1			
Wedge-shaped pestle (?)				1	
Mortar fragment					1
Sandstone abrader				1	
Bone and shell:					
Antler flaker				1	
Polished antler tip				2	1
Perforated shell					1

Table 2. Numerical distribution of artifact types from Spring Hollow Rock Shelter, No. 2

ments, probably derived from fireplaces, were noted. Charcoal fragments were common. The shelter contained a large amount of flint in the form of small flakes and cores, indicating that it had been used as a workshop as well as a campsite.

Depths of the arbitrary 6-inch levels were as follows: Level I, surface to 6 inches; Level II, 6 to 12 inches; Level III, 12 to 18 inches; Level IV, 18 to 24 inches; Level V, 24 to 30 inches. The inventory for each of these excavation levels is presented in table 1.

Spring Hollow Rock Shelter No. 2. This also was a small rock shelter within the present Palisades-Kepler State Park. Its location with respect to the first shelter is unknown. The excavation was carried out in the same manner as that of Spring Hollow Rock Shelter No. 1. Arbitrary levels 6 inches thick were excavated within sections 5 feet square. The artifact distributions given in table 2 are presented for each 6-inch level as totals for the whole of the shelter. The depths of the five excavation levels were as follows: Level I, surface to 6 inches; Level II, 6 to 12 inches; Level III, 12 to 18 inches; Level IV, 18 to 24 inches; Level V, 24 to 30 inches.

In addition to the material excavated within this rock shelter, a large quantity of remains was recovered in an "approach trench" outside the shelter. This material was found between the depths of 2 feet, 3 inches, and 2 feet, 6 inches. The artifacts found are listed in table 3. The collection from this rock shelter also contained material on which no information could be found other than a notation that it derived from the site. The objects included the following: 105 cordmarked body sherds, two Levsen Stamped sherds, two Spring Hollow Plain rims, one Spring Hollow Cordmarked rim, and five Minott's Cord-Imprinted body sherds.

Spring Hollow Rock Shelter No. 3. This was another small rock shelter in the Palisades-

<i>Artifact type</i>	<i>Numerical frequency</i>
Pottery:	
Minott's Cord Imprinted	
Rim	10
Body	2
Madison Cord Imprinted	
Rim	12
Body	1
Spring Hollow Cordmarked	10
Spring Hollow Plain	14
Levsen Stamped	3
Spring Hollow Incised	6
Plain bodysherds	1
Chipped stone:	
Small triangular projectile point	5
Small triangular side-notched projectile point	1
Large side-notched projectile point	1
Expanding-stemmed projectile point	3
Ovoid projectile point	1
Small corner-notched projectile point	1
Broken projectile points	5
Ground and pecked stone:	
Anvilstone	1
Bone:	
Polished, scorched bone fragment	1
Deer ulna awl	1
Antler flaker	4
Incised antler tip	2
Polished antler tip	2

Table 3. Artifacts from the approach trench, Spring Hollow Rock Shelter, No. 2

Kepler State Park. The site was divided into sections 5 feet square and excavated in arbitrary 6-inch levels. The material recovered is presented in table 4, giving the total artifacts for each 6-inch level. This shelter also contained evidence of fireplaces in the form of burned limestone fragments included in the collections. Workshop debris, consisting of flint flakes and unmodified flint cores indicated that chipped stone tools had been made at the site. Calcite crystals also are in the collections.

Woodland Sites in Northeastern Iowa

Artifact type	6-inch excavation levels	
	I	II
Pottery:		
Madison Cord-Imprinted		
Rim	2	12
Body	0	0
Minott's Cord-Imprinted		
Rim	12	9
Body	119	180
Rim with chevrons incised on lip	1	2
Chipped stone:		
Crude planoconvex scraper	2	1
Ribbon flake		1
Irregular flake knife	2	1
Ground and pecked stone:		
Pebble hammerstone	1	3
Anvilstone	1	

Table 4. Numerical distribution of artifact types from Spring Hollow Rock Shelter, No. 3

Gingerstairs Rock Shelter No. 1. This was another small rock shelter within Palisades-Kepler State Park. The shelter was excavated in two arbitrary levels, and contained the remains of a single "pure" cultural complex. Workshop debris, consisting of flint chips, small flakes, and cores, was abundant. Midden refuse was indicated by split and burned bone fragments. A pottery pipe was recovered (fig. 81). The pipe is of the elbow type with a very slight extension or node at the front of the bowl which gives the appearance of an extension of the stem. The decoration on the bowl appears to represent a series of feathers, vertically placed, and spaced at regular intervals. The decoration on the bottom of the stem consists of two converging lines nearly parallel to the long axis of the stem. These are crossed at regular intervals by short parallel lines producing an appearance similar to a child's drawing of a railroad track. The decoration on both the bowl and the stem is carried out in extremely fine line incising.

Woodland Complexes

The distribution and numerical frequencies of the artifacts recovered are presented in table 5. The excavation levels were of irregular thickness. Level I extended from the surface to a depth of 12 inches. Level II extended from 12 to 30 inches.

Gingerstairs Rock Shelter No. 2. This shelter is also located along the Cedar River within Palisades-Kepler State Park southwest of Mount Vernon. The site seems to have been excavated as a unit, without employing vertical controls. In addition to pottery and other artifacts, the shelter contained workshop debris, split and burned bone fragments (chiefly deer), and burned fireplace rocks. The inventory of artifacts: 21 Madison Cord-Imprinted rimsherds and decorated neck and shoulder sherds; 29 Madison Cord-Imprinted body sherds; 12 Minott's Cord-Imprinted rims and other decorated sherds; 41 Minott's Cord-Imprinted body sherds; one plain sherd; 14 cordmarked body sherds (probably Spring Hollow Cord-marked); one small triangular projectile point; one large triangular projectile point; one contracting-stemmed projectile point; one large side-notched projectile point; two small triangular side-notched projectile points; eight irregular flake knives; one pebble hammerstone; and one core chopper.

In the collections of the Museum of Anthropology of the University of Michigan is a sample collection of pottery from a shelter within the Palisades-Kepler State Park. This collection is designated as having come from Palisades Rock Shelter IV. Three of the Madison Cord-Imprinted rimsherds and 67 body sherds are nearly identical in style and form to those of the rimsherds from the *Gingerstairs* collections. The particular sherds in question are extraordinarily thin, hard, and fine-textured, and the decorative variation is not duplicated exactly in any of the other sites from which the Iowa Archaeological Survey made collections. It appears safe to assume that the material in the

<i>Artifact type</i>	<i>Excavation levels</i>	
	<i>I</i>	<i>II</i>
Pottery:		
Madison Cord-Impressed		
Rim	1	7
Body		22
Minott's Cord-Impressed	10	75
Spring Hollow Plain		7
Chipped stone:		
Small triangular projectile point		2
Small triangular side-notched projectile point		2
Straight-stemmed projectile point	1	
Corner-notched projectile point	1	
Small corner-notched projectile point		1
Large ovoid knife		1
Irregular flake knife		1
Miscellaneous:		
Pottery pipe	1	

Table 5. Numerical distribution of artifact types from Gingerstairs Rock Shelter, No. 1

University of Michigan collection actually came from Gingerstairs Rock Shelter No. 2. This collection consists of the following: seven Madison Cord-Impressed rimsherds (including the three described above); 67 Madison Cord-Impressed body sherds; five Minott's Cord-Impressed body sherds; and three unclassified body sherds.

Another small sherd collection at the Museum of Anthropology is labeled "Palisades Rock Shelter V." The location given is 6 miles southwest of Mount Vernon, in a ravine close to the Cedar River. The location corresponds to that of Palisades-Kepler State Park. There is no outstanding pottery in this collection which would identify it with any one of the several rock shelters known to be located within the park. It is suspected that the sherds are from Gingerstairs Rock Shelter No. 1, but there is no certain evidence. The inventory of the collection is as follows: three Madison Cord-Impressed shoulder sherds (decorative variation is an opposed triangle motif); six Madison Cord-Impressed

body sherds; and one sherd resembling Levensen Stamped. The latter sherd is decorated with oblique lines of dentate stamp in a horizontal zone on the upper rim. Beneath this is a series of bosses punched from the exterior, under which are regularly spaced vertical zones of the ovoid stamp reminiscent of that seen in Naples Ovoid sherds from Illinois. The lip is flattened and slightly everted; the upper rim flares slightly above the row of bosses; and there appears to be a slight increase in pot diameter at the shoulder.

Minott's Rock Shelter. This shelter, located in Linn County, was excavated by Keyes and students from Cornell College. The rock shelter, and its occupant of post-Civil War years, James S. Minott, are described in a short, popular article written by Keyes (1943, pp. 1-40) for the State Historical Society of Iowa. A system of sections, 5 feet square, provided a horizontal control in the excavation. The deposits were removed in

Woodland Sites in Northeastern Iowa

arbitrary 6-inch levels within these sections and the cultural debris from each level was segregated from that found in others. The earth removed was sifted.

No description of the shelter or excavation was available beyond Keyes' statements

in the paper mentioned above. Examination of the artifacts indicated a single culture complex. Other than midden and workshop debris, pottery sherds were the most common class of remains. Except for a few fragments, the sherds represented two closely

Table 6. Numerical distribution of artifact types from Minott's Rock Shelter

<i>Artifact type</i>	<i>6-inch excavation levels</i>						
	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>	<i>V</i>	<i>VI</i>	<i>VII</i>
Pottery:							
Madison Cord-Imprinted							
Rim	28	33	31	11		6	25
Body	209	249	151	45	14		
Minott's Cord-Imprinted							
Rim	11	16	9	14	2		14
Body	95	136	60				
Spring Hollow Plain	2	9	4				
Minott's Plain	5	7	1				
Plain bodysherds	19	54	24	8	2		11
Cordmarked bodysherds	2	30	9	2			
Chipped stone:							
Small triangular projectile points	1	1					
Large triangular projectile points			1				
Triangular side-notched projectile points			1				
Ovoid projectile points				3			
Large contracting-stemmed projectile points	1						
Large corner-notched projectile points					1		
Small corner-notched projectile points			1				
Oval knives	1	1					
Lanceolate knives			1				
Planoconvex scraper	2	4					
Ribbon flake		2					
Irregular flake knife	1	6	1	2			1
Core chopper			1				
Broken projectile points				1			
Ground and pecked stone:							
Pebble hammerstone				1			
Flint hammerstone			1				
Sandstone abrader			1				
Anvilstone				1			
Ground hematite fragment		1					
Bone and shell:							
Antler flaker			4	1		1	
Notched canine tooth				1			
Perforated mussel shell			1				

Woodland
Complexes

related types. Slightly greater variation was observed in the chipped and ground stone tools but in view of the unity of the ceramic remains it was believed that all of the stone artifacts could be considered part of a single complex.

As the general description of the shelter and the objects from the period in which Minott occupied the site were covered by Keyes, no repetition of this information will be made here (*ibid.*, pp. 16-40). The upper levels (particularly I and II) contained evidence of Minott's life in the shelter. A few additional items stemming from his occupation were found in the third level of excavation. Levels from 18 to 42 inches deep contained aboriginal artifacts, including flint workshop debris, split and burned bone fragments, and shells. Keyes (*ibid.*, p. 30) estimated that the shelter contained a thousand or more shells of freshwater mussels and 8,000 bones and bone fragments. Deer bones were most common, but other species represented include beaver, woodchuck, muskrat, squirrel, cottontail, dog or wolf, fox, mink, badger, wild turkey, grouse, box turtle, and various species of ducks and geese. In contrast to the Highway Thirteen Rock Shelter of Clayton County where fish bones were abundant, only a few fish remains were found.

Keyes reported more than 1,400 pottery sherds from the shelter. Of these 1,348 are in the collection in Iowa City. The frequencies of the pottery and other artifacts are presented in table 6. The material is presented for each 6-inch level. Level I extended from the surface to a depth of 6 inches; Level II, 6 to 12 inches; Level III, 12 to 18 inches; Level IV, 18 to 24 inches; Level V, 24 to 30 inches; Level VI, 30 to 36 inches; Level VII, 36 to 42 inches. Although the deposits were rather deep, the cultural material was indicative of a single cultural complex.

Elephant Village Site. The so-called "Ele-

phant" is a large isolated bluff standing in the valley of the Upper Iowa River in the southeast quarter of Section 32, Township 100 North, Range 5 West, in northern Allamakee County. At the foot of a sheer sandstone cliff on the south side of the bluff is a small river terrace remnant, 28 feet above the floodplain. Although the area of the terrace is only an estimated 1/2 acre, it furnished an excellent habitation site for primitive peoples. Long before Orr excavated at the site, it was well known to local collectors, and several Oneota graves had been dug. The following is Orr's account of the information he was able to elicit concerning excavation of five of these:

In 1894 Mr. W. F. Dresser excavated two of a row of five graves in the south part of the terrace. In the most southerly he found a chert knife in a pot—pot No. 2 and knife No. 900 of the Orr Collection belonging to the Iowa State Historical Society. In the next grave to the north he found a pot containing a clamshell. In 1895 or 1896, the next two graves were excavated by Mr. Jason Bulman, owner of the land, without very encouraging results.

Later the remaining grave of the group was opened by Dr. J. Ratcliffe, and in it he found an effigy pipe shaped like a lizard holding its tail with all four feet, but having short animal-like ears (Orr MS., 1934, vol. I, p. 9).

Another excavation carried out at an unknown date near the graves uncovered another Oneota burial accompanied by a rectangular catlinite pipe. The pipe, according to Orr, was donated to the Chicago Natural History Museum. In 1933, a local farmer, Ed Wilde, excavated a group of Oneota graves to the east of the center of the terrace. In these he found five small pots and a catlinite pipe.

Orr's excavations for the Iowa Archaeological Survey consisted of three long

*Woodland
Sites in
Northeastern
Iowa*

<i>Artifact type</i>	<i>Excavation levels</i>	
	<i>I</i>	<i>II</i>
Pottery:		
Oneota (shell tempered)	69	15
Madison Cord-Imprinted		
Rim	9	6
Body	69	59
Lane Farm Cord-Imprinted	1	5
Lane Farm Stamped		
Plain rocker	6	4
Dentate rocker	8	4
Spring Hollow Plain	7	11
Spring Hollow Cordmarked	3	8
Levensen Stamped		3
Spring Hollow Incised	3	6
Marion Thick	7	39
Plain bodysherds		11
Cordmarked body sherds	4	
Plain surfaced sherds decorated with beveled bar punctate or punch-and-drag lines	2	3
Unclassified sherds	11	11
Chipped stone:		
Small triangular projectile points	1	
Small side-notched projectile points	1	7
Large side-notched projectile points		1
Large contracting-stemmed projectile points	2	2
Expanding-stemmed projectile points	2	4
Corner-notched projectile points	1	
Straight-stemmed projectile points	1	1
Lanceolate projectile points		1
Broken projectile points	1	10
Crude round-based knives	1	5
Large knife fragments	2	8
Planoconvex scrapers	1	2
Large planoconvex adze	1	
Ground and pecked stone:		
Full-grooved axe		1

Table 7. Numerical distribution of artifact types from Trench C, Elephant Village Site

trenches and eight smaller pits. The trenches were 5 feet wide. Trench A was 93 feet in length. Trenches B and C were 20 and 40 feet long, respectively. Notes on the excavations were very general. The Elephant exca-

vation was the first effort of the members of the Survey to study a habitation site. From observations made by both Keyes and Orr, based on reports of their conversations and on material in printed articles (Keyes, 1934,

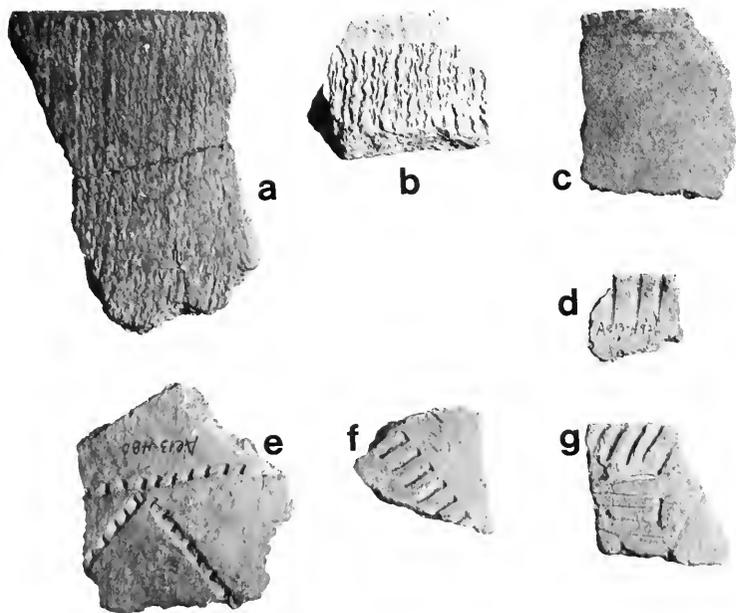
pp. 329–331; 346–347), it appears that they approached the excavation with the assumption that only two cultural groupings were in evidence in the northeastern Iowa prehistoric sites. The earliest was presumed to be Woodland, and the latest an Oneota occupation. The assumption, of course, was correct in a general way, but the possibility that time depth had existed within the Woodland was overlooked.

The Elephant was excavated in two arbitrary levels. The results present very general information for use in attempts to reconstruct a sequence of occupations. Deposits in this site were quite deep. In Trench A, cultural remains were found to a depth of 72 inches at the north end of the trench. In Trench C, the debris extended downward to a depth of 30 inches, and in Trench B, cul-

tural material was found to a depth of 40 inches.

Five skeletons were found. One, in Trench C, was encountered at a depth of 30 inches lying on a rock formation which underlay the deposits. The skeleton appeared to have been in an extended position. With it was a finely chipped ovoid knife pointed at both ends and of a type found with local Oneota burials. The remaining four were found in the smaller test pits. In Test Pit 2, an extended skeleton was found at a depth of 30 inches. Two poorly preserved skeletons, the burial positions of which are unknown, also were found in Test Pit 2. On the east side of one of these was a detached skull. A poorly preserved extended burial, accompanied by a black stone ball which lay near the feet, was found in Test Pit 3.

Figure 48. Miscellaneous potsherds from the Elephant Site (UMMA Neg. No. 12729).



Woodland
Sites in
Northeastern
Iowa

The artifacts recovered from the excavation of Trench C are presented in table 7. Level I extended from the surface to a depth of 18 inches, and Level II and 18 to 62 inches.

Trench A may have been excavated as a unit. No data on distribution of artifacts by levels was given. The artifacts from this trench included two Oneota sherds, four plain body sherds, one Madison Cord-Imprinted body sherd, one Spring Hollow Incised sherd, one sherd with punch-and-drag decoration (fig. 48e), and one plain, badly leached sherd with cord-wrapped-stick decoration applied in zig-zag design.

Trench B contained one Madison Cord-Imprinted body sherd, two plain sherds, one thick, crude sherd (probably Marion Thick), and an unclassified sherd. In the section east of Burial 140 were one large Oneota rimsherd, two plain grit-tempered sherds, one Lane Farm Stamped sherd, eight Madison Cord-Imprinted body sherds, one Madison Cord-Imprinted neck sherd, one Marion Thick body sherd, and one Spring Hollow Plain rimsherd. In the section with Burial 140 were six fragments of a small Oneota pot, seven Madison Cord-Imprinted body sherds, two plain grit-tempered sherds, and one cord-wrapped-stick, zig-zag line decorated sherd.

In October, 1955, I obtained permission of the owner of the Elephant, Earl Beardmore, of Waukon, to make limited archaeological tests on the site. Since 1934 when the Iowa Archaeological Survey excavated the site, the terrace has been reduced in size by widening the county roads along the two sides of the terrace base. On several weekends in October and November two test pits were excavated, one on the east side of Orr's Trench A and another on the west. The outlines of all the previous excavations, both those made by Orr and those made by collectors, were easily discernible. This facilitated selection of undisturbed areas. The 1955 tests were 6 feet square and each extended to a depth of 36 inches below

the terrace surface, at which depth the underlying rock formation was encountered. Artifacts and pottery were found in all but the lowest inches of the two pits.

In excavating the two tests, the intent was to obtain as much information on vertical distribution of pottery and stone artifact types as possible. The earth was removed in arbitrary 4-inch levels and was sifted through a ¼-inch mesh screen. The material collected from one 4-inch level was segregated from that collected from other levels. In both Levels IV and V (12 to 16 inches and 16 to 20 inches, respectively) burned sandstone and limestone rocks covered extensive areas. Little charcoal and no split or burned bones were associated with these rocks, but judging from their arrangement, they appeared to represent remains of fireplaces. Pottery was found from the surface to the bottom of the excavation. Most fragments were small, ranging from about ¼ inch to an inch square. Most of these fragments could not be classified. Flint chips were found in moderate quantities throughout the deposits, but few stone artifacts were found.

As the tests were limited in area, the excavations did not result in the duplication of all the pottery types found by Orr. The tests were disappointing in that they did not indicate the relationships of some types as had been hoped at the outset of the work. Only general conclusions could be drawn from the results, and because of the small size of the sample these should be used with reservations. Madison Cord-Imprinted and Oneota pottery seem to be characteristic of the upper 16 to 18 inches of the deposits, and Spring Hollow Incised sherds were more common in the middle and lower levels. This paralleled the information derived from Orr's work. In the 1955 tests none of the cord-wrapped-stick or bar punctate sherds were found. Their positions relative to the other styles were not clarified. The single Madison Cord-Imprinted rim found in Test I, between the depths of 28 and 32 inches,

was lying in an open rodent burrow. The burrow originated outside the area tested and descended diagonally through the lowest four levels of the pit.

The results of the tests are summarized in tables 8 and 9. The depth of the several 4-inch excavation levels are as follows: Level I, surface to 4 inches; Level II, 4 to 8 inches;

Level III, 8 to 12 inches; Level IV, 12 to 16 inches; Level V, 16 to 20 inches; Level VI, 20 to 24 inches; Level VII, 24 to 28 inches; Level VIII, 28 to 32 inches; and Level IX, 32 to 36 inches.

Although the 1955 tests did not completely accomplish the desired results, several worthwhile bits of general information

Table 8. Numerical distribution of artifact types from 1955 Test I at the Elephant Site

Artifact type	4-inch excavation levels								
	I	II	III	IV	V	VI	VII	VIII	IX
Pottery:									
Madison Cord-Imprinted									
Rim			1	1				1	
Body	2	10	10	4	4	4	2	4	1
Oneota (shell-tempered)		1	2	1	1	1	1		1
Lane Farm Stamped				2			1	1	
Marion Thick								1	
Spring Hollow Incised				2	1	1		1	
Spring Hollow Cordmarked		2		2	2	7	1		
Plain bodysherds	1				2				
Small reed punctates on plain surface								1	
Unclassified	10	7	16	15	8	14	17		
Chipped stone:									
Side-notched projectile points								1	
Corner-notched projectile points			1					1	
Round-based knives							1		
Flat-based knives							1		
Flake knife			2						

Table 9. Numerical distribution of artifact types from 1955 Test II at the Elephant Site

Artifact type	4-inch excavation levels							
	I	II	III	IV	V	VI	VII	VIII
Pottery:								
Madison Cord-Imprinted								
Rim	3	1	2	2				
Body		13	8	9				1
Oneota	4	7	3	2				
Marion Thick		1	1		1			
Spring Hollow Incised		1		1	1			
Spring Hollow Cordmarked					2			

Woodland
Sites in
Northeastern
Iowa

are of interest. The amount of material recovered compared to the volume of earth removed indicates that the site was never heavily occupied. The great depth of deposit reported by Orr evidently was due not to heavy and sustained occupation but to the steady weathering of the soft sandstone cliff above the terrace.

Secondly, no stratification was noted. The profiles cut on the walls of the two test pits showed homogenous dark-grey soil mixed with sand from top to bottom.

Finally, the soft, sandy deposits had been subjected to most thorough burrowing by small animals. In both pits one or more such burrows could be traced from top to bottom as the excavation progressed. Open burrows were found in both pits. This condition probably resulted in mixture of the cultural remains.

The Elephant seems to have been used by Woodland peoples as a habitation site and by Oneota peoples for burial. The quantity of Oneota village material was very small, whereas Oneota graves were common.

Highway Thirteen Rock Shelter. The shelter is located in the southwest quarter of the northeast quarter of Section 3, Township 95 North, Range 3 West, in Clayton County, situated on the right-of-way of Iowa Primary Highway Thirteen in the face of a high bluff overlooking the Mississippi River. Originally the site was much larger according to the statements of local inhabitants.

In constructing the highway, a certain amount of rock and talus slope along the face of the bluffs bordering the river was removed. The main section of the shelter was removed by blasting. The part remaining consisted of an enlarged crevice in the soft St. Peter's Sandstone, varying in width between 6 and 4 feet and a little more than 15 feet in length. Deposits within the crevice ranged between 36 and 40 inches in depth. Some deposits containing cultural material still remain outside the crevice clinging to

the wall of the nearly perpendicular cliff. Part of a flexed skeleton was found in the top part of this deposit, but the entire area outside the crevice could not be excavated because of the rocks which evidently were loosened when the main shelter was removed and fell on the remains of the shelter floor. The expense involved in removing this material prohibits further study outside the enlarged crevice.

The crevice itself was excavated in arbitrary 6-inch levels and the contents of each were passed through a ¼-inch mesh screen. Materials from each level were kept separate, a precaution which proved unnecessary as the artifacts represented a single cultural complex.

The crevice contained evidence of fireplaces in the form of burned rocks, charcoal, ashes, and burned mammal bones. Deer was most commonly represented. Bones of fish also were found. Fish may have been prepared for cooking within the shelter, for thousands of fish scales were found in the deposits. The crevice seems to have been employed as a burial site, for human bones were scattered through the general midden debris. Nearly complete skeletons of three infants were recovered from the extremely narrow back end of the crevice. The age of these children was estimated at 2 years or under.

Numerous burned human skull fragments were found in the area of one fireplace near the back of the crevice. The reasons for this were not immediately apparent. However, at the bottom of the deposits, lying at the top of a layer of clean sand which had weathered from the surrounding rock, the occipital region of a skull was found along with a few other skeletal parts. Later, in cleaning the specimens, it was discovered that a number of the burned skull fragments fitted this occiput. With the exception of the left parietal bone and such minor bones as the styloid processes, it was possible to restore the complete skull, that of a child

about 9 years of age. It appeared that the body had been placed in the crevice as a complete skeleton, but that subsequent digging, possibly connected with burying the infants mentioned earlier, disturbed the bones. The skull may have been broken in the process. Normal shifting of the soft ashes and other debris making up the fill on the shelter floor could have eventually put parts of the skull in sufficient contact with the fireplace to account for the scorched and burned fragments fitting the occiput.

The artifact inventory was not large. Sherds were the most common items. The types were as follows: 589 body sherds of Madison Cord-Imprinted vessels, 23 rim and neck sherds of Madison Cord-Imprinted type, a sherd with cord-wrapped-stick stamping on the inner rim surface (probably Levsen Stamped), and 6 cordmarked sherds which may have come from the body of a pot of Spring Hollow Cordmarked type. Parts of a toy pot were found. This vessel had a plain surface, rounded lip, slightly flaring rim, fairly sharp shoulder break, and slightly elongate body with a rounded base. On the rim was a zig-zagged single-cord decoration. The angles of the zig-zags were slightly rounded. The paste of the pot resembled that of Madison Cord-Imprinted vessels. Other artifacts recovered include a small triangular projectile point, two expanding-stemmed projectile points, one contracting-stemmed point, one flake knife, one pebble hammerstone, two fresh-water pearl beads, and an irregular baroque pearl which was unperforated.

The Madison Cord-Imprinted sherds listed above represent parts of five different vessels. Three pots were represented by two or three sherds only. Large parts of the remaining two vessels were recovered. Two major decorative variations were apparent in the five vessels. One involved very short vertical cords on the upper rim at the lip, followed by evenly spaced horizontal parallel cord impressions, which, in turn, were

banded at the shoulder by a series of inverted triangles pendant to the horizontal cords (fig. 90k). This decorative motif was not common in collections of Madison Cord-Imprinted sherds, but appeared to be reasonably common in Clayton, Allamakee, and Winnesheik Counties.

The second pot was decorated as follows: the lip was very slightly notched with impressions of short, vertical single cords overlapping the lip onto the inner rim. On the exterior these were followed by parallel, horizontal single-cord impressions arranged in pairs down over the neck. This zone was bounded at the shoulder by a series of punctate-like impressions produced by pressing cord knots into the clay. Another rim was decorated with evenly spaced, single-cord, parallel horizontals on the neck without the zone of vertical cords on the upper rim below the lip. The lower zone at the shoulder was unknown since the sherd was broken at that point. Another rim was decorated with evenly spaced parallel horizontal cords on the exterior neck, a plain zone above these, and bounded at the shoulder by a zone of reed punctates which encircled the neck (fig. 89e). The fourth Madison Cord-Imprinted pot was represented by four shoulder sherds; the decorative treatment is unknown.

Although the inventory of artifacts from the crevice was small, it was significant, for it displayed a degree of similarity to the remains from the Minott's, Gingerstairs, and Spring Hollow Shelters. It was also believed to represent a partial village complex of peoples who employed effigy mounds for burial of some of their dead.

Nelson Dewey Site. Immediately north of Cassville, Wis., on a broad sand and gravel terrace bordering the Mississippi River opposite the former home of Wisconsin's first governor, Nelson Dewey, is a large prehistoric site. It is situated on a low rise along the bank of the river. Its extent is unknown, although reports of local people indicated

*Woodland
Sites in
Northeastern
Iowa*

that it may extend for 1/2 mile or more southward along the Mississippi River. Although it is not within the State of Iowa, it occupies a position almost exactly opposite the mouth of the Turkey River in southern Clayton County, Iowa, and is included here since excavations indicated a significant pottery relationship.

In September and October of 1955, I conducted a limited salvage excavation on the site. Three tests were made in the cornfield near the riverbank west of the Nelson Dewey house. The largest was a trench 5 feet in length in an area where Madison Cord-Imprinted body sherds and pottery of the Spring Hollow Cordmarked type appeared on the surface. Test 2 was a trench 5 feet wide and 10 feet long, 30 feet north of Test 1 in an area where several varieties of grit-tempered pottery had been found on the surface, including sherds resembling Spring Hollow Incised. The deposits in Test 2 were very shallow and the test was therefore abandoned. Test 3 was located about 30 feet south of Test 1. Like Test 2, deposits in this area were very shallow. An area 5 feet

square was excavated, following which the pit was filled in. Excavation in all trenches was carried out in arbitrary 4-inch levels.

The deposits in Test 1 contained charcoal, burned limestone fragments, a very few split deer bones, fish bones, pottery sherds, small fragments of flint workshop debris, and a few chipped stone artifacts. The burned limestone was found in small concentrations. In one area a cluster of small limestone rocks was accompanied by charcoal lumps and the vertebral column of a small fish. A few pieces of deer bone were found in the same area.

Beneath the limestone and the fish bones was a contracting-stemmed projectile point, and in the area immediately surrounding the rocks were several sherds of Spring Hollow Cordmarked pottery. Other small piles of limestone and stamp-decorated pottery were found within this same level, 2 to 3 feet from the feature described above. The limestone fragments were too small to have represented fireplaces. However, all showed evidence of having been subjected to fire, and may be vestiges of cooking by the stone-

Table 10. Numerical distribution of artifact types from Test I, Nelson Dewey Site

<i>Artifact type</i>	<i>4-inch excavation levels</i>			
	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>
Pottery:				
Spring Hollow Cordmarked	15	90	4	14
Spring Hollow Plain	10	51	3	2
Levensen Stamped	1	18	13	3
Spring Hollow Incised	2	1		
Thick cordmarked sherds			4	1
Plain thick reed punctated sherd			1	
Madison Cord-Imprinted bodysherds	15			
Chipped stone:				
Contracting-stemmed projectile points			1	
Corner-notched projectile points			1	
Ovoid biconvex bunt projectile points				1
Elongate core with battered edges				1
Quartzite hammerstone				1

boiling method. Isolated fired limestone rocks or small heaps of such rocks were noted in Tests 2 and 3. No bones accompanied these. The artifacts recovered in Test 1 are listed in table 10.

The excavation in Test 1 was revealing of an important association. Levensen Stamped pottery was relatively common in village sites in northeastern Iowa and southwestern Wisconsin. A rim of this type was found with Madison Cord-Imprinted pottery in the Highway Thirteen Rock Shelter. Several sherds were found in the middle levels of Spring Hollow Rock Shelter No. 1. Paint Rock Mound 1 contained a part of a pot of the type. Certain characteristics of the cord-wrapped-stick decorated variety of this pottery indicated a relationship to Spring Hollow Cordmarked. Excavations at the Nelson Dewey site provided evidence indicating contemporaneity of the two types. Evidence for this association was best in Section 2 of Test 1, where the Spring Hollow Cordmarked sherds were associated with burned limestone, fish bones, a contracting-stemmed projectile point, and charcoal fragments. Some 3 feet from the limestone fragments, and on the same level, was a rimsherd of the cord-wrapped-stick decorated variation of Levensen Stamped. Other sherds of the same type were found in this area as well. Throughout the remainder of the Test 1 excavation other associations of the two types were noted. These occurrences, coupled with basic similarity of the two types in paste and tempering characteristics, suggest that they were contemporaneous at this site.

Evidence for the position of Madison Cord-Imprinted and Spring Hollow Incised was inconclusive, however. Madison Cord-Imprinted sherds appeared only in the plow zone and the upper limits of Level I. The same situation was noted for Spring Hollow Incised which, at the Elephant site and in the Linn County rock shelters, appeared to precede Madison Cord-Imprinted.

Other associations suggested in the Nelson Dewey Site included that of the contracting-stemmed projectile point type with Spring Hollow Cordmarked pottery. This had been indicated previously in other sites where Spring Hollow Cordmarked, Madison Cord-Imprinted, and contracting-stemmed projectile points were found together. The occurrence in the Nelson Dewey Site tended to substantiate this association. It is also possible that there is a relationship between Spring Hollow pottery and rectilinear decorative motif applied in dentate stamping. This was noted also in the Levensen Rock Shelter.

Waterville Rock Shelter. The Waterville Rock Shelter is located on a small, nameless branch of Paint Creek in the northeast quarter of the northwest quarter of Section 23, Township 97 North, Range 4 West in Allamakee County. The topography of the ravine is characteristic of the Paint Creek drainage, i.e., a deep valley lined on either side by precipitous rock cliffs with steep talus slopes at their bases. Shallow caves similar to the Waterville shelter are common in the limestone formation which outcrops along Paint Creek and its tributaries. The shelter was excavated by Orr and a work crew supplied by the FERA in November and December of 1934. Although the site contained a great amount of material, it was not ideal for excavation. Orr noted extensive disturbance, especially in the upper foot of the deposits, wrought by curious people and local collectors (Orr MS., 1934, vol. I, p. 91).

The Iowa Archaeological Survey's excavation was made as a unit with no formal vertical control. The earth removed was sifted. The deposits consisted of loose ash and dust mixed with cultural debris and limestone fragments from the roof of the shelter. Since the shelter was not excavated in arbitrary levels, the artifacts in the 2 to 3 feet of deposits must be treated in the same manner as surface collections. Repre-

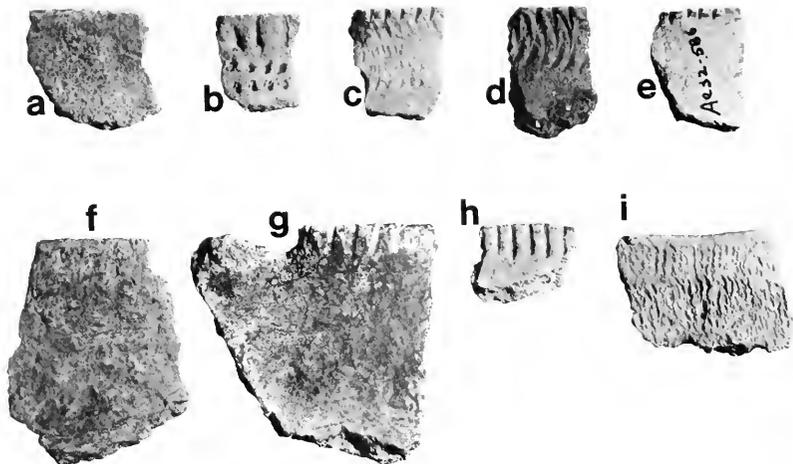


Figure 49. Potsherds from the Waterville Rock Shelter.

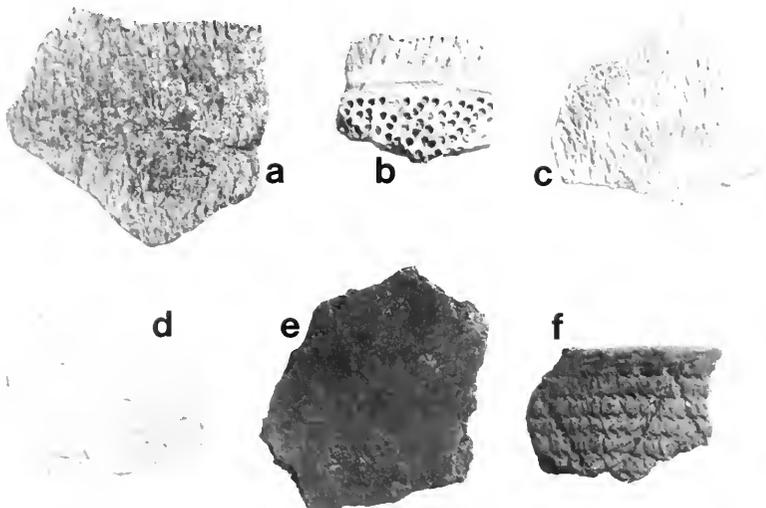


Figure 50. Potsherds from the Waterville Rock Shelter (UMMA Neg. No. 12743).

<i>Artifact type</i>	<i>Frequency</i>
Pottery:	
Oneota	13
Madison Cord-Imprinted	
Rim	31
Body	201
Cordmarked bodysherds	44
Mill Creek	8
Lane Farm Stamped	14
Cordmarked sherds with dentate or plain rocker over cordmarks	2
Sherd with incised, dentate-filled zone	1
Spring Hollow Plain	8
Plain sherd with plain rocker on upper rim producing deep notch at lip	1
Sherd with upper rim notch and incised zone filled with reed punctates	1
Lane Farm Cord-Imprinted	3
Sherds brushed discontinuously with cord-wrapped stick	14
Chipped stone:	
Small triangular projectile points	8
Triangular side-notched projectile points	2
Large side-notched projectile points	1
Straight-stemmed projectile points	1
Corner-notched projectile points	4
Ground and pecked stone:	
Ground hematite lump	2
Bone:	
Bone splinter awls	3
Battered antler tip	5
Miscellaneous:	
Pottery elbow pipestem	1

Table 11. Artifact inventory of the Waterville Rock Shelter

sentative potsherds are shown in figures 49 and 50. The artifact inventory is given in table 11.

Bones of deer, turtle, and several unidentified species of birds were found. Fresh-water mussel shells were also common.

Sixteen Rock Shelter. The Sixteen Rock Shelter is located in the Oneota Limestone formation which outcrops along the bluff on the north bank of the Yellow River in the southwest quarter of Section 15, Township 96 North, Range 4 West, in Allamakee County. The shelter is large, measuring

nearly 55 feet wide at the opening, and 35 feet deep. It is situated about 100 feet up from the riverbank at the top of a gentle talus slope. The shelter was excavated with the help of FERA labor in January 1935. The deposits were excavated as a unit and the earth removed was sifted. Cultural debris extended to a depth of 32 to 34 inches. Similar to the Waterville shelter, the upper limits of the deposits had been disturbed by digging on the part of curious people. With the exception of Orr's observation that Oneota pottery was confined to the top 8 inches of the excavation, no data concerning rela-

*Woodland
Sites in
Northeastern
Iowa*

tive depths of the artifacts were available (*ibid.*, p. 101). Hence, as in the Waterville shelter, the material found must be treated as a surface collection.

On the basis of comparative typology it was evident from the list of materials that the human occupation of the shelter had covered a long period of years. Several types of pottery recovered indicated at least three successive occupations. The artifacts recovered are listed in table 12.

Levsen Rock Shelter. This shelter is located on the farm of August Levsen of Canton, Iowa. It is located in the northeast quarter of the southeast quarter of Section 19,

Township 85 North, Range 1 East, in Jackson County. The site is large, approximately the size of the Sixteen Rock Shelter, and originally contained deep deposits. The shelter is located in a limestone outcrop at the top of a gradual slope rising from the narrow, sheltered valley of a small, nameless tributary of the South Fork of the Maquoketa River. It was excavated by Paul Sagers of Emeline, Iowa.

The deposit within the shelter was composed of loose, dusty ashes. Sagers found flint chips, split and burned bones, fire-cracked limestone fragments, and artifacts of a very wide variety of types. Since the material was loose and dusty, it was difficult

Table 12. Artifact inventory of the Sixteen Rock Shelter

<i>Artifact type</i>	<i>Frequency</i>
Pottery:	
Oneota	26
Mill Creek	1
Madison Cord-Imprinted	
Rim	20
Body	89
Lane Farm Stamped	1
Rim with plain rocker on upper rim producing deep notch	3
Naples Stamped	1
Sherds with dentate stamped zone; zone filled with dentate	2
Spring Hollow Plain	4
Spring Hollow Cordmarked	1
Chipped stone:	
Small triangular projectile points	7
Small triangular side-notched projectile points	7
Straight-stemmed projectile points	1
Contracting-stemmed projectile points	1
Large crude leaf-shaped knives	3
Crude knife fragments	16
Irregular flake knives	12
Spokeshaves	3
Planoconvex scrapers	5
Crude core chopper	1
Bone:	
Bone splinter awl	1
Antler flaker	2
Deer scapula hoe	3

Woodland
Complexes

<i>Artifact type</i>	<i>Frequency</i>
Foot 1	
Madison Cord-Imprinted pottery	2
Neteler Stamped pottery	2
Foot 2	
Naples Stamped (dentate variety)	2
Naples Stamped (cord-wrapped-stick variety)	2
Spring Hollow Cordmarked	2
Deer scapula awl	1
Split bird bone awl	1
Cut antler fragment	1
Foot 3	
Naples Stamped (dentate variety)	1
Naples Stamped (cord-wrapped-stick variety)	2
Spring Hollow Plain	1
Spring Hollow Cordmarked	1
Punctate triangles on rim	1
Punctate filled zone on rim and neck	1
Bone splinter awls	2
Bird bone awl	1
Deer cannon-bone awl	1
Deer ulna awl	1
Foot 4	
Naples Stamped (dentate variety)	1
Rim sherd with cordmarked surface and bosses	1
Rim sherd with punctate triangles	1
Bone splinter awl	2
Antler drift	1
Foot 5 or lower	
Havana zoned	1
Elk cannon-bone scraper or flesher	1

Table 13. Inventory of artifacts from the Levens Rock Shelter on which depths were measured

to excavate. According to Sagers, the looseness of the material made it impossible to maintain profiles or arbitrary excavation levels. In lieu of these, he measured the depth of the major artifacts, pottery rimsherds, and decorated sherds. A complete inventory of the pottery from the shelter was not available, but a large sample was at my disposal for examination. This, coupled with data on the shelter gathered by Keyes, permitted a general reconstruction of the

shelter's several occupations on the basis of typology. The artifacts for which information concerning depth within the deposits was provided are listed in table 13 and are arranged according to the foot levels from which they derived. The levels are measured from the surface downward. The information presented in table 13 is derived in part from the personal study of the Sagers Collection and in part from Keyes' notes.

This information may be supplemented by

*Woodland
Sites in
Northeastern
Iowa*



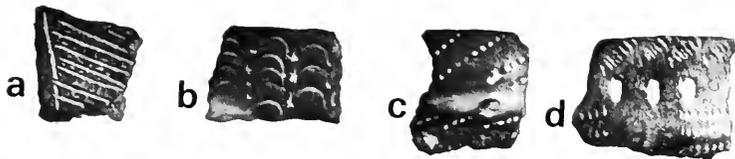
Figure 51. Spring Hollow Plain Sherd from Levsen Rock Shelter (UMMA Neg. No. 12719).

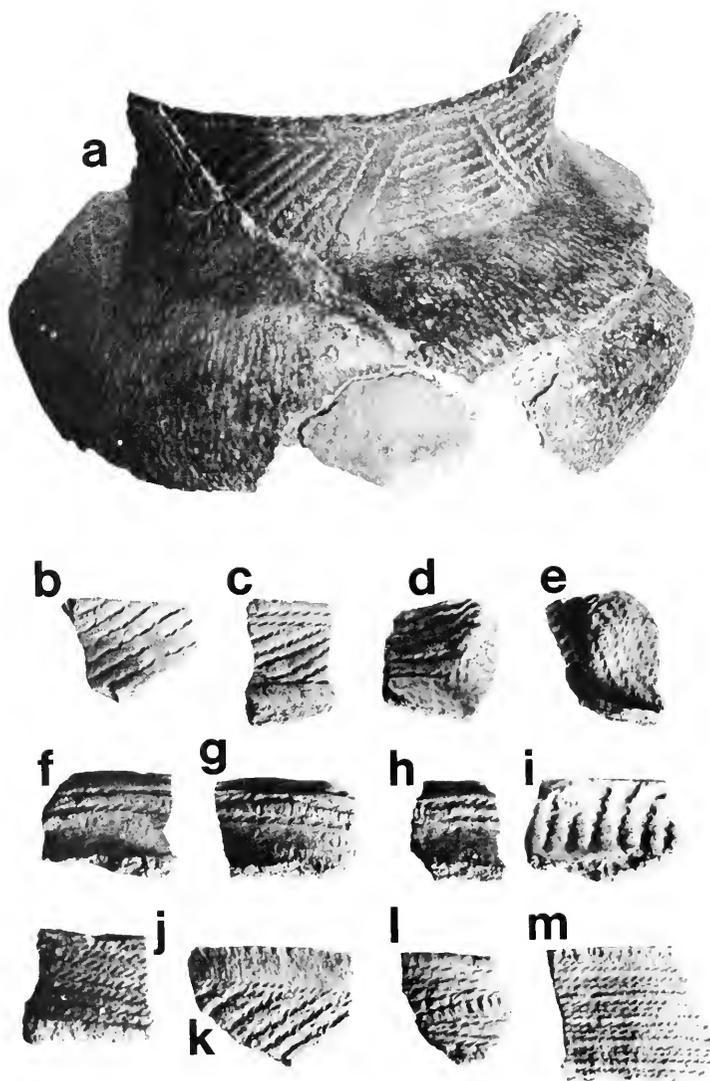
Keyes' observations, available in notes accompanying his collection, and in others accompanying photographs Keyes supplied to the University of Michigan Museum of Anthropology. Keyes divided the shelter into an upper and lower component. In the upper component he included Madison Cord-Imprinted and Spring Hollow pottery types (fig. 51). The lower included several variations of Naples Stamped, Havana Zoned, and Havana Cordmarked. This sequence apparently was based on conversation with Sagers, coupled with several visits to the shelter in his company during which limited excavations were made. An inventory of the artifacts found by Sagers is presented in table 14.

Crabtown Rock Shelter. The location of this shelter was given as about 3 miles northeast of Emeline, Iowa, near the village of Crab-

town. This would place the shelter in Section 14, Township 85 North, Range 1 East, in Jackson County. The shelter, located under a limestone ledge, was small and shallow. According to Sagers, it had been partially looted before he had seen it. However, the deposits it contained were not deep; the greatest depth of cultural debris was 18 inches. The shelter was therefore treated as a single cultural unit, and was excavated without regard to relative depths of the materials recovered. The deposits were composed of dry ashes mixed with other evidence of aboriginal occupation in the form of split and scorched animal bones, flint chips, cores, large flakes of flint, and artifacts. The majority of the bones found were deer.

Sagers' assumption that the shelter was a single occupation site was not far from correct. Most of the remains consisted of Madi-





Woodland
Complexes

Figure 53. Pottery from the Mouse Hollow Rock Shelter
(UMMA Neg. No. 12731).

son Cord-Imprinted pottery, and the small amount of stone work was representative of artifact types elsewhere associated with this pottery type. Sherds of Spring Hollow Cord-marked and Spring Hollow Plain pottery were found. These have been associated with Madison Cord-Imprinted in other sites. The remainder of the ceramic remains was divided between Naples Stamped, Havana Cordmarked, and Black Sand Incised. One additional sherd was covered with plain rocker stamping and resembled Lane Farm Stamped. A complete inventory of the shelter's contents is included in table 14.

Mouse Hollow Rock Shelter. This was another small shelter in the vicinity of Emeline. The deposits were said to have been shallow as in the Crabtown shelter. Like the Crabtown and Levensen shelters, the deposits consisted of loose ash with mixed split bone fragments, workshop debris, and artifacts (figs. 52 and 53). Although the deposits were shallow, the ceramic remains again were indicative of a series of occupations. A pottery type appeared in this shelter which was not represented in collections from other sites in northeastern Iowa. This was a group of shell-tempered sherds with wide-line incis-

Table 14. Inventory of artifacts from three Jackson County sites

<i>Artifact type</i>	<i>Sites</i>		
	<i>Levensen</i>	<i>Mouse Hollow</i>	<i>Crabtown</i>
Pottery:			
Madison Cord-Imprinted			
Rim	136	11	11
Body	503		99
Single-cord decorated, collared rim sherds		3	
Single-cord decorated pot with squared orifice with nodes on outer rim		12	
Ramey Incised		18	
Spring Hollow Plain	169	13	28
Spring Hollow Cordmarked			
Rim	5	5	18
Body	1,027		
Havana Cordmarked			
Rim	16		16
Body	1,527		
Plain sherd with bosses on upper rim		1	
Naples Stamped	64		4
Levensen Stamped	21	1	
Lane Farm Stamped	28		1
Black Sand Incised	2	3	3
Havana Zoned	23		
Neteler Stamped	3		
Naples Stamped (ovoid variety)	6		
Fettie Incised	3		3
Plain surfaced sherd with annular punctates on exterior surface		1	
Plain surfaced sherd with semicircular punctates on exterior		1	

*Woodland
Sites in
Northeastern
Iowa*

ing in rectilinear and curvilinear designs and a highly polished surface. The sherds closely resembled the type Ramey Incised of the Cahokia, Old Village Complex (Griffin,

1949, p. 51). Another group not represented elsewhere was grit-tempered, with collared rims and single-cord decoration, and rims with raised "points," also thickened on the

Table 14. Inventory of artifacts from three Jackson County sites (continued)

<i>Artifact type</i>	<i>Sites</i>		
	<i>Levsen</i>	<i>Mouse Hollow</i>	<i>Crabtown</i>
Chipped stone:			
Small triangular projectile points	3	50	
Large triangular projectile points	9	5	1
Small triangular side-notched projectile points	3	40	
Broken small triangular projectile points		26	
Small corner-notched projectile points	14	7	1
Small expanding-stemmed projectile points	13		
Large expanding-stemmed projectile points	15	13	
Corner-notched projectile points	8	3	
Straight-stemmed projectile points	6	4	
Contracting stemmed projectile points	2	6	
Side-notched projectile points	12	2	
Ovoid projectile points	4	3	3
Lanceolate projectile points	5	1	
Corner-notched on one side only projectile points	1		
Broken projectile points	16		
Round-based knives		8	1
Broken knives			1
Expanding-base drill	4	8	
Large crude scraper	1		2
Oval scraper		2	
Planoconvex scraper		11	
Chipped stone celt		1	
Chipped stone adze		1	
Ribbon flake		7	
Core chopper	2		
Irregular flake knife			1
Ground and pecked stone:			
Anvilstone	2	2	
Smoothed river pebble	1	1	
Notched sandstone fragment	1		
Sandstone abrader		1	
Hammerstone fragment		1	
Stone ball fragment		1	
Three-quarter grooved axe		1	
Limestone boatstone		1	
Broken rectangular two-hole gorget	1		
Faceted hematite lump	1		
Copper awl	1		
Polished stones	1		

Woodland
Complexes

MISCELLANEOUS SITES IN
JACKSON COUNTY

In addition to the larger shelters described above, the Sagers Collection contained material from a number of smaller shelters and from the surface of several open sites. The shelters are said to have been very small, many of them only a few feet in width and depth. The amounts of material contained in them were likewise small. Each contained evidence of one or two occupations of short

exterior at each point by the addition of a node. These were decorated with single cords in a manner similar to that of a series of collared rims. The sherds closely resembled the collared and noded pottery found in Wisconsin sites, notably Aztalan (Barrett, 1933, pp. 315-322).

On comparative typological grounds, the remainder of the pottery from the Mouse Hollow Shelter could be assigned to general time horizons only, or to complexes represented in table 14.

Table 14. Inventory of artifacts from three Jackson County sites (continued)

Artifact type	Sites		
	Levensen	Mouse Hollow	Crabtown
Bone and shell:			
Bone splinter awl	35	2	
Deer scapula awl	8	2	
Deer cannon-bone awl	2		
Raccoon splanchnic awl	1		
Bird-bone awl	6		
Bone awls (bone type unknown)	3		
Split bone needle	3		
Polished scapula fragment	1		
Polished turtle scapula	1		
Polished bird-bone tube	3		
Bird-bone whistle	1		
Rounded antler fragment	1		
Antler drift	1	1	
Socketed antler tip projectile point	3		
Polished antler tine	1		
Cut antler tip	3		
Antler flaker		1	
Antler tip awl		3	
Grooved, notched and incised antler fragment perforated around circumference through area between grooves	1		
Unperforated bear canines	4		
Notched and hollowed deer phalanges	5		
Elk cannon-bone flesher or scraper	1		
Clam shell spoon	5	1	
Cut shell fragment	1		
Polished snail shell	1		
Miscellaneous:			
Pottery pipe fragment	1	2	Woodland
Punctated pottery lump	1		Sites in
Sandstone tablet fragment		1	Northeastern Iowa

duration.

The Jeffrey Edwards Creek Rock Shelter contained two large sherds of a Spring Hollow Incised pot, 16 sherds of a Lane Farm Cord-Imprinted vessel, two small triangular projectile points, two large side-notched projectile points, and three large contract-ing-stemmed projectile points. Other occupa-tional debris included flint chips, split bone fragments, and flint cores.

The Bolling Pasture site, located near the Sagers farm, contained six Morton Incised sherds and one large thick cordmarked sherd which was probably Havana Cordmarked.

A small unnamed rock shelter was located in the southeast quarter of the southeast quarter of Section 17, Township 85 North, Range 2 East. This shelter was said to be little larger than a crevice in the limestone formation. It contained 38 Madison Cord-Imprinted sherds, 3 Naples Stamped sherds, 1 Spring Hollow Incised sherd, and 11 sherds of plain grit-tempered pottery (probably Minott's Plain). There were also 26 cordmarked sherds bearing a decoration consisting of punctates applied with a round reed, the zones of which were separated by wide incised lines. These sherds were probably related to Spring Hollow Incised. Stone material in the shelter was as follows: two scraper fragments, a flake knife made from a ribbon flake, a projectile point tip, and the base of a lanceolate concave-based point resembling those found in Graham Cave in Missouri (Logan, 1952a, p. 27, pl. IV, 31). Flint workshop debris was also found.

The punctated and incised sherds represented a pottery variation not previously noted in northeastern Iowa sites. The temper of these sherds was fine crushed rock, probably granite or similar stone. The paste was fine, compact, homogeneous, and with a hardness of 2.5 to 3.0. Color varied between light orange and light yellow, or buff. The cordmarked surface had been somewhat smoothed, producing wide spaces between the various cords which crisscrossed and

overlapped. These sherds were not thick in comparison to Naples pottery or other Havana Ware types. The average thickness for the sample was between 0.5 and 0.7 centimeters. Decoration was carried out in the style described above.

Decorative motifs could not be reconstructed from the sherds available, but rectilinear and curvilinear designs were suggested by the fragments studied. Affiliations of these sherds were unknown beyond the probability that they were related to Spring Hollow Incised. Paste and temper characteristics, coupled with the punctate and incised decorative style and certain attributes of form indicate affiliation with the stamped, punctated, and incised sherds of Middle Woodland.

Another small rock shelter similar to the one described above was the Pine Run Rock Shelter. It contained two sherds of Madison Cord-Imprinted pottery, five Spring Hollow Plain sherds, seven Levens Stamped sherds, and one broken side-notched projectile point resembling the Black Sand Notched type of central Illinois, Missouri, and Wisconsin (Scully, 1951, p. 10). The shelter also contained two human bone fragments and split animal bones.

A large fragment of a pot decorated with incising and punctates over a cordmarked surface was found in the southeast quarter of the southwest quarter of Section 36, Township 85 North, Range 5 East. The decoration had been placed in zones on the sherd. Immediately below the everted lip is a line of bosses punched from the interior and encircling the rim horizontally. Below them is an incised zone. Within the zone are cord-wrapped-stick impressions placed with longitudinal axes parallel to the vessel rim. These were placed haphazardly on the surface of the sherd. This zone of cord-wrapped-stick impressions is separated from a plain zone by sloppily incised lines, two of which are rectilinear and one curvilinear. The interior surface of the everted lip was



Figure 54. Lake Michigan Ware potsherd from the Verne Hute Rock Shelter (UMMA Neg. No. 12730).

notched lightly with cord-wrapped-stick impressions placed with long axes vertical to the line of the orifice. Four more incised-over-cordmarked sherds are present in the collection. As on other specimens, the decoration had been placed upon the upper part of the vessel and consists of the usual chevrons. In the case of one sherd, the chevron appears to be scribed by two parallel lines. The space between the lines is filled with incised crosshatches.

A complete incised-over-cordmarked decorated pot was also part of the Sagers Collection. Decoration consisted of horizontal incised lines on the upper rim. Beneath these are bosses punched from the exterior. Another zone of horizontal lines was placed below the zone of bosses, and pendant to these are oblique lines spaced at regular intervals around the vessel. The tempering of this pot was finely crushed granite rock. The paste is medium fine and soft (hardness about 2.5). The color varies between dark gray and dull yellow ocher. The rim flares

slightly above the bosses and the lip is slightly everted. The pot expands slightly at the shoulder into an elongate body with a pointed base.

The Sagers Collection also contained material from a small rock shelter on the Verne Hute farm. This collection consisted of two Havana Cordmarked sherds, one Naples Stamped rimsherd, one incised-over-cordmarked sherd, one Spring Hollow Plain sherd, one plain sherd with fine line incised decoration in a crosshatch motif on the upper part of the vessel, and four sherds of a large single-cord decorated vessel with squared orifice. This vessel also has rim points at the angles of the squared opening and is noded on the exterior rim below the points. The single-cord decoration consists of a series of opposed triangles around the neck of the pot. The apexes of these triangles were placed so as to coincide with the rim points and nodes (fig. 54).

The Clay Mills Rock Shelter, another site from which Sagers had made small collec-

tions, contained 25 Naples Stamped sherds, 24 Havana Cordmarked sherds, and 2 sherds of Madison Cord-Imprinted type.

The pottery collections from Jackson County represent a nearly full chronological range on the basis of comparison with the sequence of pottery types described for Illinois. The Jackson County ceramics seem to include almost every combination of this material known in central Illinois. However, this is not surprising in view of the proximity of Jackson County to the Illinois area where extensive work has been done. The materials from Jackson and Linn Counties seem to resemble each other rather closely. They differ in minor details from collections from Allamakee and Clayton Counties.

MISCELLANEOUS HABITATION SITE DATA

Small surface collections recorded in the Keyes Collection or in the collections of Effigy Mounds National Monument were of sufficient importance in content to be listed here. That from the "High Bank" site, 1 mile above the mouth of the Harpers Ferry Channel of the Mississippi River, in Crawford County, Wis., was described in a short publication by Ellison Orr (1927, pp. 225-230). The collection included five thick, coarse cordmarked body sherds, one Naples Stamped sherd, two sherds with fingernail punctates over a cordmarked surface (probably variations of Spring Hollow Incised), three Spring Hollow Incised sherds, four corner-notched projectile points, one expanding-stemmed projectile point, and three crude planoconvex scrapers.

At the south end of the Prairie du Chien terrace near the mouth of the Wisconsin River is a mound group associated with remains of what may have been an extensive prehistoric campsite. The mound group was noted on Cyrus Thomas' plat of the southwest part of Crawford County (1894, fig. 14, p. 53). Most of the mounds have been de-

stroyed by cultivation. The village material extends north of the mounds for about a quarter of a mile.

A surface collection from this site contained the following: three sherds punctated over a cordmarked surface, seven Marion Thick sherds, four Spring Hollow Plain sherds, eight Spring Hollow Cordmarked sherds, four Madison Cord-Imprinted body sherds, one Madison Cord-Imprinted sherd, one Lane Farm Cord-Imprinted sherd, seven unclassified cordmarked sherds, one irregular flake knife, one corner-notched projectile point, one side-notched projectile point, two broken projectile points, one planoconvex scraper, and one gunflint. The sherds of a nearly complete pot were also found. This pot was interesting in that the rim and neck decoration more closely resembles that of Lane Farm Cord-Imprinted than that of Madison Cord-Imprinted. However, the body treatment is typical of Spring Hollow Cordmarked. On several body sherds, irregular areas of dentate rocker stamping had been placed over the cordmarked surface. Workshop debris was common and a mussel-shell cache was found near the north end of the site.

Extensive village deposits were once visible on the Knight site, at the north end of the Prairie du Chien city limits. Surface collections consisted of four cordmarked body sherds, two Madison Cord-Imprinted sherds, one crude planoconvex scraper, one crude biconvex scraper, one small triangular projectile point, and one large ovoid knife.

There is a good deal of evidence of prehistoric habitation of the islands in the Mississippi River in the McGregor, Iowa, and Prairie du Chien, Wis., locality. Numerous collections from the banks of the islands were reported to me. On an island off the shore of Big Lake, a sheltered backwater of the Mississippi about a mile north of the bridge crossing the river from Prairie du Chien to Marquette, Iowa, is a site containing indications of successive occupations

over a long period. Along a narrow beach on the west side of the island, cultural material has been picked up which washed from a low bank bordering the beach. The following artifacts were found: two Havana Zoned sherds, two Havana Cordmarked sherds, 12 Madison Cord-Impressed body sherds, 18 unclassified sherds, one ribbon flake knife, an ovoid knife or scraper, one ovoid scraper, one contracting-stemmed projectile point, one quartzite hammerstone, one flint hammerstone, seven lead musket balls, and two clay trade-pipe fragments.

A number of copper artifacts have been reported as isolated finds in the northeastern Iowa counties. These were recorded in notes accompanying the Keyes Collection. Three large copper spear points were reported from Allamakee County. These had long, awl-like tangs. Two similar spear points were reported from Winnesheik County. One from Clayton County was listed as having been found south of McGregor along the bank of the Mississippi River near the foot of the high bluff now called Pike's Peak. Another copper spear point, now lost, was found near Waukon Junction. A local amateur archeologist found a copper spear point with a somewhat shorter tang on the Fish Farm Site near Lansing.

Surface collections made on sites near Bluffton in Winnesheik County contained several fluted and lanceolate projectile points resembling Clovis Fluted and Plainview varieties (Krieger, 1948, pp. 118-121). A Plainview point was also found on the Paul Pufahl farm near Waukon (Logan, 1954, pp. 14-15) and a Folsom-like point was found on the Siegal farm south of McGregor. These isolated finds suggest an Early Man occupation in the northeastern Iowa region. As yet, no excavated information is available on such early material. The scattered surface finds of copper were considered indicative of an Archaic occupation similar to the Old Copper Complex of Wisconsin.

*Woodland
Sites in
Northeastern
Iowa*



The Upper Iowa River Valley. The prominent bluff in the middle distance is known as the Elephant. The Elephant Site is located at its foot.

The artifact types referred to in describing the sites of northeastern Iowa were subjected to analysis following the procedures described in the Introduction. This section summarizes the characteristics of the types defined, and presents the distributional information available for each class.

POTTERY

Marion Thick (fig. 55a-d, 92h)

This pottery type was described by Cole and Deuel (1937, pp. 48-49) as Type 6 from sites in Fulton County, Ill. It was described by Helmen (1950, p. 48) from Indiana sites, and similar types have been presented in literature on Ohio (Griffin, 1942, pp. 344-358), New York (Ritchie and MacNeish, 1949, p. 100), and Pennsylvania archeology (Mayer-Oakes, 1955, pp. 184-190). Similar pottery has also been found in Michigan (James B. Griffin, personal communication). The sample described here consists of 63 sherds derived from 3 different sites. The small collections from these sites suggest that the type was a homogeneous ceramic unit. There were no noticeable differences among the sherds over the whole of the area covered.

Method of manufacture: coiled. Temper: coarse grit. Crushed rock in fragments often exceeding 0.2 or 0.3 cm. in diameter. Texture: Coarse. Sherds were granular and

sandy. Temper showed through the vessel walls. Hardness: 2.0 to 2.5. Sherds were soft and friable. Color: yellow-orange or red-brown, but also ranges to dark-brown or gray. Interior surfaces often black. Cores colored as on exterior. Surface finish: cord-wrapped paddle, roughened on exterior. Some sherds evidently were textile impressed. Interior surfaces haphazardly smoothed. Small areas of cord marking appeared on the interior, especially on the inner rim. Decoration: none. Lip: flat. Rim: straight. Shoulder: evidently slight to no shoulder expansion. Body: probably deep jar. Base: unknown. Probably conoidal. Thickness: lip: 1.0 cm.; rim: 1.2 cm.; body: 1.2 to 1.5 cm.

Spring Hollow Incised (figs. 56, 57, 84, 91a-d, f, g, 95c, f)

Small quantities of sherds were decorated with combinations of incised lines, punctates, and bosses applied over a cordmarked surface. These features indicate the possibility of a relationship to the Black Sand Incised, Morton Incised, and Sister Creeks Punctated types described and named in Illinois (Griffin, 1952b, pp. 98-101).

There are 142 sherds in which the decoration was incised over a cordmarked surface; 34 are decorated with fingernail punctates over cordmarks; 26 combine reed punctates and incised lines. The sherds with fingernail punctating, and those combining punctates

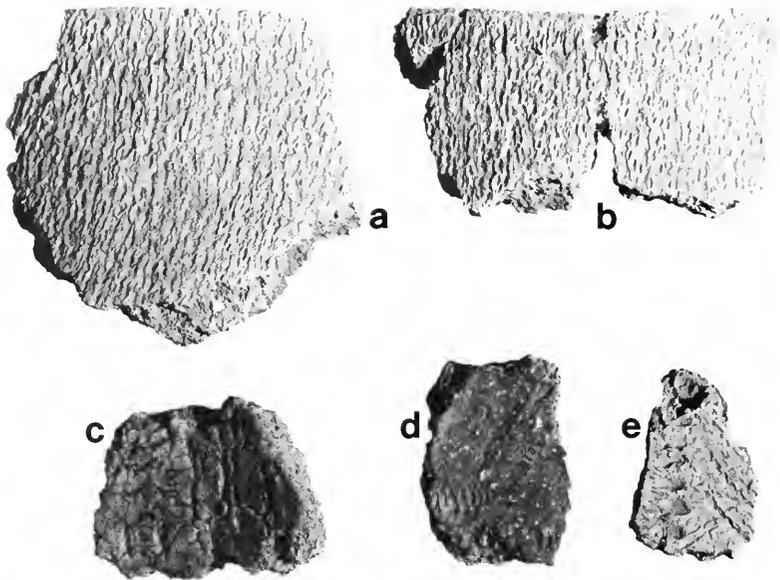


Figure 55. Marion Thick sherds from the Elephant Site (UMMA Neg. No. 12724).

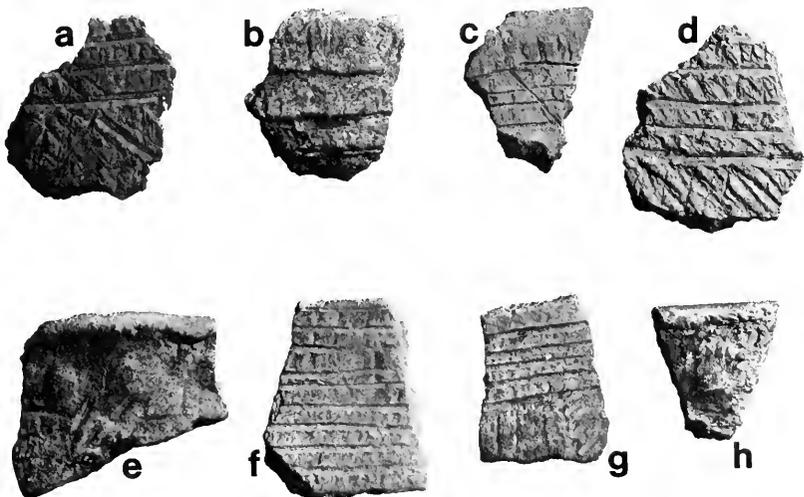
with incised lines resemble the Sister Creeks Punctated type. The large thick specimen in the Keyes Collection from the Rogers Site, two sherds from the Levsen Rock Shelter, and two from the Mouse Hollow Shelter are comparable to the Black Sand type. These are considered separate from the remainder of the incised-over-cordmarked sherds. They probably represent local ceramics on a temporal level coeval with the Black Sand material of Illinois. The remainder were included in a broad class called Spring Hollow Incised. It is impossible to make a fine chronological breakdown within this type. The preponderance of Spring Hollow Incised probably appeared late within the local Middle Woodland. The attributes of Spring Hollow Incised are summarized below. Decorative variations are illustrated in figure 84a-n.

Method of manufacture: coiled. Temper: grit. Large coarse fragments of crushed rock (gravel, limestone, or flint). Fragments range up to 0.2 to 0.3 cm. in diameter. Texture: coarse to medium fine; often granular or lumpy. Paste sandy, and temper may show through vessel walls. Hardness: 2.0 to 3.5. Color: yellow ocher to red-brown or gray. Interiors may be black or red-brown. Surface finish: exterior covered with irregular cordmarks arranged vertically on vessel. On upper part of vessel, cordmarks are usually parallel to each other, but may be criss-crossed near and on the base. Some specimens have been smoothed over the cordmarks, partially obliterating them. Interior surfaces scraped or indifferently smoothed. Single cord impressions may occur discontinuously on interior rim and neck surfaces. Decoration: confined to zone between lip

and shoulder on most specimens, but may continue onto upper body. Decorative elements consist of punctates or cord-wrapped-stick impressions on interior of upper rim at lip. Bosses are punched from interior or exterior horizontally. Beneath these are zones of sloppily applied horizontal incised lines over the cordmarked surfaces. Immediately beneath these horizontal lines are oblique lines forming rectilinear designs (usually chevrons or triangles). On some specimens punctates or very short incised lines form parallelogram-shaped zones on the body. Another style involves fingernail punctates applied in zones on rim and neck, and bosses punched from the interior. Four arrangements of these are known: (1) punctates arranged in oblique lines downward from rim; (2) punctates applied with long axes vertical to line of lip and in regular rows; (3) punctates applied with long axes parallel to line of lip and arranged in vertical zones; and (4) punctates applied with axes parallel to line of lip and arranged in horizontal lines

which seem to encircle the pot. Lip: flat to rounded and everted. Rim: straight to slightly flaring. Shoulder: apparently slight. Body: elongate jar with very slight to no shoulder expansion. Base: conoidal. Thickness: lip: 0.7 to 1.0 cm.; rim: 0.7 to 1.0 cm.; body: 0.8 to 1.1 cm.; base: 0.9 to 1.3 cm. Geographic range: incompletely known. Found in the Elephant Site; the "High Bank" Site; on the Prairie du Chien terrace; in the Nelson Dewey Site; in the fill of Mound I of the Harvey's Island Mound Group; in the rock shelters of Jackson County; in Spring Hollow Rock Shelter No. 1; and in the Rogers Site in Cedar County. It has also been reported from Washington, Pottawattamie, Jasper, Floyd, and Mitchell Counties in Iowa. Bennett (1945, pl V) illustrates a pot of the type from Jo Daviess County, Ill. Chronological range: probably late Middle Woodland. Probable relationships: Black Sand Incised, Morton Incised, and Sister Creeks Punctated of Illinois; Dane Incised of Wisconsin (David A. Baerreis, personal

Figure 56. Spring Hollow Incised sherds from Spring Hollow Rock Shelter, No. 1 (UMMA Neg. No. 12714).



*Artifact
Types*



Figure 57. Part of Spring Hollow Incised pot from Spring Hollow Rock Shelter, No. 1 (UMMA Neg. No. 12715).

communication), Spring Hollow Cord-marked, Spring Hollow Plain, Levsen Stamped, and Levsen Punctated.

Spring Hollow Brushed (figs. 69c, e, f, 91g-i)

This was a rare type in northeastern Iowa. All of the 19 sherds recorded were found in Spring Hollow Rock Shelter No. 1. Relationship to Spring Hollow Incised pottery is evident. Resemblances in paste and form were noted between Spring Hollow Brushed and the Naples pottery types of Illinois. The paste was indicative of slightly superior ceramic craft in comparison to Spring Hollow Incised sherds. Spring Hollow Brushed sherds were very hard, and considerable care

had been taken in manufacture.

In Spring Hollow Rock Shelter No. 1, the majority of these sherds were found in the lower excavation levels. They were most numerous in the 18 to 24-inch level, where the Spring Hollow Incised sherds were also most common. Summary of the characteristics of Spring Hollow Brushed is presented below.

Method of manufacture: unknown. Temper: grit. Fine particles of crushed rock; probably river pebbles. Texture: fine. Paste compact and very homogeneous. Hardness: 3.5. Color: light gray. Surface finish: scraped and smoothed on interior; exterior smoothed. Decoration: brushed obliquely over surface with comb-like implement to produce haphazard hachured designs. Cord-wrapped-stick notches appeared on interior rim at lip. Another decorative motif consists of horizontal, parallel, incised lines on rim and neck. Over these, at regular intervals, are short oblique incisions arranged in vertical lines and spaced regularly around the neck. Lip: flat, or rounded into flat surface from inner rim on some specimens; beveled inward on others. Rim: straight; slight channel on inner rim of one specimen. Shoulder: slight to pronounced expansion of diameter at shoulder, producing fairly sharp shoulder "break." Body: unknown, probably an elongate jar. Base: unknown. Thickness: lip: 0.6 to 0.7 cm.; rim: 1.0 to 1.2 cm. Geographic range: incompletely known. Present known distribution is in Spring Hollow Rock Shelter No. 1. Chronological range: unknown. Associations in the Spring Hollow Rock Shelter No. 1 indicate contemporaneity with Spring Hollow Plain, Spring Hollow Cordmarked, and Spring Hollow Incised. Probably late Middle Woodland. Probable relationship: Pike Brushed and Baehr Brushed of Illinois (James B. Griffin, person communication).

Naples Stamped (figs. 52c, 58b-c, e, 59a-c)

Sherds identical to Naples Stamped were

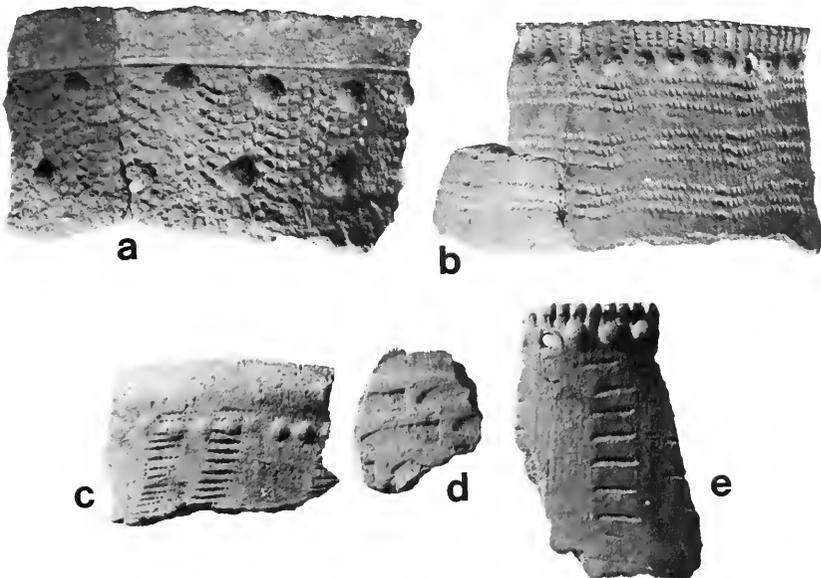
found in several Jackson County rock shelters. These conformed in all characteristics to the Naples Stamped dentate variety type of Illinois (Griffin, 1952b, pp. 107-110). This type was represented by 98 sherds. An additional six sherds represented the variation called Naples Ovoid Stamped (fig. 58d). The Naples Stamped variety dentate sherds were found in the Levsen, Crabtown, Verne Hute, and Clay Mills Rock Shelter, in the "High Bank" site, and in the small rock shelter on Section 17, Township 85 North, Range 2 East, Jackson County. The Naples Ovoid sherds were found in the Levsen Shelter. Occurrences of these types was considered indicative of a Middle Hopewelian occupation. Decorative variations and rim profiles of the types are illustrated in figures 85 and 92i, j, k-n.

Levsen Stamped
(figs. 40, 52d, 60a, c-f)

The paste and surface treatment of this type resembles that of Naples Stamped. Certain decorative motifs also are similar. In general, the sherds of this type are thinner than those of the Naples type. Certain differences of form were also noted. The decorative variations, rim profiles, and vessel forms of the type are illustrated in figures 86, 92o-s, 93j, and 95a. The characteristics of the type are presented below.

Method of manufacture: unknown. Temper: grit. Crushed sand or river pebbles in particles ranging up to 0.2 cm. in diameter. Texture: fine, compact. Paste and temper mixture homogeneous. Hardness: about 3.5. Color: varies between dark gray and red-orange. Surface finish: rim, neck, and

Figure 58. Potsherds from the Levsen Rock Shelter (UMMA Neg. No. 12725).



*Artifact
Types*

shoulder smoothed. Body cordmarked and partially smoothed. Decoration: applied in three zones. Beginning at the lip: cord-wrapped-stick notching on lip; oblique lines or crosshatch in a band encircling the upper rim, immediately below which is a horizontal line separating the zone from the neck. The neck zone is filled with inverted triangles, X-shaped crosses, or rectilinear patterns describing diamonds or lozenges. On the shoulder is another narrow zone outlined by horizontal parallel lines about 1 inch apart. The area between these lines is filled with crosshatch or oblique lines. A horizontal line of bosses frequently encircles the pot in the neck zone just below the upper rim band. Decoration was applied with either a cord-wrapped-stick or a dentate stamp. Lip: flat or notched; everted slightly. Rim: vertical to slightly flaring. Shoulder: slight. Appears to have set fairly low on the vessel. Body: elongate, deep jar with wide mouth. Base: conoidal to rounded

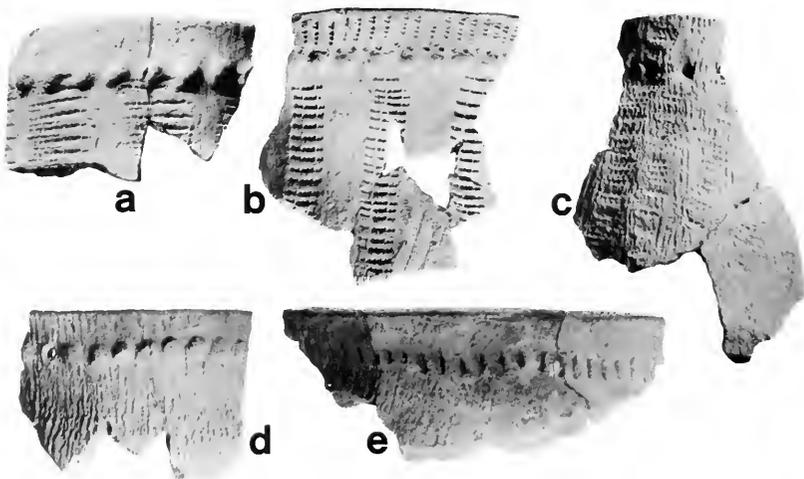
conoidal. Thickness: lip: 0.4 to 0.6 cm.; rim: 0.5 to 0.8 cm.; shoulder: 0.5 to 0.9 cm. Geographic range: the type has been found in Allamakee, Clayton and Linn Counties, Iowa. In southwestern Wisconsin the type was found in the Nelson Dewey Site, Grant County. Chronological range: unknown, but probably a type of the late Middle Woodland and early Late Woodland. Probable relationships: Levsen Punctated, Spring Hollow Plain, Spring Hollow cord-marked, and Spring Hollow Incised. Probably related to Naples Stamped, Weaver Plain, and Weaver Cordmarked of Illinois.

Levsen Punctated

(figs. 42, 49b, 50b, 60b, 61)

This pottery variation was separated from Naples Stamped, Levsen Stamped, and the Spring Hollow Plain and Cordmarked. Resemblances to all of these types were apparent, however. The decorative variations and rim forms of the type are illustrated in fig-

Figure 59. Naples Stamped and Havana Cordmarked potsherds from the Levsen Rock Shelter (UMMA Neg. No. 12726).



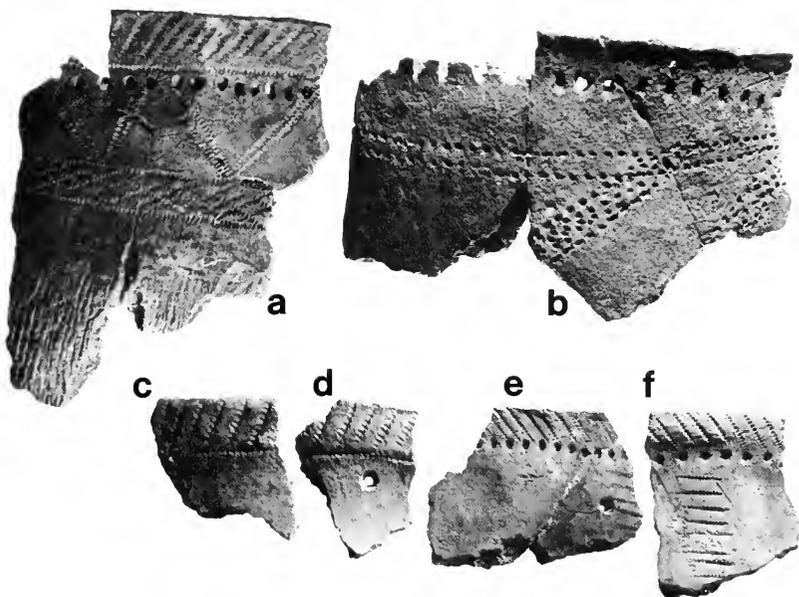


Figure 60. Potsherds from the Levensen Rock Shelter (UMMA Neg. No. 12728).

ures 87 and 92t-x.

Method of manufacture: unknown. Temper: grit. Crushed rock or sand in particles which ranged up to 0.1 cm. in diameter. Hardness: 3.0. Color: ranges from dark gray or black to yellow-orange. Dark gray or black predominates. Surface finish: scraped and smoothed above shoulder and on interior. Exterior of body cordmarked on specimens where body treatment could be observed. Decoration: reeds, grass stems, or small sticks (diameters of which seldom exceed 0.3 cm.) employed to produce punctate filled zones, punctated lines, or inverted triangles. Punctate filled zones were placed horizontally or obliquely on neck. Punctate lines are horizontal, oblique, or slightly curvilinear. Punctate triangles are pendant to horizontal lines. Small bosses on some specimens punched from the interior on the

rim just below the lip; the sticks used to produce them were usually larger than those which produced the punctates. Sometimes the bosses were punched into the clay, following which the stick was pushed downward to produce an elongate depression. Punctates sometimes combined with rockered zones on neck; cord-wrapped-stick stamped lines applied horizontally on neck; incised lines on neck and rim; and notches on rim at lip. Lip: rounded, flattened, or everted. Rim: straight or slightly flaring. Shoulder: slight to almost nonexistent, and placed very low on pot. Body: probably elongate, wide-mouthed jar. Base: appears to have been rounded conoidal. Thickness: lip: 0.4 to 0.6 cm.; rim: 0.4 to 0.6 cm.; shoulder: 0.5 to 0.7 cm.; body: 0.4 to 0.6 cm. Geographic range: Jackson, Clayton, and Allamakee Counties. Chronologi-

*Artifact
Types*

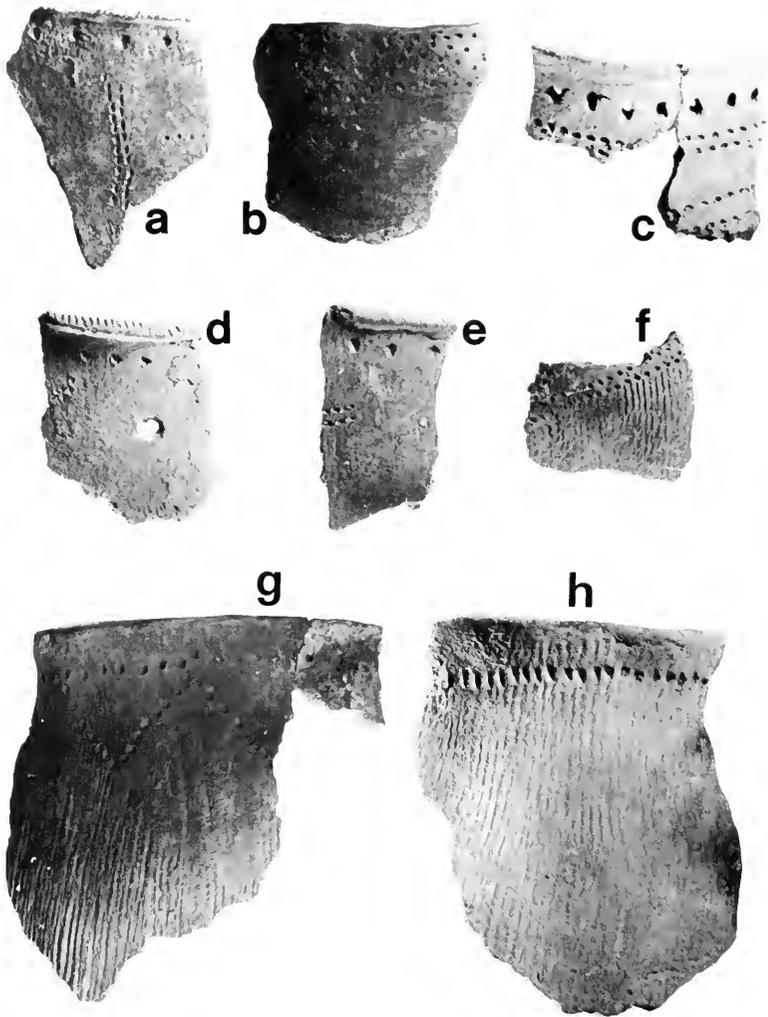


Figure 61. Levensen Punctated sherds from the Levensen Rock Shelter (UMMA Neg. No. 12727).

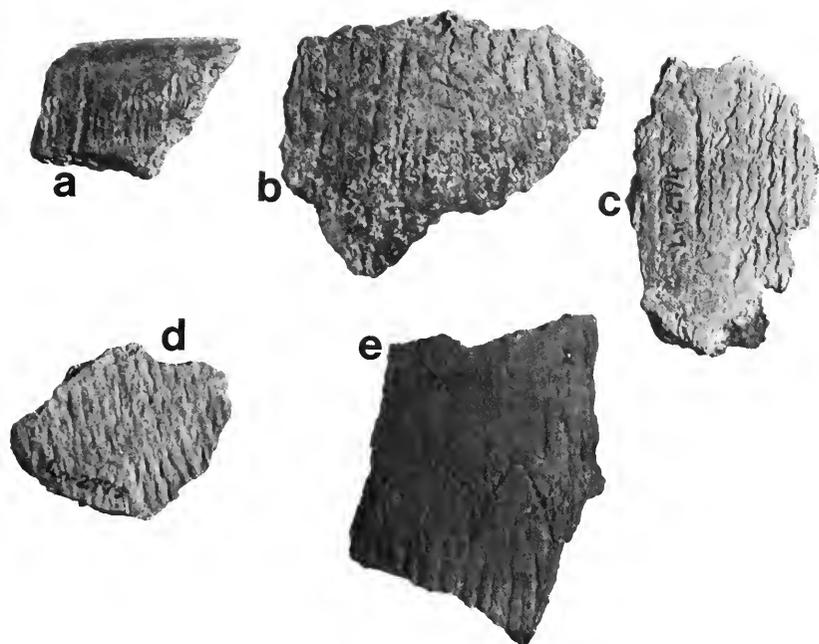


Figure 62. Spring Hollow Cordmarked sherds from Spring Hollow Rock Shelter, No. 1 (UMMA Neg. No. 12720).

cal range: probably the same as for Levsen Stamped. Probable relationships: Levsen Stamped, Spring Hollow Cordmarked, Spring Hollow Plain. Probably also related to Naples Stamped, Weaver Cordmarked and Weaver Plain of Illinois.

Spring Hollow Cordmarked

(figs. 49i, 50a, c-e, 52e-f, 62, 63f, h-i)

Method of manufacture: unknown. Temper: grit. Crushed rock or sand in particles up to 0.1 cm. in diameter. Texture: medium fine to fine. Hardness: 3.0 to 3.5. Color: red-orange to gray or black. Surface finish: cord-wrapped-paddle impressed. Indifferently smoothed over paddle impressions on some specimens. Decoration: none

on body or neck. Rim may be plain, or may be notched with fingernail or with cord-wrapped-stick on exterior rim at juncture with lip. Lip: rounded or beveled slightly on interior (fig. 93f-i). One specimen has a slightly thickened lip. Shoulder: slight to fairly sharp increase in diameter at shoulder. Body: unknown for most specimens; body form indicated an elongate jar with wide orifice (fig. 90d, g). Base: conoidal to rounded conoidal. Thickness: lip: 0.4 to 0.7 cm.; rim: 0.5 to 0.9 cm.; body: 0.5 to 0.9 cm. Geographic range: northeastern Iowa and southwestern Wisconsin. Chronological range: probably a type of the late Middle Woodland and early Late Woodland. In northeastern Iowa this type has been found in

*Artifact
Types*

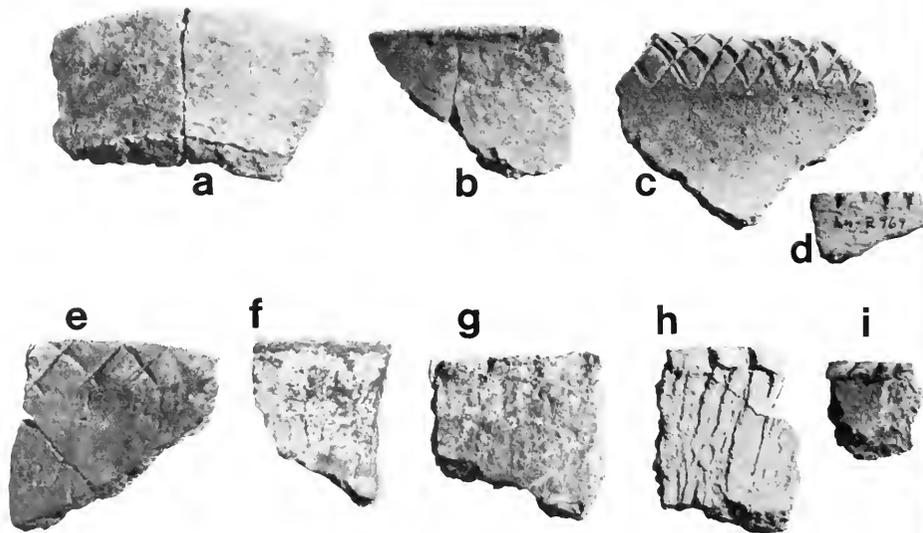


Figure 63. Potsherds from Spring Hollow Rock Shelter, No. 1 (UMMA Neg. No. 12718).

association with Madison Cord-Imprinted. In Spring Hollow Rock Shelter No. 1, it was associated with the upper excavation levels, and occupied a position above the bulk of stamped and incised-over-cordmarked materials. Probable relationships: Weaver Cordmarked of Illinois, Levsen Stamped, Levsen Plain.

Spring Hollow Plain
(figs. 45, 48c-d, 49a, e-h, 51).

Method of manufacture: unknown. Temper: grit. Crushed rock and sand in particles up to 0.1 cm. in diameter. Texture: medium fine to fine. Some sherds have slightly sandy texture. Hardness: 3.0 to 3.5. Color: red, red-orange, or gray to black. Surface finish: scraped and smoothed indifferently on neck and rim; sometimes partially smoothed on upper body. Surface has been cordmarked before smoothing. Deco-

ration: some specimens are undecorated. Decoration, when present, appears on the upper rim at the lip, including fingernail notching and impressing with a cord-wrapped-stick. One specimen has a channeled rim with punctates at the lower limit of the channel on the exterior surface. Lip: rounded or flattened. Rarely beveled outward (fig. 93a-c). Rim: straight to slightly flaring or channeled on interior. Shoulder: slight to fairly pronounced shoulder expansion. Body: elongate or elongate globular jar. Base: unknown, but probably conoidal to rounded conoidal. Thickness: lip: 0.4 to 0.9 cm.; rim: 0.6 to 0.9 cm.; body: 0.6 to 0.9 cm. Geographic range: northeastern Iowa and in southwestern Wisconsin in the sites described herein. Chronological range: same as for Spring Hollow Cordmarked. Probable relationships: same as for Spring Hollow Cordmarked.

Lane Farm Cord-Imprinted

(figs. 9, 17, 20, 28, 32, 34-36, 38, 46, 64, 88, 94)

This pottery type was differentiated from others because it appears to represent a significant cohesive variation of Madison Cord-Imprinted and Minott's Cord-Imprinted, although it shares traits with these types. It also resembles Spring Hollow Plain and Levensen Punctated. Lane Farm Cord-Imprinted pottery was associated with a particular burial complex. Lane Farm sherds were also common in rock shelters and village sites in Allamakee and Clayton counties. There is some evidence of difference in vessel size between the examples derived from burial mounds and those found in rock shelters. On the whole, specimens from the mounds seem to be smaller than those found in village sites and rock shelters. Decorative variations and rim forms of the type are illustrated in figures 88 and 93m-o; vessel forms are shown in figure 94.

Method of manufacture: unknown. Temper: grit or clay. Grit predominated and was derived from crushed river pebbles in small particles about 0.1 cm. in diameter. Texture: medium fine to fine, sometimes flaky. Some sherds tend to have a slick surface, while others are slightly sandy. Hardness: 2.5 to 3.0. Color: orange-red to buff, gray, or black. Some sherds show a mottled surface or blotches of darker color on an overall light colored surface. Both interior and exterior surfaces and the core are alike in color. Surface finish: exterior scraped and smoothed or polished. Sometimes the exterior was smoothed again after application of decoration. Interior scraped or smoothed. Temper might show through interior vessel walls. Decoration: cord-impressed on rim and neck and sometimes on shoulder, rarely on inner rim. The basic pattern is in three zones as follows: (1) a zone of short vertical (rarely oblique) single-cord impressions on rim just below lip; (2) below this a zone of

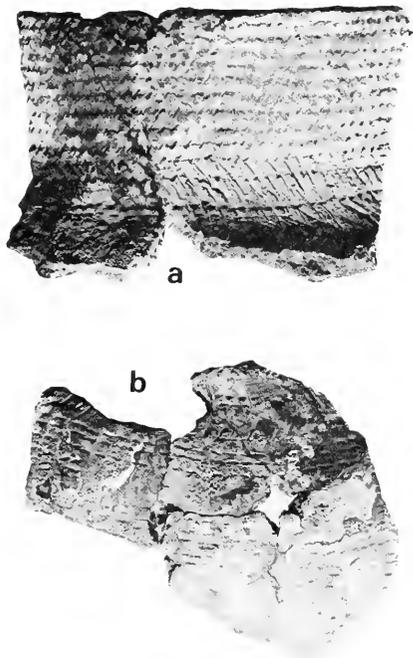


Figure 64. Aberrant form of Lane Farm Cord-Imprinted pottery from the Waterville Rock Shelter (UMMA Neg. No. 12713).

horizontal single-cord impressions encircling the neck and covering the neck; and (3) beneath this zone, at the shoulder, another zone of short, vertical single-cord impressions which encircles the pot. The middle zone might vary in any one of several motifs (fig. 88). The motif with highest frequency is designated a, with b probably next most common. The inner rim might have short vertical single-cord impressions. Bodies of these pots were decorated with dentate or plain rocker impressions. Rare specimens are cordmarked on the body with occasional scattered zones of dentate applied over the cordmarks. Lip: rounded and

*Artifact
Types*

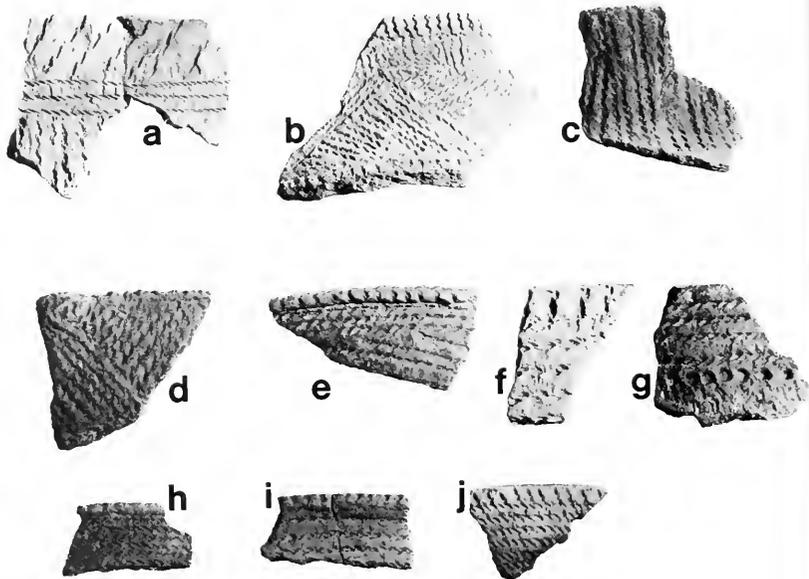
smoothed. Occasionally flattened. Rim: straight to slightly flaring. Some rims show tendency toward channel on interior. Body: jar with slight to pronounced expansion in diameter at shoulder. Base: rounded conoidal to conoidal. Thickness: lip 0.3 to 0.5 cm.; rim: 0.4 to 0.6 cm.; shoulder: 0.5 to 0.7 or 0.8 cm.; body: 0.7 cm.; base: unknown. Geographic range: appears limited to northeastern Iowa and probably southwestern Wisconsin. No examples were found outside of Allamakee, Clayton, and Jackson Counties. One example only was noted in Jackson County. Chronological range: probably late Middle Woodland to Late Woodland. The type may have had a restricted chronological range. Probable relationships: Spring Hollow Plain, Levsen Punctated,

Madison Cord-Imprinted, Minott's Cord-Imprinted.

Lane Farm Stamped

Paste: all paste characteristics are the same as for Lane Farm Cord-Imprinted. Surface finish: same as for Lane Farm Cord-Imprinted. Decoration: decoration appears as plain or dentate rocker impressions. These are usually arranged in zones on the pot in horizontal rows. The edges of each row overlaps slightly. A variation of this involved placement of the rocker horizontally on the vessel, whereupon the implement appears to have been rocked over the surface in such a way as to produce an oblique zone running downward over the body. Several of these zones might be spaced at regular

Figure 65. Exterior surfaces of typical Madison Cord-Imprinted rims (UMMA Neg. No. 12716).



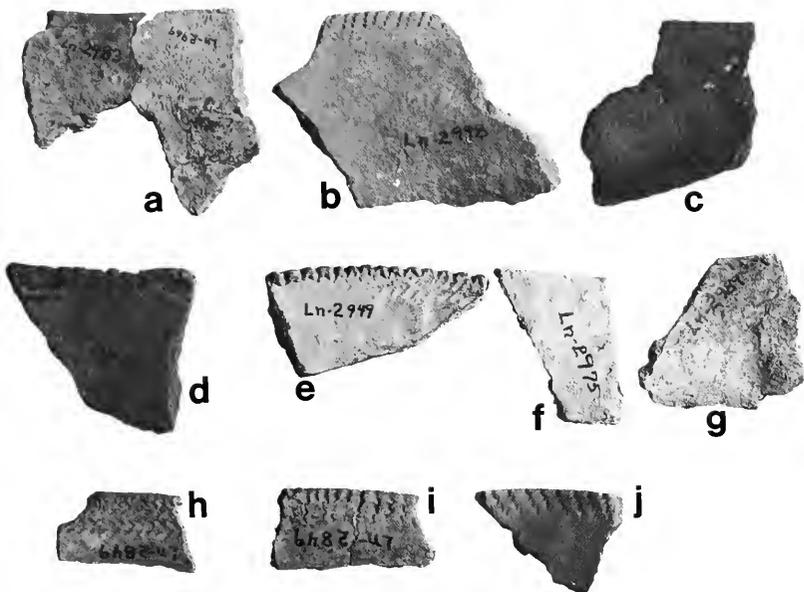


Figure 66. Interior surfaces of typical Madison Cord-Imprinted rims (UMMA Neg. No. 12717).

intervals around the vessel.

All other data same as for Lane Farm Cord-Imprinted.

Madison Cord-Imprinted (figs 50f, 65, 66, 67)

As described by Baerreis (1953, p. 13), this pottery type is confined to decorative variations combining parallel lines with zones of short vertical lines or punctates. Motifs present on sherds from Iowa sites include the following: parallel lines; parallel lines combined with small cord-impressed, inverted triangles; oblique lines bounded by parallel lines; bands of opposed cord-impressed triangles; zig-zag lines applied on a plain or cordmarked surface or over a zone of parallel, horizontal, cord-impressed lines; and vertical lines applied on a plain surface.

With such variation of decorative motifs, distinct pottery types were expected within this broad class. After careful grouping and regrouping of the material, it was decided that no separate types could be demonstrated on the basis of the information available. What could be demonstrated were two decorative styles, one involving parallel, horizontal, cord-impressed lines and the other involving the use of oblique lines or opposed triangles. However, the two varieties appeared to be intimately related. Hence the grouping as finally defined did not make this latter distinction as a separate type or subtype of the basic Madison Cord-Imprinted type described by Baerreis. The decorative variations of Madison Cord-Imprinted are illustrated in figures 89 and 90a-k, o-p. Rim forms are shown in figure

*Artifact
Types*

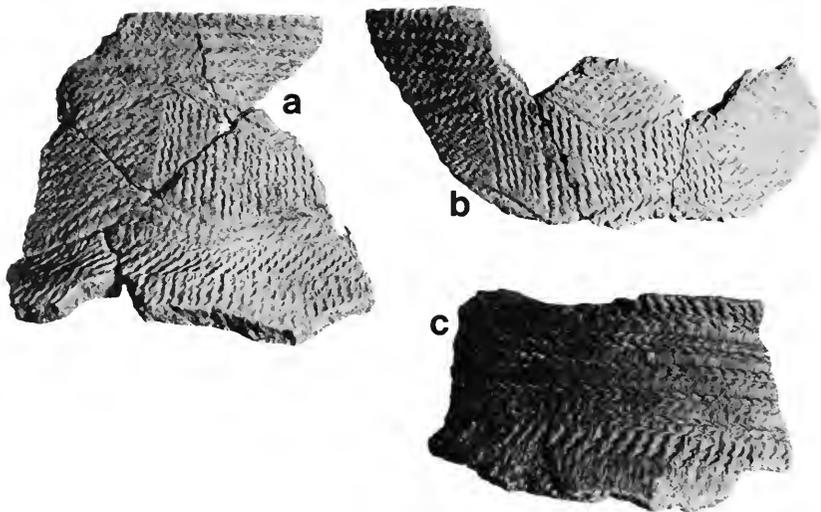


Figure 67. Lake Michigan Ware sherds from the Minott's Rock Shelter (UMMA Neg. No. 12723).

93p-t, v; vessel forms in figure 95h-i.

Method of manufacture: unknown. Temper: grit. Crushed rock or sand in very fine particles. Particles may range up to 0.5 cm. in size, but most are 0.1 cm. or less in diameter. Texture: medium fine to fine. Compact and homogeneous mixture of clay and temper. Texture sometimes slightly sandy. Hardness: 2.5 to 3.5. Color: dark brown or black to orange and red-brown. Some sherds mottled black or brown or buff. Both exterior and interior tend to be colored alike. Surface finish: interior scraped and smoothed and smoothed indifferently or to a moderately well-finished surface. Exterior cordmarked over entire surface. Cordmarks tended to be parallel on the shoulder, but overlapped and crisscrossed on the body. The vessel surface was sometimes smoothed lightly over the cordmarks. On interiors, especially on the shoulder and the lower part of the inner rim, single-cord impressions were noted on occasional specimens.

Decoration: similar to that of Lane Farm Cord-Imprinted, applied to the rim, neck, shoulder and inner rim. Inner rim decoration more common on Madison Cord-Imprinted rims. The decoration combined parallel horizontal cord-impressed lines, vertical cord-impressed lines, knots, circular punctates, oblique lines, triangles, deep, oblong punctates, and, occasionally, curvilinear cord-impressed lines in patterns, the variations of which are illustrated in figures 84 and 85a-k, o-p. The interior upper rim was either plain or decorated with short vertical or oblique single-cord impressions. Occasionally, one, two, or three horizontal single-cord lines are found beneath these vertical or oblique impressions. The lip is notched or plain. The most common decoration is a zone of short vertical or oblique single cords on the exterior rim below the lip under which is a zone of paired horizontal lines bounded at the shoulder by a row of short vertical single cords or knots. Lip:

flat, rounded, or notched with single cords. Some flattened to the extent that they present a T or inverted L-shaped appearance in cross section. Rim: straight to slightly flaring. On certain specimens the upper rim flared sharply, while the neck is vertical or nearly so. One or two specimens are slightly thickened on the upper rim. Shoulder: sharp expansion in diameter indicated for the majority of specimens. One example has almost no shoulder (fig. 90i). Body: globular jar with rounded conoidal or round base. A second form resembles a deep bowl with rounded base (fig 90i). Base: round or rounded conoidal. Thickness: lip: 0.3 to 1.0 cm. (average about 0.5 cm. or less); rim: 0.3 to 0.9 cm.; shoulder: 0.1 to 0.4 cm.; body: 0.3 to 0.9 cm.; base: 0.4 to 0.9 cm. Geographic range: throughout northeastern Iowa, the southeastern counties of Minnesota, central and western Wisconsin, and north-central Iowa. Related types have been found in southwestern Iowa. Chronological range: late Middle Woodland and Late Woodland. Probably contemporaneous with Maples Mills pottery in Illinois. Local northeastern Iowa rock shelter evidence indicates contemporaneity with Spring Hollow Plain and Spring Hollow Cordmarked. Probable relationships: Maples Mills pottery, Spring Hollow Plain, Spring Hollow Cordmarked, Minott's Cord-Imprinted, and Feye Cord-Imprinted in Nebraska (Kivett, 1952. pp. 54-55).

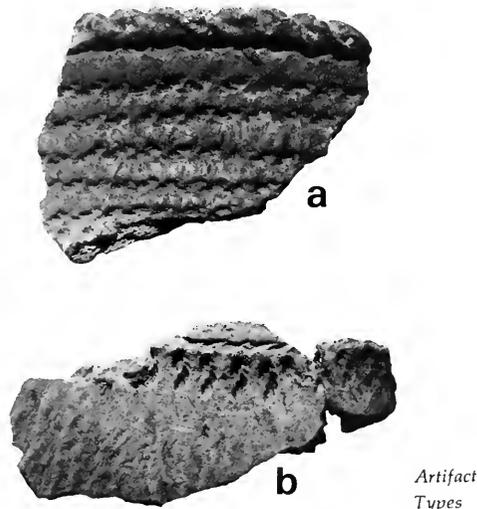
Minott's Cord-Imprinted
(fig. 68a, b)

Another single-cord decorated variation was separated from the Madison Cord-Imprinted type and given the name of Minott's Cord-Imprinted. Distributional evidence indicates that the Minott's type may reflect some geographic cultural difference. The Minott's type was restricted to Linn County where it was found in association with Madison Cord-Imprinted. The relationship between the two types was an inti-

mate one; the fine-gage cord employed in Marison Cord-Imprinted for both decoration and body cord-roughening was not restricted to Madison Cord-Imprinted vessels. The fine-gage cord decoration style appears on vessels with coarse-gage cord employed for body roughening. However, a coarse-gage cord decoration was not noted on the bodies of vessels roughened with a fine-gage cord. Evidently the potters considered it proper to place a fine-gage cord decoration on a body roughened with a coarse-gage cord, but the converse treatment seems not to have been acceptable. Oblique lines, triangles, or any combinations thereof could be placed on either type of vessel. On a percentage basis, the triangle and oblique line motif appears most frequently on Madison Cord-Imprinted vessels.

Method of manufacture: unknown.
Temper: grit. Crushed rock in particles up

Figure 68. Minott's Cord-Imprinted sherds from Minott's Rock Shelter (UMMA Neg. No. 12722).

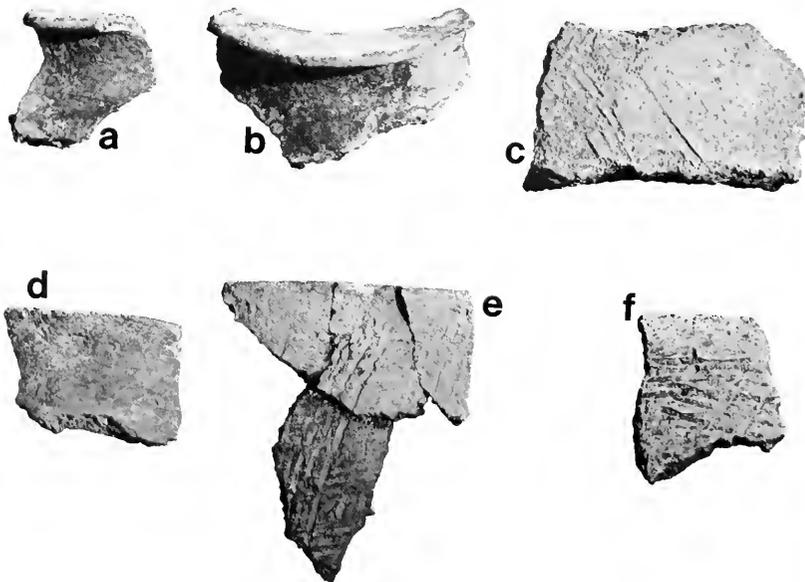


Artifact
Types

to 0.5 cm. in diameter. Average size of particles is about 0.1 to 0.2 cm. in diameter. Texture: fine, homogeneous, compact paste; sherds sometimes slightly sandy in texture; temper may show through vessel walls. Hardness: 3.0 to 3.5. Color: gray and black to tan or buff. Surface finish: cordmarked, employing a coarse-gage cord (or, possibly, a thong) on the exterior. Interior smoothed. Coarse cordmark resembled the grooved paddle "simple stamp" on certain pottery types of the northern Plains. Decoration: exterior: a three-zone decoration on rim, neck, and shoulder, produced by application of single, 2-ply cords. This cord was also coarse-gage similar to that employed in the body stamping. The exterior decorative patterns did not differ from the simpler patterns of Madison Cord-Imprinted. The lip might be notched with single-cord impres-

sions as in Madison Cord-Imprinted. Beneath the lip on the upper rim is a plain zone or zone of very short cord impressions applied vertically to the lip, or, sometimes, at an oblique angle to the lip; beneath these are single, coarse-gage cord impressions, regularly spaced, which encircle the neck horizontally. These are bordered at the shoulder by vertical or oblique cord knots, tight cord twists, or circular stick punctates. Opposed triangle motifs appear, but are numerically less significant than the simpler combination of verticals and horizontals. Interior: plain, or short vertical or oblique impressions of coarse single cords on the upper rim at the lip. These often had been carried over the lip from the exterior, producing a cord-notched lip. This cord-impressed notch was sometimes obliterated by smoothing. Other specimens are deeply notched, producing a

Figure 69. Minott's Plain and Spring Hollow Brushed sherds from Spring Hollow Rock Shelter, No. 1 (UMMA Neg. No. 12721).



crenelated effect. On both the notched and smoothed specimens, and the notched and unsmoothed examples, the process of notching produced a thickened, wedge-shaped area on the profile of the upper rim. Lip: notched, rounded, or flattened. Flattened and notched forms appear on wedge-shaped upper rims. Rim: flared slightly in smooth curve from a point about midway between shoulder and lip. Upper rim sometimes wedge-shaped. Shoulder: expanded sharply in diameter from neck and rim. Shoulder rounded sharply into body. Body: probably globular. No complete examples were available. Base: appears to have been rounded. Thickness: lip 0.6 to 0.9 cm.; rim: 0.6 cm.; shoulder: 0.8 cm.; body: 0.6 to 0.8 cm.; base: 0.8 cm. Geographic range: present known range is in Linn County. Chronological range: probably the same as Madison Cord-Imprinted. Probable relationships: Madison Cord-Imprinted, Maples Mills. Also closely resembles sherds in the Keyes Collection from Boone, Webster, Hamilton, and Floyd Counties.

Minott's Plain (fig. 69a, b, d.)

Method of manufacture: unknown. Temper: grit. Crushed rock in particles up to 0.5 cm. in diameter. Average size of particles much smaller, about 0.1 to 0.2 cm. Texture: fine, compact, and homogeneous. Temper may show through vessel walls. Hardness: 2.5 to 3.0. Color: red to red-brown or black, or dull yellow ocher. Black or gray-black appears to have predominated. Surface finish: cord-roughened and smoothed to high polish on some specimens. Cordmarked and smoothed on others. Body could be cord-marked and smoothed or simply cord-marked. Decoration: none on most specimens. One example has very small, plain notches on the outer rim at its juncture with the lip. Lip: rounded and slightly everted. Rim: slightly flaring, especially from upper rim to lip. Shoulder: fairly pro-

nounced to pronounced expansion in diameter at the shoulder. Shoulder curved sharply into the body. Body: probably globular or nearly globular. Base: rounded, or possibly rounded conoidal. Thickness: lip: 0.4 to 0.6 cm.; rim: 0.6 to 0.9 cm.; body: 0.9 to 1.0 cm.; base: about 1.0 cm. Geographic range: unknown. Found in Linn, Jackson, and Washington Counties, and resembles pottery in the Keyes Collection from Boone, Webster, and Hamilton Counties. May be identical with certain variations of this latter pottery. Chronological range: unknown. In Linn County it appears in association with Madison Cord-Imprinted and Spring Hollow Plain and Cordmarked. It may have extended beyond these in time. Probable relationships: Madison Cord-Imprinted, Minott's Cord-Imprinted, Spring Hollow Plain, and Spring Hollow Cordmarked. Resembles Maples Mills pottery of Illinois (Cole and Deuel, 1937, pp. 48 and 52, fig. 13).

Minor Pottery Types of Northeastern Iowa

Neteler Stamped (figs. 58a, 92e-f). *Neteler Stamped* has been distinguished in Illinois as an Early Hopewellian type (Griffin, 1952b, pp. 104-105). Two sherds in the Levsen Rock Shelter are identical to Illinois examples. The paste and temper are the same as in *Naples Stamped*. Decoration probably was confined to the inner lip and outer rim surfaces. The lip is beveled inward and stamped with a cord-wrapped stick. The upper rim exterior is plain, and is separated from the neck zone below by an incised line encircling the rim. Below the incised line a semicircular dentate stamp had been impressed against the pot with the concave side of the arc toward the lip. Evenly spaced vertical rows of this stamp encircle the neck. Bosses punched from the interior were spaced in horizontal rows around the pot. One row of bosses had been punched just below the incised line describing the

*Artifact
Types*

plain zone of the upper rim. Approximately 1 inch below these is another row of bosses encircling the neck just above the shoulder. The interior rim of the other sherd is notched with a series of cord-wrapped-stick stamped lines. The inner lip is beveled slightly. No incised line separates the plain upper rim zone from the semicircular dentate stamp. The semicircular dentate stamped zone was applied as in the first specimen, but only one row of bosses punched from the interior was applied. This line of bosses was punched just above the angle of the shoulder. The cross sections of the bosses on these sherds are conical.

Havana Cordmarked (figs. 59d-e, 92a-b). These sherds are cordmarked on the exterior surface and bear a close resemblance to pottery from Illinois called Havana Cordmarked (ibid., pp. 101-104). Paste and tempering characteristics of the sherds are the same as for Naples Stamped. The cordmarking on the exterior surface was placed in vertical parallel lines. On some sherds this had been partially obliterated by smoothing. On others the surface appeared not to have been smoothed over the cordmarking. The only decorative features noted are bosses punched from the interior or punctates applied indifferently on the outer rim about 1.5 to 2.0 cm. below the lip. The punctates are deep on one sherd and the implement which had produced them had been pulled downward, leaving an elongate depression in the outer surface.

The lips of these sherds are flat and beveled outward or inward. One specimen has a rounded everted lip. The rims are straight and usually vertical. On one or two specimens, rims appear to slope inward. Expansion in diameter at the shoulder was slight. No definite information is available on body form, but a series of body sherds, cordmarked in the same manner as the rims, suggest an elongate, deep jar with conoidal base. At the lip, these sherds average 1.0

cm. in thickness. Rim thickness averages about the same, while shoulders are slightly thicker. No information is available on thickness of other vessel parts. Sherds of this type were found in the Levensen Rock Shelter.

Havana Zoned. Fifteen sherds recovered from the Levensen Rock Shelter resemble the type called Havana Zoned in Illinois (ibid., pp. 105-107). The characteristics of the paste and tempering are the same as the Havana Cordmarked and Naples Stamped types. These sherds appear to have been cordmarked and smoothed. On some, the smoothing had been done carefully; on others, it was indifferently carried out. The decoration was applied in zones, defined by a wide incised line on the exterior surface of the vessel. Usually the line appears on the lower rim or upper body. One side of the zone is filled with dentate stamping while the other side is plain. The rim decoration varies. On some it was apparent that the rim decoration is of the Naples Stamped type. One sherd has a plain rim with bosses punched from the exterior. The decorated zone beneath these had been produced by lightly impressing the clay with a series of overlapping, right-angled, plane-surfaced punctates produced by a tool of unknown type. One of these rims was treated in such a way as to leave the cordmarking on the upper rim as inverted triangle-shaped areas. On the lower part of the rim, bosses were punched from the exterior, and roughly 3.0 cm. below the bosses is a zone of the right-angled, plane-surfaced punctates.

The lips on these sherds are flat and horizontal. Shoulder expansion is slight and rims are vertical. The form of the remainder of the vessel probably resembled that of the Havana Cordmarked vessels previously described. The thickness of the lip, where this measurement could be taken, is 0.4 to 0.5 cm.; of the rim, 1.1 cm.; and of the shoulder, 0.5 to 1.1 cm.

Types with Havana Paste Characteristics

Three sherds from the Levens Rock Shelter resemble the Naples and Havana types in paste characteristics, yet they do not belong to any of the classes described here. One is a plain sherd bearing an area filled with vertical rows of lightly applied punctates made with a jagged instrument. The lip of this sherd is rounded and the rim appears to be vertical. Another sherd similar to this in form was smoothed on the exterior to a nearly polished surface. Over this is an oblique line of rockered dentate stamping. A horizontal line of the same dentate rocker was placed beneath this.

Another plain sherd has the same paste characteristics, but had been scraped on the exterior and interior, and was not smoothed after scraping. Bosses were punched on the middle part of the rim from the interior, and over these are evenly spaced, vertical rows of fingernail punctates extending from a point just below the lip down over the rim. This sherd has a rounded, everted lip and a straight, vertical rim.

Two sherds which bear resemblances to the type called Steuben Punctated in Illinois (Griffin, 1952b, p. 114) were recovered from Spring Hollow Rock Shelter No. 1. They differ from the Illinois examples in that the surface was indifferently smoothed over a previously cordmarked surface. They are decorated with a succession of hemiconical punctates applied in short, vertical, evenly-spaced rows on the outer part of the lip and upper rim. Punching the upper rim and outer lip surfaces to produce these punctates sometimes produced a scalloped or notched lip effect.

Another series of sherds resemble the type called Hummel Stamped (*ibid.*, pp. 110-112). Paste characteristics are the same as for the Havana and Naples types. The exterior surface was smoothed carefully on some specimens, and only lightly on others. Some are thickened slightly at the lip. The

rims are straight and vertical. Decoration consists of oblique incisions, crosshatched incisions, or bands of plain rocker stamping on the outer rim at the lip. In the latter case, the sherds are somewhat thinner than the incised varieties. The rocker impressions had been applied in such a way as to produce a deep notch at the juncture of outer rim and lip. These sherds also resemble Spring Hollow Plain.

A final variation which seems to belong to the Havana grouping is a single body sherd found in Harvey's Island Mound 1. This sherd appears to have a plain surface, although it is rather soft, and the surface may have changed in appearance through washing. It is decorated with impressions of a square stamp on the exterior surface. An identical decorative treatment is illustrated by Cole and Deuel (1937, p. 44, fig. 8, 1) as one of the varieties of Type 2a.

Miscellaneous Single-Cord Decorated Sherds

Nearly all of the pottery decorated with single-cord impressions could be placed within the Madison Cord-Impressed, Minott's Cord-Impressed, or Lane Farm Cord-Impressed classes. However, several sherds from the Mouse Hollow Rock Shelter (fig. 53d-h), and part of a pot from the Verne Hute shelter (fig. 54) were sufficiently different to warrant their being described separately. The past characteristics, type of body cordmarking, and general arrangement of the decoration differs little from Madison Cord-Impressed and Minott's Cord-Impressed. These sherds were distinguished from other single-cord decorated groups by squared orifices, pointed rims at the angles of the squared openings, and, usually, nodes appended to the exterior rim below the rim point; or by a collar or added rim strip placed on a vertical rim. The decoration of the sherds from vessels with pointed and noded rims and squared orifices

*Artifact
Types*

consist of: (1) a band of short vertical cords encircling the upper rim at the lip; (2) parallel single-cord lines beneath the cords parallel to the line of the lip; and (3) panels of opposed triangles in single-cord impressions.

On the inner rim, the surface might be impressed with two or three single-cord lines parallel to the line of the lip, or it might be plain. On the collared rims, decoration consists of short, oblique single cords on the outer rim at the lip, beneath which are three or more lines of horizontal single cords encircling the collar. Another decorative variation involves single-cord impressions applied obliquely to the inner rim, with oblique impressions running down over the collar on the exterior. Additional oblique single-cord lines appear on the neck. Knowledge of the variations of this class of pottery is limited. Only four sherds with collared rims were recorded, and of the variety with squared orifice and pointed rims, 12 sherds were found in the Mouse Hollow Rock Shelter. Part of one pot of the type was noted in the collection from the Verne Hute Shelter.

Shell-Tempered Pottery

Two groups of shell-tempered sherds were noted. Both types have been described previously in midwestern archeological literature. The sherds found in the Mouse Hollow Rock Shelter, and probably the sherd from Spring Hollow Rock Shelter No. 1, are of the type called Ramey Incised (fig. 52g-i). Other shell-tempered sherds, from Allamakee and Clayton County sites, were typical of the Orr Focus of the Oneota Aspect.

The Ramey Incised sherds are tempered with finely crushed mussel shells. The paste is fine, compact, and homogeneous. The surface had been polished to a high luster. The color of all examples was black or very dark brown. Decoration was confined to the shoulder, and was carried out in wide-line

incising. The polish on the vessel surface appears to have been applied after decoration. Motifs are curvilinear and rectilinear. The lips on these sherds are rounded, and rolled outward; at the lip, the sherds are 0.9 cm. thick. Shoulders appear at a sharp angle to the line of the body, averaging about 0.5 cm. thick. Thickness of other parts of the vessels is unknown.

The Oneota pottery is tempered with mussel-shell fragments not as finely pulverized as those employed in Ramey Incised. Vessel surfaces were smoothed on these specimens. Individual sherds exhibit a moderate degree of polish. Decoration is confined to the lip, shoulder, and upper body. Decoration of the upper body was noted only occasionally. It appears that decoration had been intended to terminate on the shoulder. Two to four loop or strap handles might occur on these pots. Decoration frequently appears on the handles. The lip decoration consists of notching with the fingers or with an implement of unidentified type. The loop handles are plain or notched, much in the same way as the lip. Strap handles are incised or fluted (grooved longitudinally, apparently with the fingers). Body decoration consists of simple, rectilinear designs made up of fine incised lines, broad trailed lines, and small punctates.

Cordmarked Body Sherds

The types described above are composed largely of rimsherds, decorated sherds, or other sherds with outstanding special characteristics. Most of the pottery examined consisted of body sherds. Four major classes of cordmarked body sherds usually could be distinguished for those sites where collections were large.

The most distinctive type of cordmarked body sherd is that which occurs on Minott's Cord-Imprinted vessels. These sherds are least likely to be confused with sherds of the other classes. Their distinctiveness is

the result of the use of the coarse cord or thong in roughening surfaces. The paste and tempering are identical to those of the Minott's Cord-Imprinted type. Thickness has been indicated in describing the Minott's Cord-Imprinted sherds. No particular orientation or pattern of the individual cords is apparent. Cordmaking often resembled impressions of a textile rather than impressions of a cord-wrapped paddle. A similar pattern was observed on sherds of the Madison Cord-Imprinted pots.

Cord marks on Madison Cord-Imprinted pots were often arranged parallel to each other on the shoulder area, and are lacking in orientation on the body from a point just below the shoulder down over the body and base. On the shoulder the parallel cord marks are perpendicular to the line of intersection of shoulder and neck. These sherds were partially smoothed over the cord marks, although this attempt at smoothing might be only slight.

Two other classes of cordmarked body sherds can be distinguished. One is known to be associated with the Spring Hollow Cordmarked, Levsen Stamped, and Levsen Punctated types. These sherds are relatively thin, and the cord marks tend to be arranged in parallel vertical lines on the vessel surface. Some crisscrossing of cords is evident, although this is not as apparent as in the types described above. In addition, the cords evidently were more widely spaced on the element around which they had been wrapped. Smoothing over the cordmarked surface is apparent, and this helped to produce rather wide bands between the individual cord imprints. The sherds closely resemble the Weaver Cordmarked type of Illinois (Griffin, 1952b, pp. 121, 127, pl. XXXVII). Cord marks on some specimens of this class are more closely spaced than on others, producing borderline examples which are nearly indistinguishable from the sherds considered characteristic of vessels of Madison Cord-Imprinted type.

The fourth class of cordmarked body sherds resemble the preceding class. These sherds are thicker and, as a general rule, a greater amount of smoothing had been performed, almost obliterating the cord imprints. They resemble Havana Cordmarked sherds. (*ibid.*, pp. 101-104, pl. XXXII A, E).

WARE GROUPS

During the course of ceramic analysis it became apparent that the types bear varying degrees of relationship. Broad classes seem to exist, each composed of several types sharing general characteristics. Definition of larger classes was attempted as a convenient means of handling the types in comparative discussion. Three of these larger groupings are readily apparent.

One evidently is a local extension of what has been called Havana Ware in Illinois (Fowler, 1952, pp. 146-147). It is composed of Neteler Stamped, the Naples types, Havana Zoned, Havana Cordmarked, Steuben Punctated and Hummel Stamped.

A second group of related types is composed of Spring Hollow Plain, Spring Hollow Cordmarked, Spring Hollow Incised, Levsen Stamped, and Levsen Punctated. Although this group of types was designated Linn Ware, there are obvious resemblances to the Weaver Ware of Illinois. Eventually it may be possible to merge the two wares.

The third group consists of the single-cord decorated types: Madison Cord-Imprinted, Minott's Cord-Imprinted, Lane Farm Cord-Imprinted, and sherds with rim collars and outer rim nodes. This group evidently belongs to the Lake Michigan Ware of Wisconsin. To this group, also, could be added the Minott's Plain type, although the sherds are not decorated with cords. Lane Farm Cord-Imprinted is a borderline case. Although it is decorated with single cords, the preponderant body treatment involved the application of dentate or plain rocker stamping. Paste characteristics also differ

slightly from those of Minott's Cord-Imprinted. Paste characteristics and body treatment resemble those of Linn Ware. Characteristics of form also differ slightly from those of the true Lake Michigan types.

None of the ware groupings are completely mutually exclusive in character, however, and borderline cases can be found in individual specimens within any of the classes. The Levsen Stamped type resembles Naples Stamped in decorative features. In rim form, in the appearance of the notched lip, and in thinness of the vessel walls, this type most clearly resembles Spring Hollow Plain and Spring Hollow Cordmarked. Therefore, it is grouped with these under Linn Ware.

The ware groupings are defined on the basis of characteristics of paste, form and decorative technique shared by the various groups of types. The characteristics of the three groups are presented below.

Havana Ware

Generally coarse paste, including large, coarse, angular fragments of crushed rock temper. Vessel walls are thick, usually around 1.0 cm. Known vessel forms are deep, elongate jars with nearly straight rims, a slight shoulder expansion, and conoidal or rounded conoidal base (fig. 95b). Decoration was usually arranged in zones and carried out by stamping, incising or punctating.

Linn Ware

Paste is often much finer than in Havana Ware. Temper particles are smaller (average below 0.1 cm.). Vessel walls are thinner, but may occasionally approach the thickness of some Havana sherds. Bodies of pots tend to be more globular, and bases to be rounded or conoidal. Lips are rounded or flattened, or sometimes slightly everted as in Levsen Punctated. Rims are straight or slightly flaring. Vessels expand in diameter at shoulder

more markedly than is characteristic of Havana specimens (fig. 95a, c, f, g). Decoration combines stamping, punctating, and incising in zones.

Lake Michigan Ware

Fine, hard paste with fine crushed rock or sand temper. Walls of a majority of vessels are very thin. Vessels were generally globular in form with rounded conoidal or round bases. Necks are straight and vertical, and rims might be straight or slightly flaring, especially from upper rim to lip. Lips are rounded, flattened, and notched. Orifices might be squared and rims pointed at the angles of the square. Nodes of some specimens appear on the outer rim below the rim points; some rims are collared. A criss-crossed pattern of cord marks, sometimes resembling textile imprints on the outer surface of vessels, is also characteristic of the ware. Decoration is carried out in single-cord impressions, sometimes combined with small punctates.

Unclassified Types

The Spring Hollow Brushed and Marion Thick types were not included in the differentiated categories. These types, particularly Spring Hollow Brushed, appear to be related to Havana Ware. Marion Thick, on the other hand, differs markedly from all others, and perhaps could be placed in a separate ware. Such a class would be represented by only one type, and little merit was seen in creating such a category.

CHIPPED STONE ARTIFACTS

Triangular projectile points:

Large triangular points (fig. 70a-c), length: 4.0 to 6.0 cm., width: 2.0 to 3.0 cm. (at base). These are large, biconvex points. The base is flat, and the sides of the blade usually are straight from base to tip, although the sides

of some specimens describe a convex curve from base to tip. Distribution: Spring Hollow Rock Shelter No. 2; Minott's Rock Shelter; Mouse Hollow Rock Shelter; Crabtown Rock Shelter; Harpers Ferry Mound Group, Valley Mound (found in mound fill); Gingerstairs Rock Shelter No. 2; Harvey's Island Mound 2. Number of specimens: 20.

Small triangular points (figs. 47g, 70d-g), length: 2.5 to 4.0 cm., width: 1.5 to 1.7 cm. (at base). These are small triangular points made on thin flakes. Some were flaked completely over the surface leaving no evidence of the original surface. Others appear to have been retouched on the edges only. The bases are flat, slightly concave, or convex. The sides of most blades are straight, but are convex on a few specimens. Distribution: Spring Hollow Rock Shelter No. 1; Spring Hollow Rock Shelter No. 2; Gingerstairs Rock Shelter No. 1; Gingerstairs Rock Shelter No. 2; Minott's Rock Shelter; Elephant Site; Highway Thirteen Rock Shelter; Waterville Rock Shelter; Sixteen Rock Shelter; Jeffrey Edwards Creek Rock Shelter; Crabtown Rock Shelter; Knight Site; Lane Farm Mound 1; Lane Farm Mound 16; Hog Back Mound 1; Bentley Mound. Number of specimens: 107.

Small triangular points with side notches (figs. 47e, f, 70h-l), length: 2.5 to 4.0 cm., width: 1.5 to 2.0 cm. (at base). These are small triangular points differing from others in the possession of small side notches chipped at right angles to the long axis of the blade. There are usually two small notches, one on each side of the point about one-third of the length above the base. The bases are flat, concave, slightly convex, or notched. The sides of most blades are slightly convex in a smooth curve from shoulder to point, but are straight on others. Specimens from several sites are somewhat crude and thicker than the examples de-

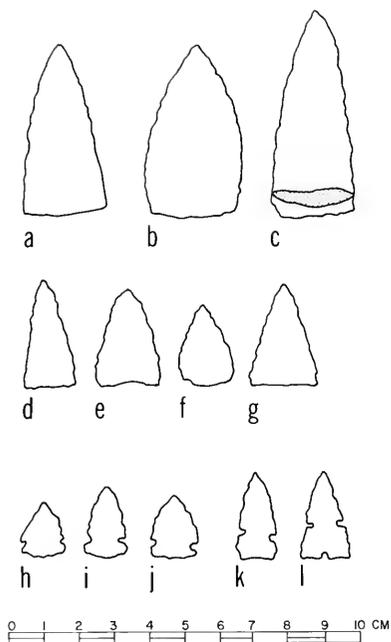


Figure 70. Triangular and triangular side-notched projectile points.

scribed here. These specimens are biconvex in cross-section and resemble the larger projectile point forms in technique of manufacture. Similar examples are illustrated by Cole and Deuel (1937, p. 195, fig. 37) from the Maples Mills complex of Illinois. Distribution: Spring Hollow Rock Shelter No. 2; Gingerstairs Rock Shelter No. 1; Gingerstairs Rock Shelter; Elephant Site; Waterville Rock Shelter; Sixteen Rock Shelter; Levens Rock Shelter; Mouse Hollow Rock Shelter. Number of specimens: 67.

Ovoid projectile points (figs. 47b, 71a-d):

Small series: length: 2.5 to 4.0 cm., width: 1.5 to 2.5 cm.

Artifact Types

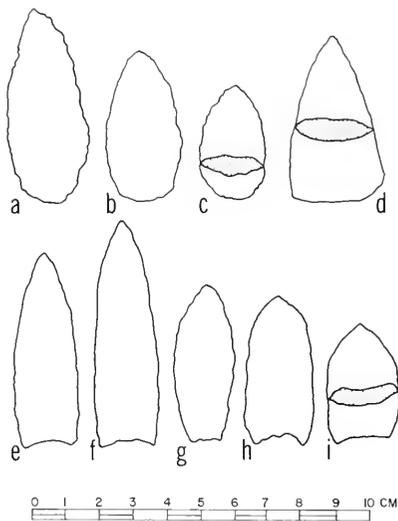


Figure 71. Ovoid and lanceolate projectile points.

Large series: length: 5.0 to 6.0 cm., width 2.8 to 3.5 cm. These are ovoid points, or perhaps, in the case of the large specimens, knives. The base was round and the sides of the body were convex in a curve from the base to a rounded tip. The cross sections were thick and biconvex. These points were crude and coarsely flaked. Some were steeply retouched along the edges of the blade. Distribution: Spring Hollow Rock Shelter No. 2; Minott's Rock Shelter; Levensen Rock Shelter; Mouse Hollow Rock Shelter; Crabtown Rock Shelter; Hog Back Mound 1; Hog Back Mound 3. Number of specimens: 20.

Lanceolate projectile points (fig. 71e-i): length: 5.0 to 8.0 cm., width: 2.3 to 2.5 cm. These are leaf-shaped points, usually regularly chipped and symmetrical in form, thin and biconvex in cross section. They resemble Early Man point types in form and qual-

ity of workmanship. Bases are concave to flat. The blades are either parallel-sided or curving sharply to a tip from a point near the tip; or are bounded by a smooth convex curve from base to tip. The latter specimens are widest at a point one-half to two-thirds of the point's length from the base. A second form is shorter and resembles the Folsom type in outline. The latter type was ground on the basal area. Five examples within the longer variety were ground on the base and sides of the lower part of the blade. Within the longer class, one point conforms to the Dalton type which appears in Missouri Archaic sites (Chapman, 1948b, pp. 138-140). Some specimens with small flutes in the faces of the blades resemble Clovis Fluted points. Unfluted specimens bear a general resemblance to the lanceolate points reported from Starved Rock (Mayer-Oakes, 1951, pp. 316-317). Distribution: Spring Hollow Rock Shelter No. 2; Elephant Site; Waterville Rock Shelter; Jeffrey Edwards Creek Rock Shelter; Pine Run Rock Shelter; Levensen Rock Shelter; Mouse Hollow Rock Shelter; Pufahl Site, Allamakee County; Gingerstairs Rock Shelter No. 2; miscellaneous sites in Winnesheik County. Number of specimens: 30.

Side-notched projectile points (figs. 47a, 72a-d): length: 6.0 to 10.0 cm., width: 2.0 to 3.0 cm. These were large heavy points with long and sometimes broad blades with side-notches. The bases were flat to slightly concave and the sides of the blades tapered from the shoulder above the notches in a smooth curve to the tip. The sides of the bases were parallel. The side-notches were chipped at right angles to the long axis of the point. The form with concave base resembled points found in the Archaic deposits in Graham Cave in Missouri (Logan 1952a: 30-33, Plate V, F-L, Plate VI, A-C). The flat-based examples resembled Black Sand points (Cole and Deuel 1937: Fig. 28, 140). Distribution: Spring Hollow Rock

Shelter, No. 2; Elephant Site; Waterville Rock Shelter; Jeffrey Edwards Creek Rock Shelter; Pine Run Rock Shelter; Levsen Rock Shelter; Mouse Hollow Rock Shelter; Pufahl Site, Allamakee County; Gingerstairs Rock Shelter, No. 2; miscellaneous sites in Winnesheik County. Number of specimens: 30.

Straight-stemmed projectile points (fig. 72e-i): length: 4.8 to 10.8 cm., width: 2.0 to 3.0 cm. These specimens have flat bases and parallel-sided stems. The shoulders are straight and at right angles to the long axes of the points. Rare specimens have rounded barbs chipped at an oblique angle. Shoulder expansion is slight. The blades in this class are long, usually narrow, and with sides which taper in a smooth curve from shoulder to tip. The cross section is thick and biconvex in most examples, slightly thinner in others. The points were made on thick, elongate blades by percussion flaking techniques. Some pressure retouch is apparent along the edges of blades and around the basal area. On the larger specimens the length of the stem usually does not exceed one-third of the overall length; on smaller examples stem length is usually between one-third and one-half of the total length. Distribution: Gingerstairs Rock Shelter No. 1; Elephant Site; Waterville Rock Shelter; Sixteen Rock Shelter; Levsen Rock Shelter; Mouse Hollow Rock Shelter; Ryan Mound 2; Hog Back Mound 1; Hog Back Mound 3; Slinde Mound 6; Houlihan Mound; New Galena Mound 30; Knight Site; miscellaneous sites in Winnesheik County. Number of specimens: 27.

Contracting-stemmed projectile points:

Large contracting-stemmed points (fig. 73e-g), length: 5.5 to 7.5 cm., width: 2.5 to 3.5 cm. These points exhibit rounded or flat bases and stems which contract from shoulder to base. Shoulders are pronounced to

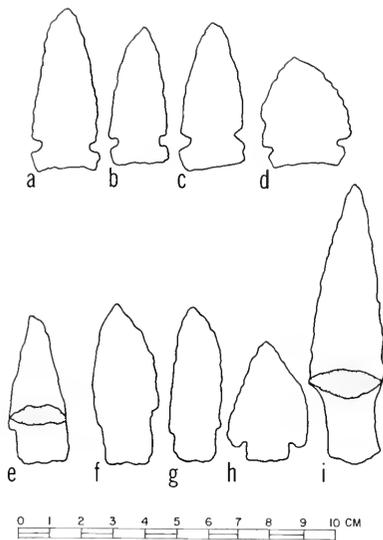


Figure 72. Large side-notched and straight-stemmed projectile points.

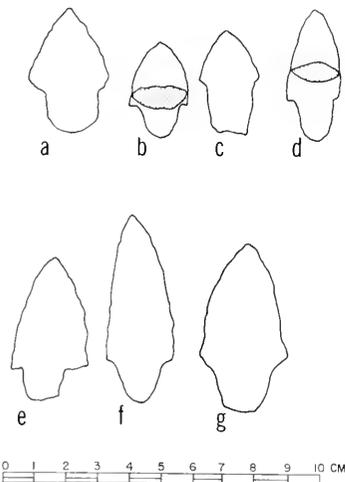
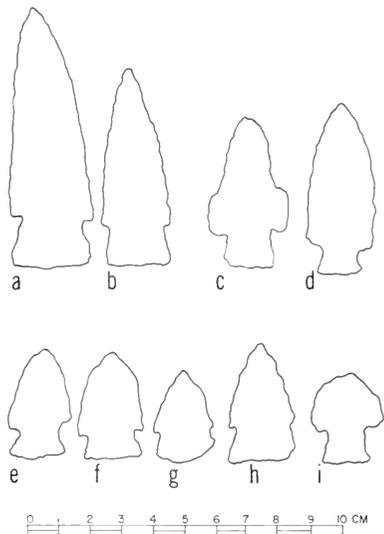


Figure 73. Contracting stemmed projectile points.

Artifact
Types

slight. The shoulder might be at right angles to the long axis of the point, or at an oblique angle. The latter variation produced shoulders which merge gradually with the stem outline. The edges of the blade describe a smooth convex curve from shoulder to tip. The length of the stem is about one-fourth to one-third of the overall point length. The points were made on thick blades, employing a percussion flaking technique. Pressure retouching appears on blade edges and base. Flake scars are large, producing a crude appearance. Cross sections are thick and biconvex. Distribution: Gingerstairs Rock Shelter No. 2; Minott's Rock Shelter; Elephant Site; Highway Thirteen Rock Shelter; Sixteen Rock Shelter; Jeffrey Edwards Creek Rock Shelter; Levens Rock Shelter; Mouse Hollow Rock Shelter; Brazell's Island Bear Effigy; Lanesville Hopewell Mound; Martell Mound 3. Number of specimens: 24.

Figure 74. Expanding-stemmed projectile points.



Small contracting-stemmed points (fig. 73a-d), length: 3.6 to 5.0 cm., width: 2.0 to 3.0 cm. The specimens are thick, biconvex, and short in length. In most essentials of form this point differs little from the larger contracting-stemmed variety. One difference is the appearance of occasional small barbs at the shoulder in place of a straight shoulder or a weak shoulder slanting toward the tip of the point, although the latter two shoulder forms do appear on a few specimens. Size is the basic distinguishing characteristic. Stem length is about one-half to one-third of the overall length. Distribution: Spring Hollow Rock Shelter No. 2; Lane Farm Mound 16; Houlihan Mound; Big Lake Site, Crawford County, Wis.; Nelson Dewey Site. Number of specimens: 6.

Expanding-stemmed projectile points:

Large expanding-stemmed points (figs. 471, 74a-d), length: 6.0 to 10.0 cm., width: 2.5 to 3.0 cm. These are thick, biconvex, heavy points with flat bases and stems expanding from the shoulder to the base. Shoulders are either straight or barbed. Blade sides taper in a flat convex curve to the tip. The points were made by coarse percussion flaking which produced deep scars in the faces of the blades. Some pressure retouching appears on the edges of the blade and the basal area. The length of the stem is about one-fifth to one-sixth of the total length. Distribution: Spring Hollow Rock Shelter No. 2; Levens Rock Shelter; Mouse Hollow Rock Shelter. Number of specimens: 37.

Small expanding-stemmed points (fig. 74e-i), length: 3.5 to 4.5 cm., width: 2.5 to 3.0 cm. These differ from the large expanding-stemmed form in size only and the ratio of stem to blade length. They are thick, biconvex and crudely flaked. Bases are flat to slightly convex. Stem length is about one-third of the overall point length. Distribution: Levens Rock Shelter; Spring Hollow

Rock Shelter No. 2; Elephant Site; Highway Thirteen Rock Shelter; Brazell's Island Bear Effigy; High Bank Site; miscellaneous sites in Winnesheik County. Number of specimens: 28.

Corner-notched projectile points:

Large corner-notched points (figs. 47c, 75a-c), length: 5.0 to 8.0 cm., 13.5 to 23.3 cm., width: 3.0 to 5.0 cm., 7.5 to 9.0 cm. This type has been called Snyders Notched in a publication which presents definitions of a number of Illinois point types (Scully, 1951, p. 12). Local Iowa specimens conform closely to the description of the Illinois variety. The points exhibit deep corner-notches, rounded in outline and producing a barbed appearance. The base is rounded and the sides of the blade describe a convex curve from shoulder to tip. The widest part of the point is usually at or slightly above the shoulder. Evidently these points had been made on an ovoid blank form. There was some evidence for this in burial mounds in which such blanks were found, sometimes in association with the corner-notched points. The length of the stem varies from about one-eighth to one-fourth the total length of the point. In form, flaking characteristics, and ratio of stem length to overall length, these larger specimens were identical to the smaller varieties from the habitation sites. Some of the larger specimens were made from stone which appears not to be of local origin. Most common of these stone types is a brown chaledony. Other examples were made from a pink-and-white mottled quartzite or local flint. Distribution: Harvey's Island Mound 2; Brazell's Island Bear Effigy; Luth Mounds 2 and 3; Lane Farm Mounds 3 and 16; Knight Mound; Minott's Rock Shelter; Elephant Site; Nelson Dewey Site; Waterville Rock Shelter; Levens Rock Shelter; Mouse Hollow Rock Shelter; site on south end of Prairie du Chien Terrace; High Bank Site;

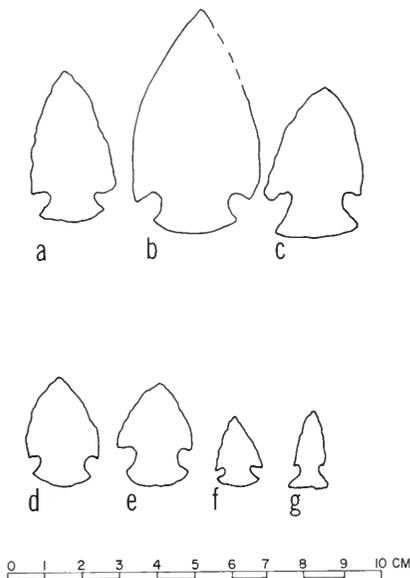


Figure 75. Corner notched projectile points.

Lanesville Hopewell Mound; Gingerstairs Rock Shelter No. 1; miscellaneous sites in Winnesheik County; Sny-Magill Mound 43 (Beaubien, 1953, p. 59, fig. 21a); Mound 55, Effigy Mounds National Monument (*ibid.*, fig. 23b-c). Number of specimens: 40 (includes six large "ceremonials" from burial mounds).

Small corner-notched points (figs. 47d, h, 75d-g), length: 2.4 to 3.8 cm., width: 1.6 to 2.5 cm. This series seems significantly smaller than the large corner-notched examples described above. In form and other characteristics the two types are nearly identical. The stem length of the small corner-notched form is about one-third the overall length of the point. Some examples were made on flakes with a thinness approaching that of the small triangular and triangular, side-notched forms. Distribution: Spring

Artifact
Types

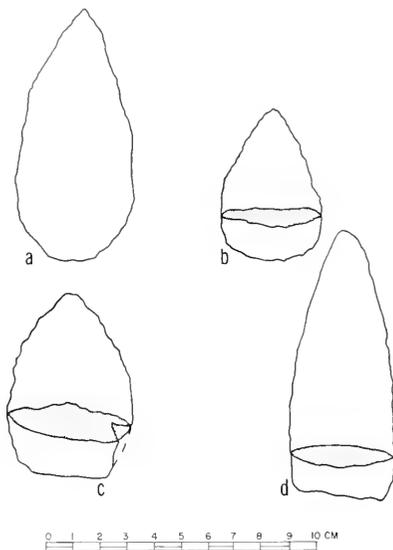


Figure 76. Large ovoid lanceolate blades.

Hollow Rock Shelters No. 1 and No. 2; Gingerstairs Rock Shelter No. 1; Minott's Rock Shelter; Elephant Site; Levensen Rock Shelter; Mouse Hollow Rock Shelter; Crabtown Rock Shelter; miscellaneous sites in Winnesheik County. Number of specimens: 31.

Several varieties of large stemless blades are included in the category of knives. Some classes are well-made and carefully flaked. Others are crude and thick in cross section with deep flake scars over the surface. All blades classed as knives are of types which have been so classified by archeologists in regions surrounding Iowa. Although function is unknown for these specimens, it is believed best to retain the knife classification for the sake of uniformity in presentation of the material.

Large round-based knives (fig. 76a-b): length: 5.0 to 12.3 cm., width: 2.5 to 7.0 cm. Only four specimens are complete; hence the measurements above probably do not

accurately reflect the range in size within this class. These blades are crude with round bases and sides which curve in a somewhat irregular convex arc from base to tip. The cross section is thick, biconvex, and irregular in form. Distribution: Spring Hollow Rock Shelter No. 2; Gingerstairs Rock Shelter No. 1; Minott's Rock Shelter; Elephant Site; Sixteen Rock Shelter; Mouse Hollow Rock Shelter; Knight Site; Slinde Mound 7. Number of specimens: 24.

Large flat-based knives (figs. 52n, 76c, d): length: 5.8 to 9.5 cm., width: 3.5 to 4.8 cm. These blades resemble the round-based class in outline, cross section, and in flaking characteristics. They tend to be triangular in form, with flat bases and sides tapering in an irregular straight or curved line to the tip. Distribution: New Galena Mound 1; Spring Hollow Rock Shelter No. 2; Minott's Rock Shelter; Elephant Site. Number of specimens: 6.

Oval knives (figs. 52l, m, o, 77): length: 6.4 to 11.1 cm., width: 2.2 to 4.2 cm. These are carefully flaked elongate oval blades, rounded or pointed at either end. Occasional specimens are steeply retouched along one or two edges. Cross sections are thin and biconvex. Two specimens show a vague resemblance to the diamond-shaped beveled knife common in sites of the central Plains. Distribution: Sixteen Rock Shelter; Minott's Rock Shelter; Mouse Hollow Rock Shelter. Number of specimens: 11.

Lanceolate and ovoid blades (fig. 52m-o): Among the classes of grave goods found in the northeastern Iowa mounds are large leaf-shaped and ovoid chipped-stone blades (fig. 11c, d). They are superior in workmanship to those found in village sites. Two types were found.

Lanceolate blades. Length: 14.0 to 28.4 cm., width: 4.3 to 6.0 cm. These specimens are thin and biconvex in cross section and were

very regularly chipped. They are pointed at either end and the widest part of the blade is near the midpoint of the long axis. Ten specimens recovered from French Town Mound 10 were made from a fine, blue-gray flint, varying only slightly less than 1 cm. in length. The width of the blades varies within similar narrow limits. The largest specimen was made from a fine mottled-pink flint. This flint appears to have been derived from an unknown local source, for it was in common use for chipped stone implements. The large blade was found in Ryan Mound 2. Two similar examples were found in Sny-Magill Mound 3 (Beaubien, 1953, pp. 59-60, fig. 21d-e). They were made from the same mottled-pink flint and resembled the "Red Ocher" blades found in Illinois (Cole and Deuel, 1937, p. 66, fig. 19, pl. IV, Type 2). Distribution: Ryan Mound 2; French Town Mound 10; Sny-Magill Mound 43. Number of specimens: 13.

Ovoid blades. Length: 10.2 to 14.2 cm., width: 4.7 to 6.5 cm. These are large ovoid specimens, thin and biconvex in cross section, with rounded bases, and smoothly curving edges. Flaking is regular over the surface and the flake scars are shallow. Some pressure retouching was noted along the edges. Flint used evidently was foreign to the northeastern Iowa area. One series of blades was made from the blue-gray material described for the lanceolate blades from French Town Mound 10. Others were made from pink, mottled quartzite or brown, translucent material. Distribution: Ed Thompson Mound; Luth Mound 3; Pleasant Creek Mound 2; miscellaneous surface finds in Allamakee County. Number of specimens: 12.

Flake knives:

Ribbon flake. Length: 3.0 to 7.5 cm., width: 1.0 to 3.3 cm. These are elongate prismatic flakes retouched along the edges, and ap-

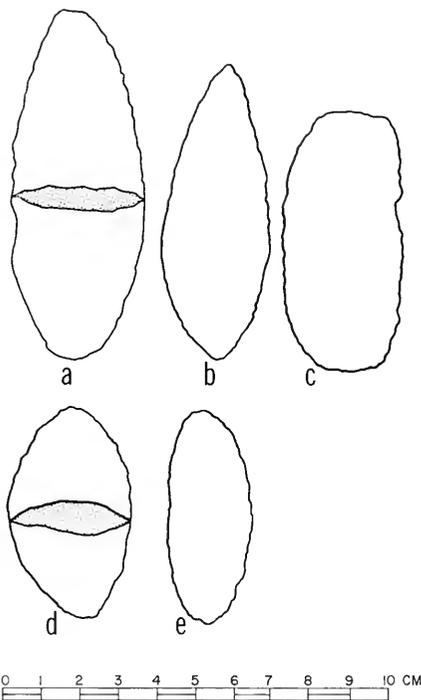


Figure 77. Oval knives.

pear to have been used as cutting tools. Cross sections were triangular or trapezoidal. Distribution: Spring Hollow Rock Shelters No. 1, No. 2, and No. 3; Minott's Rock Shelter; Waterville Rock Shelter; rock shelter in the southeast quarter of Section 17, Township 85 North, Range 2 East, Jackson County; Mouse Hollow Rock Shelter; Big Lake Site, Crawford County, Wis. Number of specimens: 21.

Irregular flake (fig. 52p). Length: 2.2 to 6.0 cm., width: 1.9 to 4.1 cm. These are irregular, trapezoidal or polygonal flakes with light retouch along one or more edges indicating possible use as cutting tools. Cross

sections of these are irregular. Distribution: Spring Hollow Rock Shelters No. 1, No. 2, and No. 3; Minott's Rock Shelter; Sixteen Rock Shelter; Highway Thirteen Rock Shelter; Elephant Site; Waterville Rock Shelter; site at the south end of the Prairie du Chien Terrace; Mouse Rock Shelter; Gingerstairs Rock Shelters No. 1 and No. 2; Crabtown Rock Shelter. Number of specimens: 81.

Spokeshaves: length: 3.0 to 5.0 cm., width: 2.5 to 3.0 cm. These appear to be scraping and cutting instruments developed for scraping and shaving cylindrical objects. A crescent-shaped, concave curve had been produced on one side by pressure retouching, perhaps through use. They resemble the large spokeshave found in Graham Cave in Missouri (Logan, 1952a, pp. 42-43, fig. 6). Distribution: Minott's Rock Shelter; Sixteen Rock Shelter; Spring Hollow Rock Shelters No. 1 and No. 2; Gingerstairs Rock Shelter No. 2. Number of specimens: 7.

Expanding base drills (figs. 12a and 23e): length: large series: 4.4 to 6.8 cm., small series: 2.7 to 4.0 cm., width: large series: 1.8 to 2.5 cm., small series: 1.2 to 2.3 cm. These implements were chipped to a diamond-shaped cross section along the point. The base expands from the point into a rectangular or triangular area. Two are notched from the sides on the basal area. The bases are flat, concave, or rounded. One extraordinarily large specimen was associated with the burials in French Town Mound 10. The entire small series was found in the Mouse Hollow Rock Shelter. The size range and type of workmanship of the Mouse Hollow specimens resemble that of the small triangular projectile points. Distribution: Levsen Rock Shelter; Mouse Hollow Rock Shelter; Brazell's Island Bear Effigy; French Town Mound 10. Number of specimens: 14.

Planoconvex scrapers (figs. 23a, b, 47j-k): length: 2.7 to 6.9 cm.; width: 2.1 to 5.1 cm.

These tools are oval in form and exhibit "turtleback-like," planoconvex cross sections. They were flaked over the entire dorsal surface and steeply retouched along the edges and the widest end. The ventral surface consists of a single plane, apparently achieved in the initial fracture of the flake from the flint core. Another series of these was made on thin flakes, but aside from their thinness they were like the thicker specimens in all characteristics. Distribution: Spring Hollow Rock Shelters No. 2 and No. 3; Minott's Rock Shelter; Elephant Site; Sixteen Rock Shelter; Mouse Hollow Rock Shelter; High Bank Site. Number of specimens: 52.

Choppers: length: 5.1 to 8.3 cm., width: 3.3 to 6.3 cm. These are rough irregular core tools battered to a sharp chopping or cutting edge on one side by the removal of large flakes. Distribution: Spring Hollow Shelter No. 2; Gingerstairs Rock Shelter No. 2; Minott's Rock Shelter; Sixteen Rock Shelter; Levsen Rock Shelter. Number of specimens: 8.

Adzes or celts: length: 4.9 to 15.0 cm., width: 2.5 to 7.5 cm. These are a series of large, coarsely flaked, thick, biconvex tools. The form varies from rectangular to trapezoidal. The cutting edge and opposing end arc are rounded or flat. The cutting edge of a few specimens is splayed. One specimen is beveled more steeply on one side of the cutting edge than on the other. This particular example may have served as an adze rather than a celt. In other characteristics of form, it resembles the remainder of the objects studied. Distribution: Mouse Hollow Rock Shelter; New Galena Mound 15; Hog Back Mound 3; Mud Hen Joe Mound 1. Number of specimens: 7.

GROUND AND PECKED STONE ARTIFACTS

As in the case of the chipped stone artifacts,

the groupings produced through analysis of the collections in the ground and pecked stone category were descriptive classes. The names employed for the several ground and pecked stone items described are those traditionally assigned to such objects.

Full grooved axe: length: 9.1 cm., width: 8.9 cm., thickness: 2.7 cm. This ax, found at the Elephant Site, was made from gabbro or basalt, and was ground smooth over the entire surface, including the groove itself. It is small, narrow in cross section, and almost square in form. It does not appear to have been reground from a larger specimen as were other examples in collections from Allamakee and Clayton Counties. No data other than a general northeastern Iowa provenience were available for the latter specimens.

Three-quarter grooved axe: dimensions unobtainable. This specimen, found in Mouse Hollow Rock Shelter, was grooved laterally around the two sides and the bottom. A slight longitudinal groove was noted at the top.

Celts: length: 11.6 cm., width: 6.0 cm. A crude, seemingly unfinished, ungrooved axe; a small rectangular celt made from hematite; and a crude limestone celt-like implement comprise the specimens in this category. The crude unfinished specimen shows evidence of smoothing and grinding but is not sharpened on the bit. The celt-like limestone specimen resembles the so-called "spud" found in Wisconsin Effigy Mound sites (Rowe, 1956, pp. 53-55, figs. 26 and 54). Distribution: Knight Mound; New Galena Mound 23; Manning Site near Lansing, Iowa. Number of specimens: 3.

Anvil stones (fig. 78): length: 6.2 to 14.6 cm., width: 5.6 to 8.7 cm. These are oval, rectangular or irregular pebbles of sandstone, limestone, or harder rocks with small shallow circular depressions pecked in one

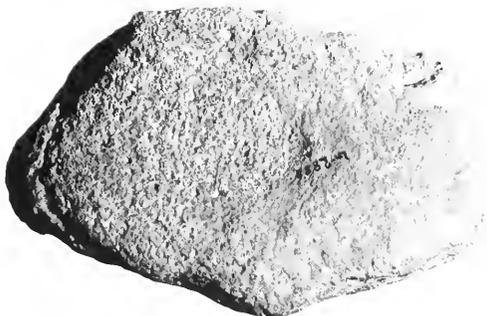


Figure 78. Anvilstone from Minott's Rock Shelter (UMMA Neg. No. 12735).

or both surfaces. Distribution: Spring Hollow Rock Shelters No. 2 and No. 3; Minott's Rock Shelter; Levens Rock Shelter; Mouse Hollow Rock Shelter. Number of specimens: 7.

Pestles or Manos: length: 11.9 cm., width: 7.4 cm. These are rocks of oval or irregular polygonal form showing evidence of grinding on one or both plane surfaces. They were sometimes pecked slightly on the edges. Measurements are available on one specimen only. Distribution: Spring Hollow Rock Shelter No. 2; New Galena Mound 16. Number of specimens: 2.

Hammerstones: diameter: ca. 8.0 to 11.0 cm. A number of spherical, near spherical, or elongate stones had been pecked and battered over their entire surface indicating possible use as hammers. Gabbro, or similar stone was sometimes used, but flint or quartzite appeared to be the common material employed for these implements. Distribution: Spring Hollow Rock Shelters No. 1, No. 2, and No. 3; Gingerstairs Rock Shelter No. 2; Minott's Rock Shelter; Nelson Dewey Site; Mouse Hollow Rock Shelter; Big Lake Site, Crawford County, Wis.; Lane Farm Mound 11. Number of specimens: 13.

Artifact
Types

Mortar: dimensions unknown. This small, rectangular shallow mortar was found in Spring Hollow Rock Shelter No. 2. It was made from limestone with a ground depression in one side only.

Smoothed pebbles: river pebbles, or pebbles from glacial deposits were found occasionally in the collections from northeastern Iowa. Some are obviously natural. Others appear to have been smoothed by hand. Their function is unknown, but may have been employed in pottery making. Distribution: Levsen Rock Shelter; French Town Mound 10; Mouse Hollow Rock Shelter. Number of specimens: 3.

Sandstone abraders or whetstones: these are elongate or irregular sandstone fragments with grooves worn in one or more faces. They may have been used to sharpen or smooth other objects such as wood implements or bone awls and needles. Distribution: Spring Hollow Rock Shelter No. 2; Minott's Rock Shelter; Mouse Hollow Rock Shelter. Number of specimens: 3.

Boatstone (fig. 52k): length: 8.8 cm., width: 1.8 cm. A boatstone, found in Mouse Hollow Rock Shelter, was made from limestone. This long, narrow, and rectangular object widens slightly at midpoint. A very narrow groove, about 0.2 cm. wide, placed around the two sides and the top, had been worn in the specimen at midpoint. The ventral surface is ungrooved and flat, whereas the top is convex.

Sandstone tablet: dimensions unknown. A flat tablet of sandstone, smoothed and squared and with light notches worn along the edges, was found in Levsen Rock Shelter.

Stone ball: diameter: 5.0 cm. The broken half of a polished stone ball or sphere was found in the Mouse Hollow Rock Shelter.

Netsinker: dimensions unknown. This is a

grooved spherical iron concretion found in Slinde Mound 13.

Faceted hematite lumps: dimensions unknown. These are ground and faceted fragments of hematite which probably had been used as a source of red pigment. They are small and occasionally show scratches on their surfaces. Distribution: Levsen Rock Shelter; Minott's Rock Shelter. Number of specimens: 2.

Stone pipes:

Elbow pipes: length: about 6.0 cm, diameter of bowl: about 3.0 cm., height of bowl: about 5.0 cm. This small elbow pipe, made from fine limestone, was found in Hog Back Mound 1.

Platform pipes (fig. 79): length: 7.2 to about 9.0 cm., diameter of bowl: about 3.0 to 4.0 cm., height of bowl: 3.0 to 4.1 cm. These pipes exhibit a flat, platform-like base and a bowl set in the middle of the base equidistant from all sides. The base is flat or curved slightly downward. One specimen has a straight-sided bowl with a round "bead" or collar around the rim. Another has a barrel-shaped bowl, and a rounded rim collar. The bowl of the third example expands in diameter from the base to a point near the rim, where it contracts sharply. A collar around the rim results in the expansion of this area to a diameter almost equaling that of the bowl at its widest point. Fine incised lines were noted along the edges of the base on one pipe. Another was notched across the end of the base. Distribution: New Galena Mounds 23 and 27; Ed Thompson Mound. Number of specimens: 3.

BONE AND ANTLER ARTIFACTS

Bone awls:

Bone splinter awls: length: 8.5 to 13.1 cm. These are small splinters of bone sharpened at one end to produce a perforating instru-

ment. Occasional specimens are slightly burned. Although the species of animals from which the bones derived could not be identified, it appears that the mammal-bone splinters represent deer and elk. Bones from large bird species were also employed. Distribution: Levsen Rock Shelter; Waterville Rock Shelter; Sixteen Rock Shelter; Mouse Hollow Rock Shelter; French Town Mound 10. Number of specimens: 41.

Deer ulna awls (fig. 47m): length: 10.1 cm. (measurement available for one specimen only). These perforating implements were made from the proximal ends and part of the shafts of deer ulnae. The articulating surface was left intact and the shaft was split and worked to a blunt point. Distribution: Spring Hollow Rock Shelter No. 2; Hog Back Mound 1. Number of specimens: 2.

Deer metapodial awls (fig. 11a): length: 11.2 to 15.1 cm. These awls were made from deer metapodials in which the proximal end was left intact and the shaft beveled to a point. The bones of young animals seem to have been employed in making these awls, for the bones had separated at the epiphyses. Distribution: Levsen Rock Shelter; French Town Mound 10. Number of specimens: 6.

Deer scapula awls: length: 12.5 to 13.3 cm. In making these tools deer scapulae were split longitudinally. The short shaft of the scapula had been ground and smoothed to a point. Eight were found in the Levsen Rock Shelter.

Raccoon splanchnic awl: length: 9.1 cm. This was made by sharpening the distal end of a raccoon splanchnic. It was found in Levsen Rock Shelter.

Ulna awl: length: 17.8 cm. This specimen from the Levsen Rock Shelter was made from the ulna of a small unidentified mammal. Its manufacture involved a technique



Figure 79. Platform pipes from the New Galena Mound Group (UMMA Neg. No. 12710).

similar to that used in making deer ulna awls.

Tibia awl: length: 11.2 cm. This specimen from the Levsen Rock Shelter was made from the distal end of a tibia (animal unidentified). The distal end is intact and the shaft was beveled to a point.

Bird longbone awls: length: 7.7 to 14.9 cm. These were made from bird long-bones which had been beveled to a point at one end. The ends of the bones are missing. Distribution: Levsen Rock Shelter; French Town Mound 10. Number of specimens: 3.

Bone needles: length: 10.0 to 11.1 cm. These were made from thin bone splinters which were polished, sharpened, and perforated at the unsharpened end to produce an eye. A wider form was found which resembled these but it was made from half of a split bird bone. Three were found in the Levsen Rock Shelter.

Flesher (fig. 80c): length: 27.7 cm. This im-

Artifact
Types

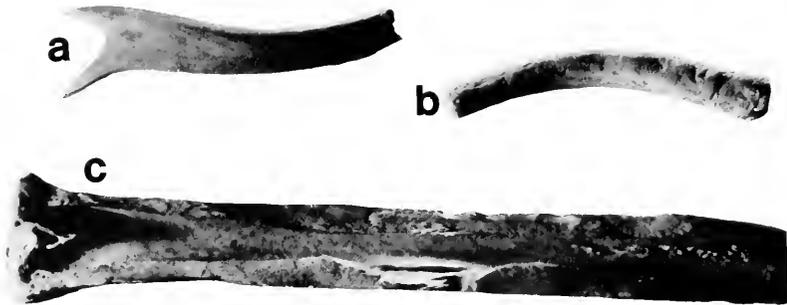


Figure 80. Bone and antler objects from the Levensen Rock Shelter (UMMA Neg. No. 12734).

plement was made from an elk metapodial which was split longitudinally leaving the proximal end intact; the bone has separated at the epiphysis. The shaft was beveled to produce a cutting or scraping edge, which was highly polished as though the tool had been subjected to considerable use. One was found in the Levensen Rock Shelter.

Deer scapula hoes: dimensions unknown. The scapulae were unmodified except for light polish along the rounded edge of the distal end. Three were found in the Sixteen Rock Shelter.

Bone whistle: length: 6.1 cm. This whistle from the Levensen Rock Shelter was made from a section of the wing of a large bird. It was hollowed out and notched near one end producing a small hole in the bone.

Bone tubes: length: 7.0 cm. (one specimen only; others broken). The tubes were cut from bird longbones and polished. Three were found in the Levensen Rock Shelter.

Polished turtle plastron square: length: 7.3 cm., width: 6.0 cm. This squared and polished section of turtle plastron was found in Highway Thirteen Rock Shelter. Objects of this kind have been called "meshspreaders" in reports on Wisconsin Effigy Mound sites (Rowe, 1956, p. 57). However, they should

be considered problematical forms. They may have been intended for ornamental purposes.

Notched deer phalanges: these have been hollowed out at the proximal end and notched. Five were found at the Levensen Rock Shelter.

Polished bone fragments: these are fragments of polished mammal bones. All were parts of larger objects which had been broken and whose nature was unknown. Three were found in the Levensen Rock Shelter.

Cut human bones: two cut human bones were found in Deppe Mound 8. One is a section of skull cut in a circle; the other, a cut and incised longbone fragment.

Carnivore canines: these were derived from small carnivores of unidentified species. One is notched on the root; the other is perforated through the root. Distribution: French Town Mound 4; Minott's Rock Shelter.

Bear canines (fig. 41a, b): some of these specimens were perforated in the root, and others in one side of the enamel. The perforations are conical in form and were drilled at right angles to the longitudinal plane of the tooth, or at an oblique angle to

it. When drilled in one side, two perforations meet beneath the surface to form a small hole. Both perforated and unperforated specimens were found in mounds in association with burials. Distribution: Harvey's Island Mound 3; New Galena Mounds 3 and 28; Lanesville Mound; reported by Beaubien (1953, p. 64, figs. 23 and 62) from Mound 55, Effigy Mounds National Monument; Luth Mound 1; Ed Thompson Mound. Number of specimens: 14.

Antler tip awls: the tips of these specimens were sharpened and polished to produce pointed instruments which may have been used as awls. No information on length was available; all were broken. Distribution: Mouse Hollow Rock Shelter; Spring Hollow Rock Shelters No. 1 and No. 2; Levensen Rock Shelter. Number of specimens: 10.

Antler flakers: length: 6.1 to 17.1 cm. These antler tines were battered and haphazardly cut on and near the point. The tips had been unmodified except for these marks. They may have been employed in flaking flint or similar stone. Distribution: Mouse Hollow Rock Shelter; Spring Hollow Rock Shelter No. 2; Minott's Rock Shelter; Waterville Rock Shelter; Sixteen Rock Shelter. Number of specimens: 20.

Antler projectile points (fig. 13c): length: 6.1 to 6.6 cm. These antler tines were drilled longitudinally at the end opposite the point. They resembled the antler points reported elsewhere in the eastern United States. The hollow sockets are conical in form, and the tips appear to be unmodified. Distribution: Levensen Rock Shelter; French Town Mound 10. Number of specimens: 4.

Antler cylinder: length: 6.2 cm. This segment of deer antler, found in Levensen Rock Shelter, was deeply grooved longitudinally. The intaglio portions of the grooves were unmodified but the relief areas were incised

with fine lines. At the proximal end, the antler has been perforated through the relief areas around the circumference. The object was broken near the distal end.

Polished antler cylinder (fig. 80b): length: 12.8 cm. These two nearly cylindrical antler segments from Levensen Rock Shelter had been rounded and smoothed on the ends and rubbed to a high polish.

Socketed antler segment: dimensions unknown. One long segment of deer antler from the Levensen Rock Shelter had been hollowed out at one end to produce a socket. It may have been used as a handle.

Cut antler fragments (fig. 47l): length: 2.1 to 7.6 cm. A number of antler fragments found were cut around their circumferences and broken off, or were incised but unbroken. These may have been unfinished pieces. Distribution: Levensen Rock Shelter; Spring Hollow Rock Shelter No. 2. Number of specimens: 4.

Polished antler fork (fig. 80a): length: 12.8 cm. This is a forked antler bearing two tines found in the Levensen Rock Shelter. The area along the length of each tine of the fork and at the junction of the tines is highly polished as though another object had been rubbed continually over the area. It may have been used as an implement for softening such items as vegetable fibers, leather things, etc.

SHELL ARTIFACTS

Shell spoons (fig. 52j): length: 9.6 cm. (dimensions available on one specimen only.), width: 6.5 cm. These were made of smooth and polished freshwater mussel shells. Judging from one complete specimen, the objects had been made into a shallow, oval cup, one end of which is scalloped, producing a form suggesting the outline of a fish. The scalloped end was incised with a single fine line paralleling the margin of the

*Artifact
Types*

scallops. Short lines perpendicular to this connect the incised line and the margin of the scalloped edge. Other specimens are broken, but were notched on the end rather than scalloped. Distribution: Mouse Hollow Rock Shelter; Levsen Rock Shelter. Number of specimens: 6.

Perforated mussel shells: dimensions unknown. These are freshwater mussel shells with a small perforation drilled as though they had been intended for suspension from a cord or thong. Distribution: Spring Hollow Rock Shelter No. 2; Minott's Rock Shelter. Number of specimens: 2.

Pearl beads: freshwater pearls had been drilled longitudinally with an instrument of very small diameter, apparently for use as beads. Distribution: Highway Thirteen Rock Shelter; Mound 33, Effigy Mounds National Monument (Logan, 1971, p. 41). Number of specimens: 2.

Conch columella beads (fig. 13a-b): length: 7.6 cm. These elongate segments of conch shell were hollowed out and perforated at each end at right angles to their longitudinal axes. Distribution: French Town Mound 10. Number of specimens: 2.

Cut shell fragments: these cut and broken freshwater mussel shell fragments appear to be rejects or unfinished pieces. Distribution: Levsen Rock Shelter. Number of specimens: 2.

METAL ARTIFACTS

A few metal artifacts were found in north-eastern Iowa. Copper was the common metal employed, but reports of silver ornaments have been recorded (Starr, 1897, p. 67). Lead ore and rocks with a high iron content were also found.

Copper beads:

Short cylindrical beads: length: about 0.4 to 0.6 cm., diameter 0.3 to 0.6 cm. These were

made by rolling thin sheets of copper. Distribution: Pleasant Creek Mound 2; Houlihan Mound; Lane Farm Mound 16; Sny-Magill Mound 43 (Beaubien, 1953, p. 59). Number of specimens: 212.

Long cylindrical beads: length: about 2.0 to 4.0 cm., diameter: 0.2 to 0.4 cm. These beads were made in the same way as the short cylindrical form, but are longer. Distribution: Lanesville Mound; Ed Thompson Mound; Mound 33, Effigy Mounds National Monument (Logan, 1971, p. 41); Harvey's Island Mound 2. Number of specimens: 40.

Copper hemispheres (fig. 41c-d): length: 2.1 to 2.4 cm., width: 1.7 to 1.9 cm. These are thin, shallow, oval copper objects perforated at either end near the rim and from the interior. Distribution: New Galena Mound 1. Number of specimens: 2.

Copper celts (fig. 31): length: 13.2 to 17.7 cm., width: 3.8 to 4.3 cm. The name "celt" has been applied to identical copper artifacts found in Wisconsin Effigy Mound sites (Rowe, 1956, p. 57, figs. 28 and 58). These are thin rectangular copper objects with square ends. Around the middle of one of the Iowa specimens are the remains of what appears to be a leather thong, preserved by action of the copper salts. Distribution: Lane Farm Mound 11; Lane Farm Site (surface find). Number of specimens: 2.

Notched copper crescents: dimensions unknown. The only record of copper crescents was contained in a photograph in the Keyes Collection. Judging from the photograph, these objects appear to have been thin sheets of copper cut in crescent form and notched around the exterior arc of the crescent. Each was perforated near the center. Distribution: Lanesville Mound. Number of specimens: 2.

Copper awls: length: 10.9 to 39.6 cm. The larger of these artifacts is semicircular in

cross section and rounded at either end. Its greatest width is near the midpoint of the longitudinal axis. The smaller object is circular in cross section, rounded at one end and pointed at the other. The larger was found in association with a burial. Distribution: Ryan Mound 4; Levsen Rock Shelter. Number of specimens: 2.

Copper earspools: dimensions unknown. As these were known from a photograph only, details as to their construction are unknown. However, they were circular and appeared to be hollow in the middle. They may have been made in two sections and riveted together. One specimen appeared to be incomplete. Distribution: Lanesville Mound. Number of specimens: 2.

Copper nugget: dimensions unknown. This is an unmodified lump of native copper which accompanied a burial in Luth Mound 3.

MISCELLANEOUS POTTERY OBJECTS

Pottery pipes:

Elbow type (fig. 29a): dimensions unknown (all specimens broken). These were made from fine grit-tempered paste. They are identical to Wisconsin Effigy Mound pottery pipes (Rowe, 1956, pp. 64-66, figs. 33 and 65). Distribution: Lane Farm Mounds 3 and 16; Levsen Rock Shelter. Number of specimens: 3.

Elbow type with short extension (fig. 81): length: about 7.0 cm., height of bowl: 3.7 cm. This pipe, from the Gingerstairs Rock Shelter No. 1, was made from fine, sand-tempered paste. In form it resembles the pottery elbow pipes above except for the short node, or extension, beyond the front of the bowl at the base. It was decorated around the circumference of the bowl with a series of feathers or plumes incised and punched into the clay with a very fine implement. On the bottom surface of the base are



Figure 81. Ceramic pipe from the Gingerstairs Rock Shelter, No. 1 (UMMA Neg. No. 12734).

two incised lines, widest apart at the back end of the stem, and converging slightly toward the front end. These were crossed at regular intervals by shorter incised lines. The style of drawing of the feathers or plumes on the bowl is similar to that of feathers incised on catlinite tablets found in Iowa Oneota sites.

Fired pottery lump: length: 3.3 cm., width: 1.8 cm. This lump of pottery clay with sand temper came from the Levsen Rock Shelter. On one side the lump is punctated with what may have been a small grass stem. The punctates were arranged in a line. On the other side are five similar punctates also arranged in a line, with one beneath the line near the center of the side.

Toy pot: this small pot is identical in paste and temper to Madison Cord-Imprinted pottery. The lip is rounded; the upper rim flares slightly; and the shoulder expands sharply in diameter from the neck. The body is elongate globular, and the base is round. The surface had been smoothed carelessly, and on the neck is a curvilinear meander made by impressing a single, fine cord against the neck. This pot, from Highway Thirteen Rock Shelter, is quite small; its diameter did not exceed 5.0 cm.; its height is about 6.0 cm.

*Artifact
Types*



A linear mound in the Marching Bear Mound Group, Effigy Mounds National Monument.

4 COMPARATIVE ANALYSIS OF MOUND, ROCKSHELTER, AND VILLAGE SITES

POTTERY COMPARISON AND SERIATION

Woodland pottery in northeastern Iowa exhibits wide variation in type and style. Earlier pottery discussions have differentiated types and wares, presenting classes with stamped, punctated, and single-cord decoration; cordmarked and plain vessel surfaces; forms ranging from widemouthed jars with almost no shoulder expansion and pointed bases to jars with sharp expansion at the shoulder and round bases. The collections include vessels ranging from those with very thick walls to those in which the walls were only a few millimeters in thickness. Temper ranges from coarse fragments to finely ground bits of sand and crushed rock. Such diversity within Woodland pottery is indicative of a long time span for Woodland occupations in northeastern Iowa.

The length of time involved for the development of the pottery types noted was not immediately clear from the excavation data. Neither were the relative positions of the types in time. Physical evidence for a pottery sequence from excavations was present in two sites only and the validity of the evidence was clear for only two pottery types. Therefore a seriation study was made to arrive at a time sequence, and the hypothetical chronological order presented on the following pages is the result. Local information on relative chronological posi-

tion was taken into consideration in arranging the series. As a means of testing the arrangement against the background of Middle Western ceramic development, comparisons were made with Woodland sequences in adjacent states as well.

Figure 82 is an effort to picture the arrangement of the major local types in a series reflecting degrees of formal relationship. It is assumed that the arrangement expresses chronological relationships as well. The order set forth in this figure is an imperfect expression of the degrees of likeness of the types. It is particularly imperfect as an expression of chronological order, for it does not clearly indicate overlaps where one or two types or groups of types may have existed contemporaneously. In producing this figure, such obviously Mississippian types as Ramey Incised and Orr Focus pottery were excluded as being outside the Woodland ceramic tradition.

Marion Thick pottery is considered representative of the earliest ceramic industry in the area. It is identical to pottery found in surrounding states where it has been thought to be early (Griffin, 1952b, pp. 97-98). Although the relationship is not close, there are indications that Marion Thick contributed some characteristics to the Black Sand Incised type. Some Black Sand sherds resemble Marion Thick in the presence of single-cord impressions on the inner surfaces of the rims, simple vertical rims, and thick vessel walls.

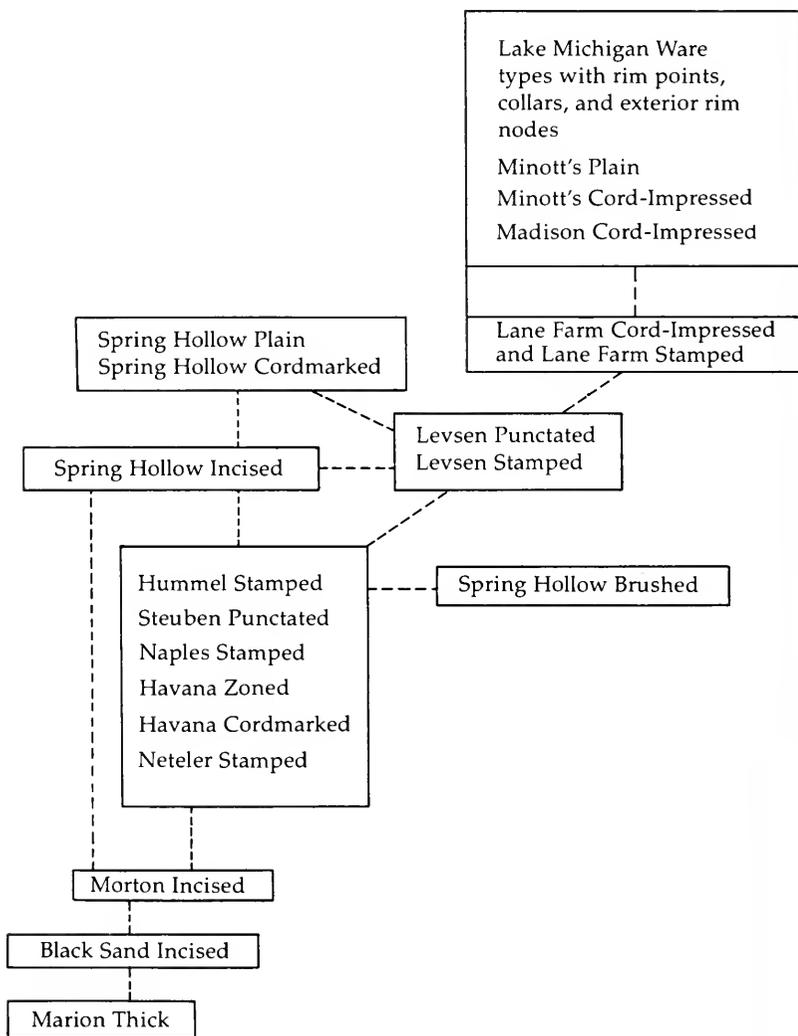


Figure 82. Diagram showing formal and sequential relationships of Woodland pottery types in northeastern Iowa.

Pottery type	Percentages by levels				
	I	II	III	IV	V
Madison Cord-Impressed	8.7	6.6	1.3	0.9	3.8
Spring Hollow Plain	0.3	0.9	0.4	1.7	2.8
Spring Hollow Cordmarked		8.2	0.4	1.3	0.9
Spring Hollow Incised	1.0	0.9	2.1	12.9	0.4
Spring Hollow Brushed		0.4	1.7	4.7	0.9
Levsen Stamped	0.3	0.4	1.3	1.3	
Minott's Plain		0.3			
Cordmarked bodysherds	83.2	77.0	82.1	61.8	56.6
Plain bodysherds	5.7	5.3	10.7	15.4	24.6
Single-cord decorated rim					
with incised chevrons on lip	0.5				
Shell tempered	0.3				

Table 15. Percentages of pottery types by levels, Spring Hollow Rock Shelter No. 1

The question of the position of Spring Hollow Incised arose in connection with the Black Sand sherds. Those which could be assigned to Black Sand were rare. Spring Hollow Incised was a much more common type. In comparisons with the Black Sand sherds, the Havana Ware types, and the Linn Ware types, Spring Hollow Incised was most closely allied with such Linn Ware types as Spring Hollow Cordmarked, Spring Hollow Plain, Levsen Stamped, and Levsen Punctated. Most Spring Hollow Incised sherds do not resemble Marion Thick or Havana Ware. The cross sections of Spring Hollow Incised rims are similar to those illustrated as characteristic of Liverpool Ware (Fowler, 1952, p. 152, pl. XLV).

Compared to pottery of the Illinois River Valley, Spring Hollow Incised appears to represent a development from early pottery types such as Black Sand Incised, Morton Incised, and Sister Creeks Punctated; but judging from its position in local sites, it could not be considered early within the Iowa Woodland pottery continuum. Evidence from the Spring Hollow Rock Shelter No. 1 demonstrated that Spring Hollow Incised was one of the earlier types in the shelter (table 15). It was contemporaneous

with Spring Hollow Brushed, which has characteristics allying it with Havana Ware. Both types appear to precede such late Middle Woodland and Late Woodland types as Spring Hollow Cordmarked and Madison Cord-Impressed, although it seems to have persisted as a minor type during the periods of their popularity.

The Havana characteristics apparent in Spring Hollow Brushed include relatively thick vessel walls; coarse textured, compact paste; lip beveled inward on many specimens; and tendency toward channeling on the inner rim. Spring Hollow Brushed was probably a local Iowa version of Pike Brushed, a type of the lower Illinois River Valley transitional between Hopewell and Late Woodland. The Spring Hollow Rock Shelter No. 1 evidently represents this transitional phase in northeastern Iowa.

Pottery included in Havana Ware in northeastern Iowa appears identical to types defined in the Illinois River Valley. In the Iowa sites, there was no evidence to indicate time relationships of Havana Ware to the purely local types. Havana Ware types probably occupied a time period comparable to their position in Illinois. The Havana types were not widespread, most having come

*Comparative
Analysis
of Mound,
Rockshelter,
and Village
Sites*

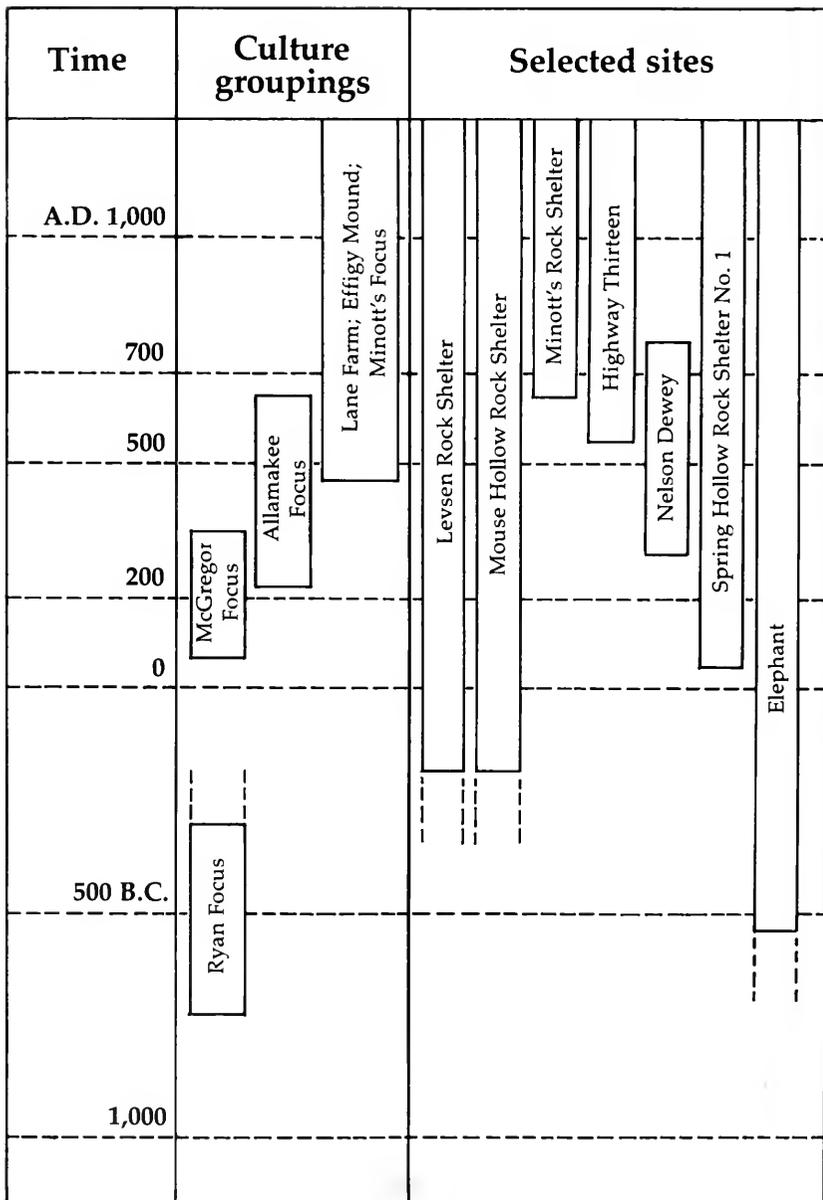


Figure 83. Chronological placement of Woodland culture groupings and selected sites in northeastern Iowa.

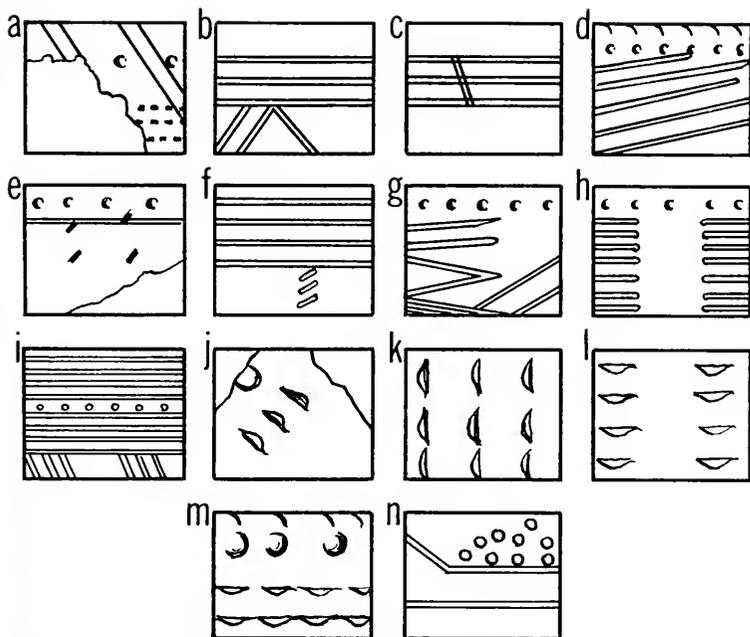


Figure 84. Decorative variations of Spring Hollow Incised.

from rock shelters in Jackson County. Havana sherds were rare north and west of this area. The types within the Havana Ware category indicate a nearly full range of the types defined for Illinois, although most classes were not represented by numerically large sherd quantities. Naples Stamped was the most common single type. There is evidence of continuity between the Havana Ware types and Spring Hollow Incised. Cordmarking on body sherds of some Spring Hollow Incised vessels resemble cordmarking on Havana sherds. The beveled lip and cord-wrapped-stick notch on the inner lip are typical of both classes. Bosses punched from the interior were found on both Havana and Spring Hollow Incised rims. Similarities between the decorative motifs of

Naples Stamped and Spring Hollow Incised are apparent (cf. figs. 84f, h, i, and 85d, h.). Some similarity in vessel form is also apparent, but on the other hand, some cordmarked body sherds of Havana Ware and Spring Hollow Incised are noticeably different, and the rim cross sections of a majority of specimens differ.

Although Levsen Stamped and Levsen Punctated appear to be related types, their resemblance to Spring Hollow Incised is not as marked. The two Levsen types are quite similar to some Havana Ware, particularly Naples Stamped and Steuben Punctated. Levsen Punctated and Levsen Stamped are placed within the Linn Ware which is considered to be a local northeastern Iowa analogue of Weaver Ware. Similarities of these

*Comparative
Analysis
of Mound,
Rockshelter,
and Village
Sites*

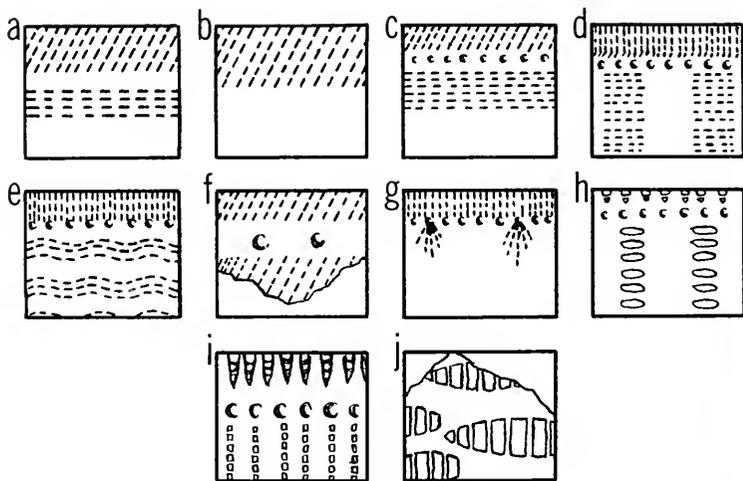


Figure 85. Decorative variations of Naples Stamped.

Levsen types and Naples Stamped are most pronounced in decorative motifs (figs. 85, 86, and 87). However, vessels of the Levsen types have very thin walls and their rim cross sections do not resemble Havana Ware. In decorative treatment Levsen Punctated is similar to both Naples Stamped and Steuben Punctated. In rim forms, the two Levsen types are similar to Spring Hollow Cordmarked and Spring Hollow Plain. There are other resemblances as well. For example, all four types exhibit upper rim incisions. These usually appear alone in Spring Hollow Cordmarked and Spring Hollow Plain, but are often combined with punctates in the Levsen Punctated type. The general vessel surface treatment is similar in the two sets of types (i.e., cordmarked and smoothed on neck and rim leaving the body cord roughened). A slight tendency toward channeling of the inner rim was noted in all of these types.

A further relationship of Levsen Stamped is important. A cord-wrapped-stick decorated pottery type called Kegonsa Stamped

has been described in Wisconsin. Sherds of Kegonsa Stamped conform to the characteristics of Levsen Stamped. The Wisconsin type has been suggested as a development of the Early and Middle Woodland periods (David A. Baerreis, personal communication). However, I believe it is more likely that Levsen Stamped (and probably Kegonsa Stamped) developed in the Middle Woodland and persisted later in view of the continuity of Spring Hollow Cordmarked and Spring Hollow Plain types.

Levsen Stamped also shares features with Lane Farm Cord-Imprinted. Lane Farm Cord-Imprinted is related to Spring Hollow Plain and Spring Hollow Cordmarked. In some variations of Lane Farm Cord-Imprinted, the upper rim is notched as in both the Levsen types and the two Spring Hollow types, and dentate stamping appears below the rim notch as in Levsen Punctated. This was indicated in sherds found in the Sny-Magill Mound Group (Beaubien, 1953, p. 61, fig. 22). The surface treatment of one or two vessels of the Lane Farm Cord-

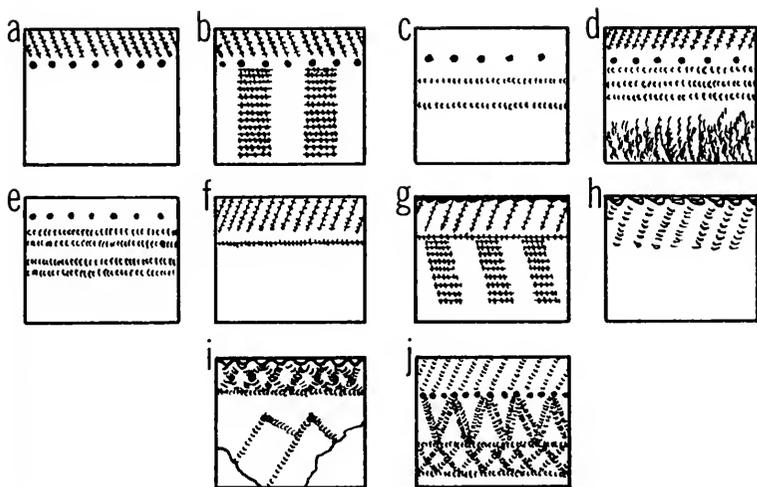


Figure 86. Decorative variations of Levens Stamped.

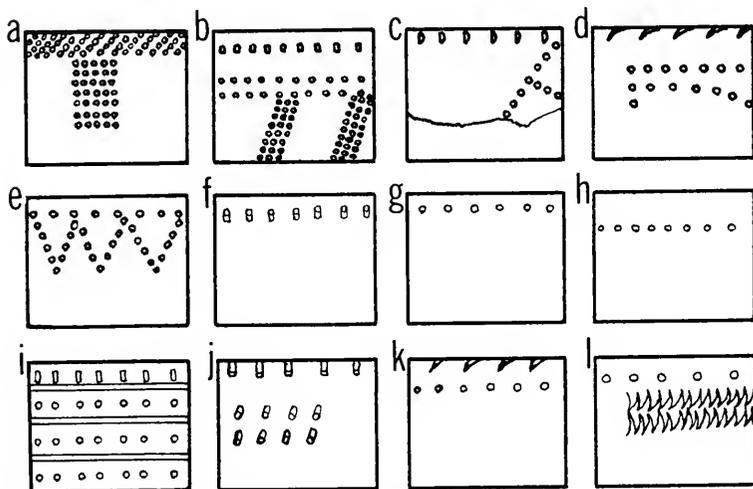


Figure 87. Decorative variations of Levens Punctated.

*Comparative
Analysis
of Mound,
Rockshelter,
and Village
Sites*

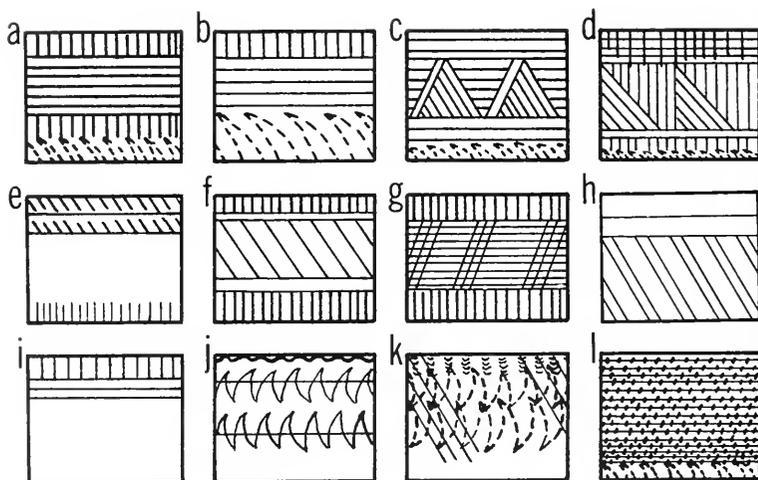


Figure 88. Decorative variations of Lane Farm Cord-Imprinted.

Impressed type shows cord marks resembling those of Spring Hollow Cordmarked. On the site west of the railway interlocking tower on the south end of the Prairie du Chien terrace, Lane Farm rims were found on vessels with Spring Hollow Cordmarked bodies and with dentate stamping applied haphazardly over the cordmarked surface.

A resemblance to Levsen Stamped was noted in sherds from Harvey's Island Mound 2 (fig. 9). The motif appears to have been borrowed from those which might appear on Levsen Stamped vessels, but was carried out in single cords. Paste, temper, and form were those of Lane Farm Cord-Imprinted. Rim profiles for much of the Lane Farm pottery resembles the profiles of channeled rims found in Levsen Punctated and Spring Hollow Plain more closely than they did the straight to slightly flaring rim of Spring Hollow Cordmarked. The appearance of a dentate stamped body on the Lane Farm Cord-Imprinted pots indicates affiliation with Havana Ware and with Levsen Punctated. In the Waterville Rock Shelter, a rim

classified as Lane Farm Cord-Imprinted was decorated with impressions of a cord-wrapped thong or narrow edge of a cord-wrapped paddle rather than parallel single cords (figs. 64 and 88l). This treatment was probably allied to the placement of horizontal lines of cord-wrapped-stick stamping on some specimens of Levsen Stamped (fig. 88c-e). This treatment was also reminiscent of that given some variations of Owasco pottery of New York (Ritchie, 1947, p. 65, pls. 4 and 8).

In spite of paste characteristics and other features resembling Linn Ware, the Lane Farm pottery types evidently derived part of their decorative style and motifs from Lake Michigan Ware. The single-cord decorative style does not appear in Linn Ware and nothing resembling this style is evident in Havana Ware. On the other hand, resemblance to the simpler decorative patterns of Madison Cord-Imprinted is strong. Lane Farm pottery evidently occupies a position between Linn Ware and Madison Cord-Imprinted. It may have further roots in the

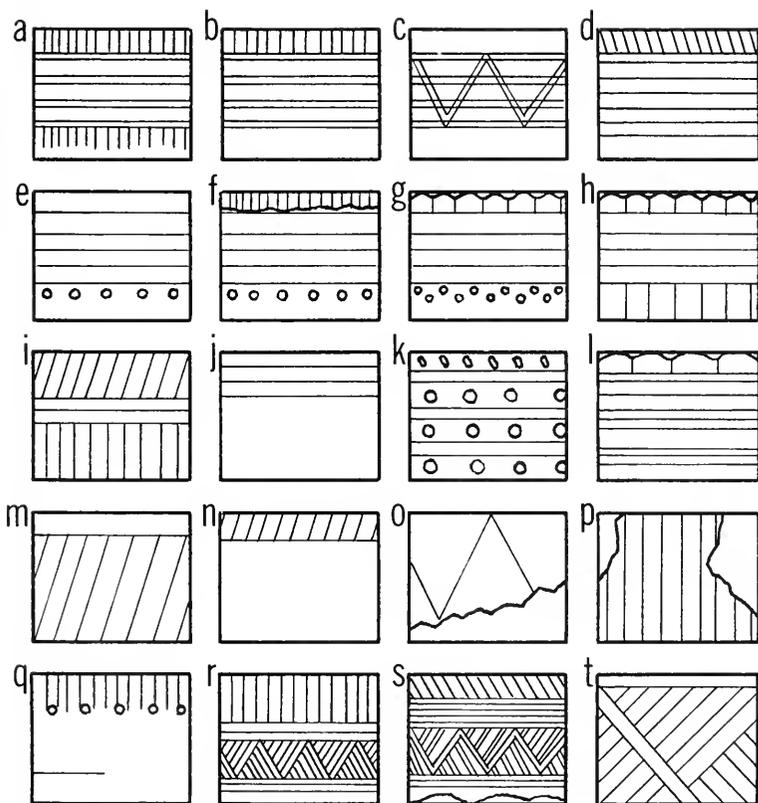


Figure 89. Decorative variations of Madison Cord-Imprinted.

general Woodland pottery tradition of Illinois and Wisconsin, and it may have been the product of influence from both sources. About equal blending of ideas seemed to be in evidence. A similar situation appears to exist in regard to other elements of the complex of which it was a part.

The single cord decorative style appears in its simplest form in Lane Farm Cord-Imprinted. An examination of the decorative variations in comparison with those of Madison Cord-Imprinted gives ample dem-

onstration of this (cf. figs. 82, 83 and 84). Similarly, Lane Farm Cord-Imprinted most frequently appears in association with traits which are characteristically Hopewellian (i.e., copper awls, copper beads, copper plaques, Snyders Notched points, etc.). It appears, then, that the Lane Farm style very likely precedes Madison Cord-Imprinted chronologically, although, on the basis of current understanding of the situation in the upper Mississippi Valley, it would be foolhardy to envision this stylistic develop-

*Comparative
Analysis
of Mound,
Rockshelter,
and Village
Sites*

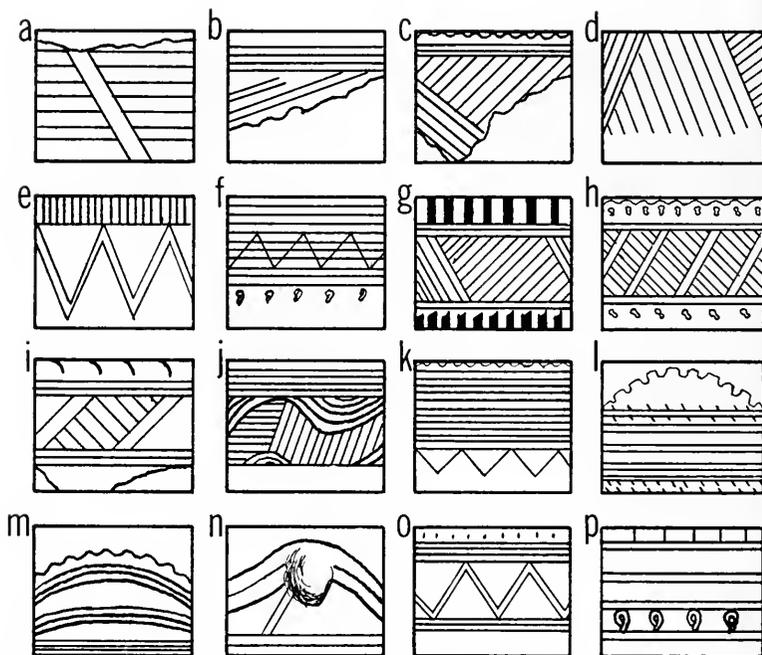


Figure 90. Additional decorative variations of Madison Cord-Impressed.

ment as a unilinear evolutionary sequence. Nevertheless, on the basis of the evidence now available, I would view this decorative style as a local invention which was elaborated and embellished as time progressed, and ultimately in its later, derived forms, was spread widely over the northeast, with eventual distribution in late prehistoric times from the Missouri River trench to the eastern seaboard, and south into Maryland. With its combination on individual vessels of single cord impressed patterns with plain and dentate rocker stamping, it offers evidence of a transition in ceramic decoration from the late Middle Woodland concepts into those of the Late Woodland.

The distributional evidence now in existence further warrants the inference that this style was a northeastern Iowa invention (or

at least a localized upper Mississippi Valley invention). Of the specimens for which I now have specific excavation data, all but two are from Allamakee County sites, and in a circumscribed locality centering around Harpers Ferry and the Lane Farm terrace.

Madison Cord-Impressed and the collared and noded forms of Lake Michigan Ware show little resemblance to the stamped pottery found in Linn and Havana Wares. Some continuity is apparent in the occurrence of cord-wrapped-stick and incised upper-rim notches on sherds from the Levensen and Mouse Hollow Rock Shelters. The rim profiles of these sherds had characteristics in common with Linn Ware.

Body treatment on some specimens resembles Linn Ware. The practice of dividing the decoration into zones from the lip down-

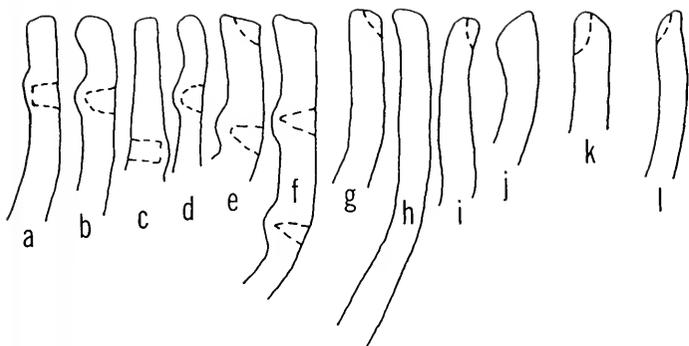


Figure 91. Rim profiles of Havana Ware. Interior surfaces to right.

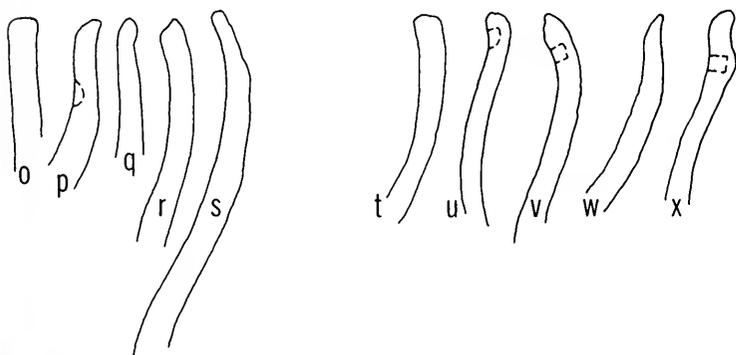
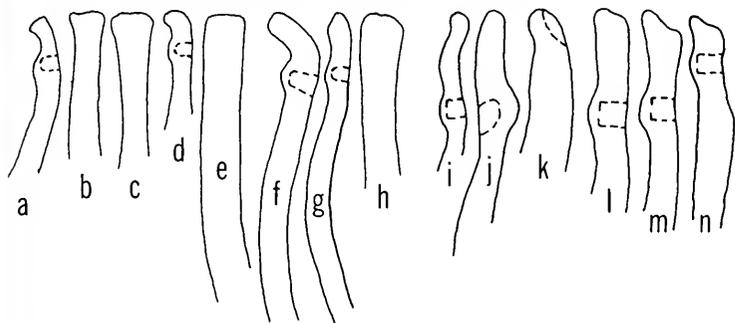


Figure 92. Miscellaneous rim profiles of northeastern Iowa pottery. Interior surfaces to right.

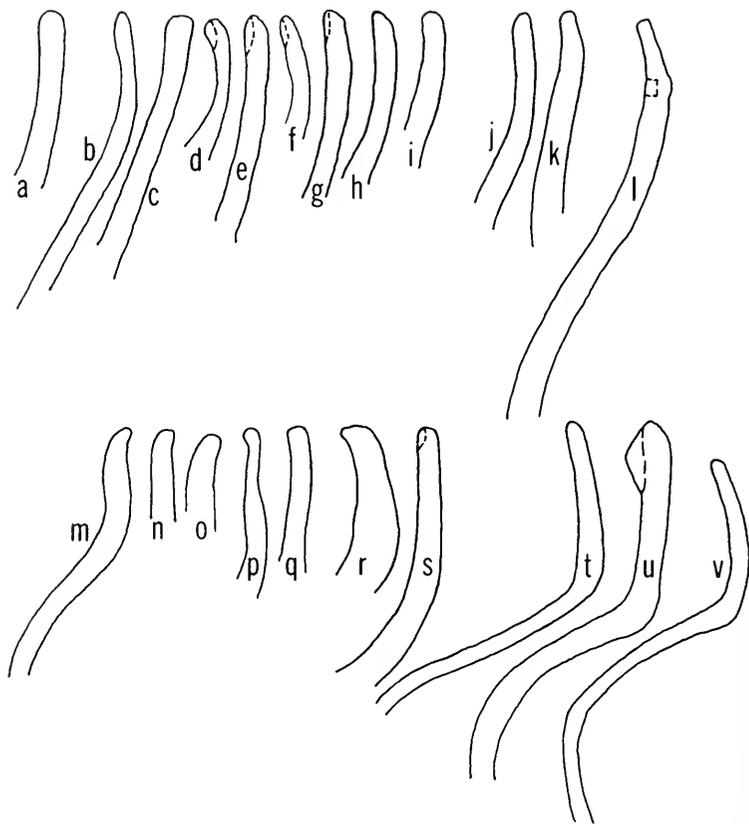


Figure 93. Miscellaneous rim profiles of northeastern Iowa pottery. Interior surfaces to right.

ward may have been an idea derived from the wares which included stamped decorative styles. The vertical or oblique cord impressions on the inner rim may have stemmed from the cord-wrapped-stick or plain stick inner rim notch of earlier pottery. Vessel forms differ somewhat from those of preceding types. The sherds of Madison Cord-Imprinted suggest pots with globular bodies and rounded conoidal bases, and pots with globular bodies on which the shoulder expanded sharply from

the rim. One pot approaching a bowl in form was noted (fig. 95i). The excavations indicated some contemporaneity of Linn Ware, sherds of which were found in small percentages in association with Madison Cord-Imprinted in rock shelters. Often it was difficult to make the distinction between the type called Minott's Plain and rim sherds of Spring Hollow Plain, and it was suspected that Minott's Plain may have had its origin in Spring Hollow Plain. Minott's Cord-Imprinted seems to be somewhat

more remote from the stamped pottery types than Madison Cord-Imprinted. Only such traits as grit-tempered paste, cord-marked body sherds, and lip notching indicate a relationship. The same can be said of the collared and noded forms of Lake Michigan Ware.

In discussing the pottery series above, only major types were considered. The beginnings of a ceramic sequence were evident. Inspection of the occurrence of these types in excavations wherein vertical controls were applied indicates that the sequence was somewhat as outlined on the basis of seriation evidence. The evidence from Spring Hollow Rock Shelter No. 1 has been presented above. The Nelson Dewey Site contained evidence indicating contemporaneity of the Levsen Stamped and Spring Hollow Cordmarked types, and for persistence in time of Spring Hollow Cordmarked and Spring Hollow Plain beyond Levsen Stamped. Other types found in the Nelson Dewey excavations were in small quantities and their positions in relation to the major types is unclear. It is probable that further excavation of this site, gathering a larger sample of material, might clarify the interrelationships. An example of a type whose position with respect to the major types was not clarified is Spring Hollow Incised, which appeared only in the top levels of one square in the excavation (table 16).

At the Elephant Site in northern Allamakee County the very thick excavation levels employed by the Iowa Archaeological Survey offered little information on which to base a description of ceramic sequence. The major difference between the upper and lower levels seems to be in the relative frequencies of Marion Thick pottery. This was concentrated in the lower excavation level. However, this information was of little worth in making definite placement of Marion Thick, for its position in relation to the other types in the lower level was not clear.

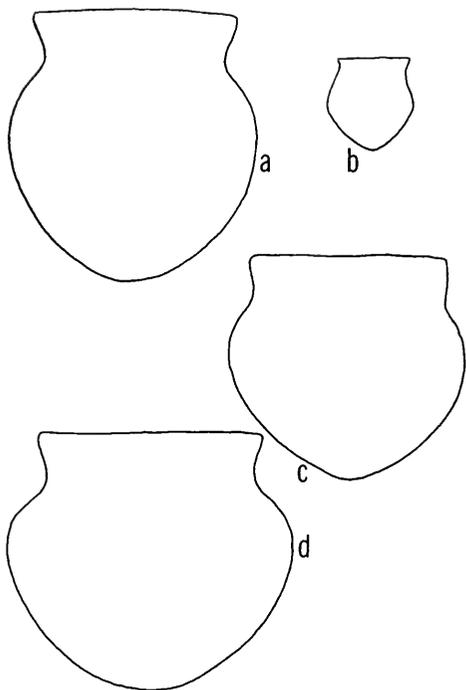


Figure 94. Vessel forms of Lane Farm Cord-Imprinted.

Seriationally, Marion Thick is at the opposite end of the Woodland ceramic continuum from Madison Cord-Imprinted. A greater quantity of Madison Cord-Imprinted sherds were found in the top levels at the Elephant Site in the 1955 tests and in the Iowa Archaeological Survey's excavations. Oneota pottery also seemed to be concentrated in the upper level, but neither the 1955 tests nor the Iowa Archaeological Survey's work established its position with respect to Madison Cord-Imprinted.

Combining seriation evidence with the small amount of information based on frequencies of the types in the excavations, a general chronological sequence emerged

*Comparative
Analysis
of Mound,
Rockshelter,
and Village
Sites*

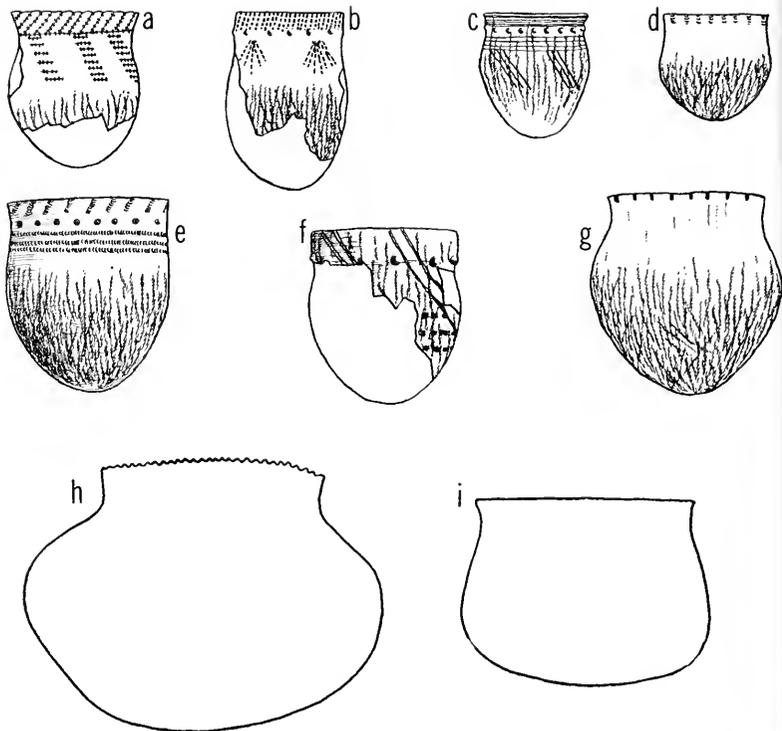


Figure 95. Vessel forms of Levsen Stamped, Naples Stamped, Spring Hollow Incised, Spring Hollow Cordmarked, and Madison Cord-Impressed.

(fig. 82). However, this is an over-simplified sequence. First, only the major types were included in the figure and, second, the list, as pointed out earlier, was a crude approximation of actual ceramic relationships. The local ceramic sequence is one in which Marion Thick appears first, followed by Black Sand Incised, Morton Incised, and Neteler Stamped. Neteler Stamped probably contributed to the decorative style embodied in Naples Stamped. Havana Cordmarked and Havana Zoned also probably appeared on this time level. This sequence of types for the Early and Middle Woodland is based

in part on seriation evidence and in part on analogy with the sequence of the Illinois River Valley (Griffin, 1952b, pp. 97-114).

That the ideas involved in the decoration of such types as Naples Stamped were in vogue over a rather long period of time is evident from their appearance in Levsen Stamped. Levsen Stamped and Spring Hollow Incised were thought to reflect changes from the techniques of pottery making of Havana Ware to those of the Linn Ware types. This situation would be expected in view of the intermediate position held by Levsen Stamped in Spring Hollow Rock

Shelter No. 1. Levsen Stamped appears to be contemporaneous with Spring Hollow Cordmarked and Spring Hollow Plain in the Nelson Dewey Site. This would account for similarities in vessel form, rim form, and surface treatment among these three types. On the basis of stylistic comparison these types are considered closely related. Also closely related to them was Levsen Punctated. Both Levsen Punctated and Levsen Stamped are thought to occupy a position at the early end of the Linn Ware continuum. Spring Hollow Cordmarked and Spring Hollow Plain may have persisted for a longer period, as indicated by interrelationships with Madison Cord-Stamped. However, Lane Farm Cord-Stamped has been seen to have characteristics relating it to Levsen Stamped and Levsen Punctated.

Examples of these characteristics are rim notches and dentate stamping on the rim of some specimens. This evidence suggests a position for Lane Cord-Stamped between Linn Ware and such typical Lake Michigan Ware types as Madison Cord-Stamped and Minott's Cord-Stamped. Lane Farm Cord-Stamped evidently was a variation on the single-cord decoration theme which was of relatively short life at the beginning of the development of this decorative style. Evidence in support of an inference that Madison Cord-Stamped, Lane Farm Cord-Stamped, and zoned and stamped pottery were contemporaneous for a short period of

time was found in the Spike Hollow Shelter (Logan, 1952b, pp. 11-12). Madison Cord-Stamped, Minott's Cord-Stamped, and the single-cord decorated pottery with collars, rim points, and nodes would have represented the latest of the Woodland pottery types. The globular vessel form appearing in these types, along with the suggestion of their association with Ramey Incised in the Mouse Hollow Rock Shelter, are indications that these types were contemporaneous with the Old Village complex of Cahokia.

COMPARATIVE ANALYSIS OF BURIAL MOUNDS

In analysis of the information on north-eastern Iowa mound groups, six kinds of mounds were observed:

1. Mounds with red ocher associated with burials and grave goods.
2. Mounds with large rectangular burial pits.
3. Mounds with rock alignments or enclosures associated with burials.
4. Mounds containing crematory remains.
5. Effigy mounds.
6. Simple conical mounds resembling the effigies in structure and content.

Although the trait lists from these six groups overlapped, highly distinctive mounds showing few resemblances to mounds of other groups could be selected

Table 16. Percentages of pottery types by levels, Nelson Dewey Site

Pottery type	Percentages by levels			
	I	II	III	IV
Spring Hollow Cordmarked	34.9	54.6	19.0	13.7
Spring Hollow Plain	23.2	30.0	14.3	10.5
Levsen Stamped	2.3	10.9	61.9	15.8
Spring Hollow Incised	4.7	0.6		
Thick cordmarked sherds		2.4		
Plain thick reed punctated sherds		0.6	4.8	
Cordmarked bodysherds	34.9			

Comparative Analysis of Mound, Rockshelter, and Village Sites

within each group. The groupings tend to intergrade, however. Excluding those excavated in Jackson County, the mounds covered a territory so limited in area that the geographic factor was considered negligible in explaining the variations noted. The diverse traits evidently indicate differences in time rather than degrees of geographic remoteness from each other. Recent radiocarbon tests on samples from northeastern Iowa mounds related to several described on these pages serve to indicate that this conclusion was correct.

Red Ocher Mounds

Of the mounds excavated by Ellison Orr and Charles R. Keyes, five contained layers of red ocher applied to areas over and surrounding the burials or grave goods. To these may be added two additional mounds: (1) the Knight Mound with red ocher floor in Prairie du Chien, Wis.; and (2) the Sny-Magill Mound 43 excavated by Paul L. Beaubien (1953, pp. 57-60) for the National Park Service.

French Town Mound 10 was unique even within the class of mounds containing red ocher. Out of a combined total of 33 traits listed for these mounds, 22 were found in French Town Mound 10. Of the 22 traits, 13 were found in this mound alone. It shared nine traits with other mounds of the class. Sharing the most traits with French Town Mound 10 was the Sny-Magill Mound 43, where eight traits were held in common. This mound was followed in degree of similarity to French Town Mound 10, by Ryan Mound 2, the Houlihan Mound, and Ryan Mound 4, in that order. French Town Mound 10 shared seven traits with Ryan Mound 2; four with the Houlihan Mound; and four with Ryan Mound 4. The trait lists for Ryan Mound 1 and the Knight Mound were considered too fragmentary for safe comparison, although their red ocher content suggests that they might be representative of this complex.

French Town Mound 10 was also compared with F^o11, Fulton County, Ill., and a strong affiliation was indicated. It was concluded that these mounds represented a local manifestation of Early Woodland burial practices similar to those noted in Illinois. However, this interpretation is complicated by the appearance of a late pottery type in three of the mounds. This pottery was decorated with single cords and is of the Lane Farm Cord-Imprinted type. It was found in Sny-Magill Mound 43, Ryan Mound 1, and Ryan Mound 2. In Sny-Magill Mound 43 the sherds were found in the mound fill near the surface, and presumably could have been intrusive (Beaubien, 1953, pp. 59-60). In Ryan Mound 2, complete pots of the type were located deep in the mound, according to Orr's notes. The pots were found in two separate layers of dark material above the red ocher layer, but below the level of the surrounding terrace. Incomplete excavation and a brief and general description rendered the provenience of the pottery in Ryan Mound 1 unclear. It is tempting to assign these mounds to a late Middle Woodland position on the basis of this pottery. However, a recent radiocarbon date derived from charcoal found in Sny-Magill Mound 43 indicates an early chronological placement (James B. Griffin, personal communication).

The similarity of the mounds containing red ocher indicates that they all form part of a single complex on the same time level. The similarity of the burial practices noted in French Town Mound 10 and F^o11; the early date of Sny-Magill Mound 43; and the appearance of early artifact types in other Iowa Red Ocher mounds is strongly suggestive of an early position for this complex, but leaves unexplained the appearance of the two complete pots in Ryan Mound 2. Orr did not mention the possibility of succeeding stages of mound construction; nor did he mention the possibility of later intrusions. Grave goods of types resembling those from Illinois Red Ocher mounds were

associated with the red ocher and bundle burials in Ryan Mound 2. The pots were not accompanied by skeletons. Hence it was logical to interpret the lowest part of the mound as part of an early burial complex and to consider the pots to represent either a later intrusion, or an addition, to the mound.

An alternative interpretation of phenomena observed in the two Ryan mounds and the Houlihan mound would assume that the pots found were part of the original mound furnishings, and that the traits indicative of an early chronological placement (i.e., red ocher floors, copper artifacts, etc.) reflected a northerly persistence of earlier burial customs into which had been incorporated the addition of some artifact types and ceramic developments from localities further south—presumably Illinois.

The complex typified by these mounds consisted of conical mounds wherein the floor had been prepared by removal of topsoil. The burials were placed in individual pits on the mound floor, or in the fill of the mound. All three of these positions were combined in some sites. Burials were massed in the central area of the floor as in Sny-Magill Mound 43, or scattered over the central part of the mound as in French Town Mound 10. The most common burial type was the secondary bone bundle, although semiflexed and extended burials were noted. Red ocher over the floor, burials, and grave goods were universally recurrent features. The classes of grave goods varied somewhat, but it was noted that grave goods were present in all mounds where excavation furnished information on the whole burial complex. The most typical grave goods were leaf-shaped blades, straight-stemmed points, and cylindrical copper beads. The latter were heavier and shorter than cylindrical copper beads found in the majority of mounds containing Hopewellian grave goods. Other types of grave goods which appeared less frequently are listed in

table 17.

Suggestions as to affiliations of the Red Ocher mounds have been made earlier, but broader relationships have not been indicated in detail. In Wisconsin, no mounds similar to these Allamakee and Clayton County sites have been reported, with the possible exception of the Knight Mound. The Clam River mounds of northern Wisconsin contained red ocher, but evidence of white contact was found in them and a comparison between Clam River and the north-eastern Iowa Red Ocher mounds indicated no close affiliation. In Wisconsin, burials in gravel deposits resemble the Red Ocher mound burials of northeastern Iowa. These gravel deposit burials are representative of the Old Copper complex. They have been excavated at Oconto, Wis., and at the Osceola Site near Potosi in Grant County. Red ocher was associated with burials at the Reigh Site in Winnebago County, Wis., a site which has been considered slightly later in time than the Oconto and Osceola Old Copper sites (Baerreis, Daifuku, and Lundsted, 1954, pp. 1–36). The Old Copper complex has been assigned to the late Archaic (Wittry and Ritzenthaler, 1956, pp. 244–253). Radiocarbon dates indicating that this placement was valid have been obtained recently (Warren L. Wittry, personal communication).

Dates have not been obtained for the Reigh Site, but according to comparisons made by Baerreis, the Reigh burials were closely related to the Glacial Kame interments of Ohio, Michigan, and Indiana. In his paper describing artifacts and burial types of the Kame sites, Cunningham (1948, pp. 37–39) points out similarities to the Illinois Red Ocher mounds. These traits include use of red ocher, copper awls with square cross sections, flexed burials, elliptical and circular shell gorgets, cremations, copper beads, and bundle burials. Perhaps the most important single resemblance is that of the copper awls with rectangular

cross sections. Traits which Glacial Kame shares with the northeastern Iowa Red Ocher mounds are as follows: flexed burials, extended burials, bundle burials, use of conch shell for ornaments, copper beads, red ocher with burials, oblong shell beads, and copper awls (but of slightly different type). It is evident from this list that there is greater similarity between Glacial Kame and Illinois Red Ocher than between Glacial Kame and the red ocher mounds of northeastern Iowa.

There was no great similarity between the northeastern Iowa mounds and the Reigh Site burials. However, certain traits were held in common. These include extended burials, cylindrical copper beads, conical antler projectile points, and red ocher with burials. Bundle burials were also found in both entities, but they seem not to have been as common at the Reigh Site as in the Iowa mounds. Reigh, Glacial Kame, Oconto, and Osceola evidently are representative of the late Archaic in the Upper Mississippi Valley and Lower Great Lakes areas. The trait resemblances between them and the northeastern Iowa Red Ocher mounds serve to emphasize the early position of the Iowa sites. It seems evident that on this time level burial practices in northeastern Iowa were representative of a set of customs extending down the Mississippi River into Illinois, eastward unto Wisconsin, and still further eastward into the Great Lakes area.

In comparisons further afield in the eastern United States, an interesting similarity was noted between the conch-columella beads from French Town Mound 10 and beads found in Maine Red Paint burial sites (Willoughby, 1935, p. 264). The Adena burial mounds of the Ohio, West Virginia, western Pennsylvania, and Kentucky region were compared with the northeastern Iowa mounds since Adena has been considered an early burial complex. However, the much richer content of Adena, combined with its

Table 17. Comparative trait list for Red Ocher Mounds

Traits	F ¹¹ Fulton Co.	French Town Mound 10	Ryan Mound 2	Ryan Mound 4	Houthian Mound	Sny-Magill Mound 43
Marginella beads perforated at apex	X					X
Copper beads and tubing (rolled sheet copper)	X				X	
Crinoid stem beads	X					
Cut shell gorgets	X				X	
Layers of burials	X	X				
Flexed burials	X					
Crenated burials	X					
Bundle burials	X	X	X		X	X
Caches with burials	X	X	X		X	X
Red ocher over burials	X	X	X			
Burials without red ocher	X	X				
Stone work with burials predominates over other materials	X	X				X

Table 17. Comparative trait list for Red Ocher Mounds (continued)

Traits	F ^o II Filton Co.	French Town Mound 10	Ryan Mound 2	Ryan Mound 4	Houlihan Mound	Sny-Magill Mound 43
Copper plaque or breastplate	X					
Hematite paint stone	X					
Crematory basin	X					
Lanceolate blades	X	X	X		X	X
Straight-stemmed projectile points	X		X			X
Turkey-tail blades	X	X				
Ovoid blades pointed at each end	X	X				
Flint spawls	X					
Bunt	X					
Large expanded-base drills	X	X				
Scraper-like implements	X	X				
Flint cores	X	X				
Small celts with rectangular cross section	X					
Unio shell spoon with burials	X		??			
Deer metapodial awl	X					
Cut antler section	X					
Split elk metapodial	X					
Copper pin or awl	X			X		
Galena tuboids	X					
Conch columella beads	X	X				
Conical antler projectile point	X	X				
Split animal bone awl	X	X				
Flake scraper	X	X				
Corner-notched projectile point	X	X				X
Conical mound	X		X	X		X
Oval mound	X				X	
Shallow burial pits	X	X			X	X
Humus removed from burial floor	X	X			X	X
Sand over burials					X	
Stiff black clay over burials				X	X	
Contracting-stemmed projectile points					X	X

*Clamshell found with burial

more remote geographic position with respect to Iowa, rendered such comparisons inconclusive. The resemblances noted were generalized. Adena contained all of the burial types known for the Iowa Red Ocher mounds. Red ocher with burials is not itself a diagnostic feature. Blade caches, which were found both in Adena and the Iowa mounds have also been found in Hopewellian sites. If a relationship existed between Adena and the Iowa burial complex, it must have been through such intermediately located manifestations as Illinois Red Ocher, and certainly not a direct connection.

Another complex compared to that of the Iowa mounds considered here was the assemblage from the Picton Site on the Trent Waterway in Ontario, Canada. Traits shared include bundle burials; extended burials; short, heavy, cylindrical copper beads; red ocher; and large, cylindrical conch-columella beads. The method of perforation, however, differed on the Picton Site conch-columella beads. The complex at the Picton Site was very similar to that of the Reigh Site of Wisconsin and to Glacial Kame. This complex and the Maine Red Paint burials furnished further evidence of an early burial complex in northeastern United States involving red ocher, copper tools and ornaments, and ornaments made from sea shells. Ritchie (1949, p. 47) placed this complex in a chronological position transitional between late Archaic, Early Woodland, and Hopewell. The Iowa Red Ocher mounds would have been slightly later than this widespread Archaic burial complex, but continuities from it are evident.

The Red Ocher mounds of Iowa are believed to represent a local variation of the Illinois Red Ocher mound burial complex within the Early Woodland. Since they displayed features distinct from those of the Illinois mounds, they are considered a separate grouping. The term, Ryan Focus, is proposed to designate this northeastern Iowa complex.

Mounds Containing Hopewellian Grave Goods

Among the mounds excavated by Ellison Orr were 11 containing types of grave offerings representative of those included in Hopewellian complexes elsewhere in the Middle West. The characteristics of these mounds are summarized in table 18 along with traits of three mounds excavated at Effigy Mounds National Monument. Three different kinds of internal construction features were observed in these mounds:

1. Mounds containing central, rectangular, subfloor pits.
2. Mounds containing alinements of rocks over or around the burials and no central pit.
3. Mounds containing cremations or burials encased in mucky clay in which both burial pits and rock enclosures were absent.

Four of the mounds containing Hopewellian grave goods were of the second class, although two others (Mounds 33 and 57 in Effigy National Monument) contained features of both the first and the second groups listed. The first class was represented by seven mounds, including Effigy Mounds National Monument Mounds 33 and 57. The third class did not constitute as homogeneous a group as did the others. It included only two mounds the characteristics of which did not resemble those of the other groups. One of these mounds contained cremations and the other contained bundle burials covered with black or purplish clay. Although variety of construction features could imply time difference, such distinction could not be demonstrated, and seeming interchangeability of grave goods, along with appearance of both rock structures and central burial pits in the two mounds at Effigy Mounds National Monument, indicated essential contemporaneity of the classes.

The appearance of a crematory layer in Mound 33 at Effigy Mounds National Mon-

Table 18. Mounds with Hopewellian grave goods

Mound number	Burial type	Rock Structure	Pit or rock orientation	Other features	Grave goods
Depe Mound 8	Fragmentary	Enclosure	Northeast-southwest		Cut human bones; clamshell in burial area
Luth Mound 1	Bundle	Parallel rows	East-west		Bear canine
Luth Mound 2	Extended; bundle	Parallel rows	East-west		Snyders Notched quartzite blade
Luth Mound 3	Extended	Parallel rows	Northeast-southwest		Snyders Notched and ovoid chalcedony blades; copper nugget
Harvey's Island Mound 2	Bundle		North-south	Rectangular central pit	Unperforated bear canine; cylindrical copper bead
Harvey's Island Mound 3	Bundle; extended		North-south	Rectangular central pit	Perforated bear canines
New Galena Mound 1	Bundle		Northeast-southwest	Rectangular central pit	Copper hemispheres; Levensen Stamped pot
New Galena Mound 3	Bundle		Northeast-southwest	Rectangular central pit	Perforated bear canines; grit-tempered pot/shoulder cache
New Galena Mound 27					Platform pipe
New Galena Mound 28	Bundle		Northeast-southwest	Rectangular central pit	Perforated bear canines
Effigy Mounds Mound 33	Extended; bundle; cremation	Enclosure	Northeast-southwest	Rectangular central pit	Bone awls; copper gorget; pearl bead; mica; clamshell cache
Effigy Mounds Mound 55	Cremation				Snyders Notched chalcedony blades; perforated bear canines
Effigy Mounds Mound 57	Bundle	Layer over pit	Northeast-southwest	Rectangular central pit	Copper gorget
Pleasant Creek Mound 2	Bundle			Clamshell layer at mound base; burials in sticky clay	Copper beads; ovoid "blank"

ument, where the primary feature of mound construction was a rectangular subfloor pit accompanied by a rock enclosure around and over the burial pit, was considered additional evidence for the existence of these mounds on essentially the same time level. However, it should be borne in mind that the crematory layer in Mound 33 appeared as a cap over the mound and could have been added some time after construction of the primary mound. It was possible that Pleasant Creek Mound 2 might have been constructed slightly earlier than the others, for it contained bundle burials and a cache of finely flaked flint blades in a layer of sticky clay. A similar layer of sticky clay was associated with burials in Ryan Mound 4, a mound considered part of the Early Woodland burial complex described earlier. Wray (1952, p. 154) considered blade caches with burials to be characteristic of early Hopewellian mounds. Pleasant Creek Mound 2 differed sharply from the other mounds included in table 18, but it was also most remote from the others geographically.

With the exception of the type of pottery found in New Galena Mound 1, the grave goods listed in table 18 were characteristic of Hopewellian mounds in Illinois and Wisconsin. The pot from New Galena Mound 1 resembled a vessel found in the Renner mound near Kansas City, Mo.; (Wedel, 1943, pl. 41). The design on the Renner pot was very similar to that of the pot from New Galena Mound 1. Technique of applying the design differed, however, for incising and dentate stamping were combined on the Renner vessel, while incising and cord-wrapped-stick stamping were employed on the New Galena pot (fig. 40). The forms of these pots differed slightly, but certain features were common to both. Both were short, squat vessels with orifices almost as wide as their shoulder diameters. The base of the Renner pot was rounded conoidal, whereas the base of the New Galena vessel was rounded. The rim of the

Renner specimen was straight and vertical, while that of the example from New Galena was flared from the upper part of the rim to the lip. The elliptical zones encircling the vessel from the Renner mound were plain, whereas those on the New Galena pot were filled with cord-wrapped-stick stamping alternately in the upper and lower halves. In spite of the differences, the basic, overall design was quite similar in these vessels.

The Renner mound was located near a village site of Hopewellian origin. The vessel was not associated directly with the burials. The burial complex described by Wedel (1943, p. 144) included burials beneath rock slabs. One of these was a child's skeleton; another was that of an adult. Unattached skulls also were found. Grave goods consisted of chipped stone tools, including a white flint blade, and fragments of sheet copper. This mound resembled those Iowa mounds in which rocks covered the burials, and, like a number of them, could be considered Hopewellian in origin.

A comparison of the traits of the Iowa mounds was made with traits of the Trempealeau Focus of Wisconsin, the Nickerson and Ogden-Fettie Foci of Illinois, and the mounds reported by Wedel in the Kansas City area from which Hopewellian pottery was reported. In the comparative trait list thus made up, the northeastern Iowa mounds were seen to affiliate with Hopewellian mounds excavated elsewhere in the Middle West. Based on this trait list, a table of coefficients of association was produced which indicated that the northeastern Iowa Hopewellian mounds were most closely affiliated with those of the Nickerson Focus and the Trempealeau Focus.

Trait comparisons are presented in table 19 and the coefficients of association derived from them are given in table 20.

The values in table 20 express degrees of relationship between the culture groups compared. These relationships are expressed on a scale of 1.0 to -1.0 as indicated in

Kroeber's description (1940, pp. 29-44). High positive values therefore indicate close affiliation of two entities. Extremely low values or negative values are evidence of little or no affiliation. In table 20, the significant clusters of high values have been enclosed within the ruled rectangles.

Although the northeastern Iowa mounds shared a large number of traits with the Ogden-Fettie Focus, the coefficient derived from the trait comparison was a low one. The Ogden-Fettie Focus has a larger array of traits than other Hopewellian groupings compared to it. These Illinois River Valley mounds were more elaborate than any comparable northeastern Iowa burial mounds. Although the area of the Trempealeau Focus is about the same distance from Allamakee and Clayton Counties in Iowa as the Nickerson Focus, the degree of affiliation was not equal. Nickerson seemed to be related to the Iowa mounds a little more closely than were the Trempealeau mounds.

However, a glance at the trait list will show that the relationship between Trempealeau and the Iowa McGregor Focus is obscured by inclusion among the Iowa mounds of sites wherein rock structures were found. The relationship would have been closer if the Iowa mounds had been restricted to a class containing only mounds with rectangular subfloor pits. The appearance of such pits in conjunction with rock structures commented on earlier, indicates a relationship sufficiently clear to warrant inclusion of both mound types in this single grouping. Trempealeau, on the other hand, seems to have been a singularly homogeneous and closeknit unit. This remarkable degree of homogeneity may indicate that it was of short duration in western Wisconsin. In connection with this it is appropriate to observe that the trait list of the Trempealeau mounds bears considerable resemblance to that suggested by Wray (1952, p. 155) as representing Middle Hopewell in the Illinois River Valley.

The Nickerson Focus, which yielded the highest coefficient of association with the Iowa mounds, exhibited a variety of mound types ranging from rather elaborate structures reminiscent of certain mounds of the Ogden-Fettie and Trempealeau Foci to simpler forms resembling many of the Iowa examples. It also included mounds in which rock structures appeared. Nickerson contained more grave goods than did the McGregor Focus of Iowa, although this could be a factor of the limited knowledge of Hopewell in the northeastern Iowa counties. There were specific similarities between Nickerson and the McGregor mounds. Bennett's (1945, pp. 15-24) description of Portage Mound 16 suggested parallels with Mound 33 of Effigy Mounds National Monument. Both contained subfloor burial pits and crematory layers. Mussel shells were found scattered through both. Portage Mound 16 was more complex structurally than Mound 33, with evidence of a log-lined and log-covered central pit and a buried circular trench around the periphery of the mound. Mound 33, on the other hand, contained a more elaborate array of grave goods. The use of fresh-water pearl beads appeared in both Nickerson and McGregor mounds and the copper beads illustrated by Bennett (1945, pl. 9i) were similar to those from Mound 33.

The Kansas City Hopewellian mounds reported by Wedel (1943, pp. 105-150) differed markedly in construction from the mounds excavated in northeastern Iowa. However, in spite of the stone vault construction and the repeated appearance of pottery among the grave goods, there were certain features which resembled those of the northeastern Iowa mounds. The appearance of burned clay, secondary crematory layers, layers of rocks over burials, and subfloor rectangular burial pits were considered parallels of significance. In his discussion of stone vault mounds, Wedel (1943, p. 172) presented data from a mound in Crawford

*Comparative
Analysis
of Mound,
Rockshelter,
and Village
Sites*

Table 19. Comparative trait list for 11 Middle Western burial complexes

Traits	Traits										
	Mc- Gregor Focus	Tram- peal- eau Focus	Nick- erson Focus	Ogden- Fettie Focus	Kansas City Focus	Boone Focus	Weaver Focus	Alla- makee Focus	Iowa Effigy Mound	Wis. Effigy Mound	Lane Farm
Conical mound	X	X	X	X	X	X	X	X	X	X	X
Oval mound			X			X					
Effigy mound								X	X	X	
Linear mound			X	X			X	X	X	X	
Humus cleared from mound floor	X	X	X	X			X	X	X	X	X
Prepared mound floor	X	X	X	X			X	X	X	X	
Clay floor		X	X	X				X	X	X	
Sand floor		X	X	X							
Rectangular subfloor pit	X	X	X	X	X		X	X			
Earth piled around burial pit		X	X	X							
Grass or mat-covered floor				X							
Log tomb				X							
Log inclosure around pit				X							
Sand floor in log tomb				X							
Log or slab roof on tomb or pit			X	X							
Fire built on log roof				X							
Stone structure in mound	X		X	X	X						
Stone inclosure	X		X	X							
Stone crypt				X							
Layer of stones over burial	X		X	X	X						
Pile of stones near burial	X		X	X				X	X	X	X
Clamshell layer in mound	X							X	X	X	X
Clamshells scattered through mound	X		X	X				X	X	X	X
Rock slabs lining pit								X	X	X	X
Parallel rock walls at ends of burial area								X	X	X	X
Shallow oval pit											
Posts around burials								X	X	X	X
Burned clay over pit	X		X		X			X	X	X	X
Multiple pits											
Parallel rock alignment	X							X	X	X	X
Rock pavement beneath burial											
Buried circular trench						X					

Table 19. Comparative trait list for 11 Middle Western burial complexes (continued)

Traits	Mc- Gregor Focus	Trem- peal- eau Focus	Nick- erson Focus	Ogden- Fettie Focus	Kansas City Focus	Boone Focus	Weaver mahee Focus	Alla- mahee Focus	Iowa Mound Effigy Mound	Wis. Effigy Mound	Lane Farm
Evidence of red ocher			X	X							
Clay burial platform			X						X		
Ash lenses in mound	X		X	X	X			X	X	X	X
Charcoal and ash with burial	X		X	X							
Ash bed on mound floor			X	X							
Rocks in mound			X	X							
Mound in a single crematory unit			X	X				X	X	X	X
Charcoal and animal bone concentration			X	X				X			
Liquid clay over burial or cremation			X	X							
Clay lined crematory basin			X	X							
Mound with central fire pit			X	X							
Burials in mound	X	X	X	X	X	X	X	X	X	X	X
Burials in pits	X	X	X	X	X	X	X	X	X	X	X
Burials on mound floor	X	X	X	X	X	X	X	X	X	X	X
Burials in secondary stratum	X	X	X	X	X	X	X	X	X	X	X
Secondary stratum of cremations	X	X	X	X	X	X	X	X	X	X	X
Single burials	X	X	X	X	X	X	X	X	X	X	X
Multiple burials	X	X	X	X	X	X	X	X	X	X	X
Burials in wheel formation, shell at center			X	X	X	X	X	X	X	X	X
Extended burials	X	X	X	X	X	X	X	X	X	X	X
Flexed burials			X	X	X	X	X	X	X	X	X
Cremations	X	X	X	X	X	X	X	X	X	X	X
Bundle burials	X	X	X	X	X	X	X	X	X	X	X
Individual skull burial	X	X	X	X	X	X	X	X	X	X	X
Dog burials			X	X	X	X	X	X	X	X	X
Grave goods with burials	X	X	X	X	X	X	X	X	X	X	X
Evidence of burial wrapping	X	X	X	X	X	X	X	X	X	X	X
Absence of grave goods	X	X	X	X	X	X	X	X	X	X	X
Woven fabrics	X	X	X	X	X	X	X	X	X	X	X
Rouletted pottery	X	X	X	X	X	X	X	X	X	X	X
Cordmarked pottery	X	X	X	X	X	X	X	X	X	X	X
Naples Stamped pottery	X	X	X	X	X	X	X	X	X	X	X

Table 19. Comparative traits list for 11 Middle Western burial complexes (continued)

Traits	Mc- Gregor Focus	Trem- peal- eau Focus	Nick- erson Focus	Ogden- Fettie Focus	Kansas City Focus	Boone Focus	Weaver Focus	Alla- makee Focus	Iowa Effigy Mound	Wis. Effigy Mound	Lane Farm
Cut animal jaws		X	X	X							
Barrel-shaped shell beads		X	X	X							
Marine shell cup				X	X						
Sea shell beads			X	X							
Perforated or grooved clamshell pendant			X	X							
Globular and planoconvex shell beads			X	X							
Small animal canine			X	X							
Woodland type projectile points	X	X	X	X	X	X	X	X	X	X	X
Flint disks or blanks	X	X	X	X							
Hawk claws				X							
Hammerstones				X							X
Galena with burials		X									
Copper nugget with burial	X										
Copper "panpipes"		X			X				X		
Oval knife				X	X						
Antler cylinder											
Clamshell spoon							X				
Shell disk beads						X	X				
Small celts							X				
Conch columella bead							X				
Perforated bones		X	X	X							
Clamshells in pots											X
Small triangle projectile points									X	X	X
Scrapers									X	X	
Ground stone spuds											
Stone "saws"											
Bone harpoon points										X	
Bone beamers										X	
Worked bear toes										X	
Turtle plastron "mesh spreaders"									X*	X	
Antler flakers										X	
Absence of burials									X	X	

*Found in Highway Thirteen Rock Shelter and included here for counting purposes.

	Ogden- Fettie Focus	Trem- peal- eau Focus	Nick- erson Focus	Mc- Gregor Focus	Alla- makee Focus	Kansas City Focus	Boone Focus	Weaver Focus	Iowa Effigy Mound Farm	Lane Farm	Wis. Effigy Mound
Ogden-Fettie Focus		.38	.37	.25	-.05	.08	.02		-.07	-.05	-.15
Trempealeau Focus	.38		.38	.40	.27	.25	.28	.32	.18	.27	-.05
Nickerson Focus	.37	.38		.41	.22	.18	.02	.03	.03	.05	-.05
McGregor Focus	.25	.40	.41		.47	.33	.27	.15	.25	.23	.07
Allamakee Focus	-.05	.27	.22	.47		.53	.57	.52	.55	.53	.40
Kansas City Focus	.08	.25	.18	.33	.53		.57	.48	.38	.40	.23
Boone Focus	.02	.28	.02	.27	.57	.57		.68	.55	.57	.43
Weaver Focus		.32	.03	.15	.52	.48	.68		.60	.48	.38
Iowa Effigy Mound	.07	.18	.03	.25	.55	.38	.55	.60		.62	.68
Lane Farm	-.05	.27	.05	.23	.53	.40	.57	.48	.62		.57
Wis. Effigy Mound	-.15	-.05	-.05	.07	.40	.23	.43	.38	.68	.57	

Table 20. Coefficients of association for 11 Middle Western burial complexes

County, Wis., which included traits resembling those of his Missouri examples. This mound, described originally by Thomas (1894, p. 48), contained two parallel rock walls between which were extended skeletons. This was similar to the northeastern Iowa mounds described below, and called Allamakee Focus. Thomas (1894, p. 107) also described a mound in the Fish Farm group north of Lansing in Allamakee County, Iowa, which may have contained a stone vault much like those described by Wedel.

The objects associated with the mounds in Missouri resembled those of Late Hopewell characterized by Wray (1952, pp. 155-156). The pot illustrated by Wedel (1943, pl. 36) from Nolan Mound C bore Weaver resemblances. The pot from the Renner Mound, as well as resembling that from New Galena Mound 1, manifests some similarity to the pottery type here called Levsen Stamped. The vessels from the Babcock mounds (Wedel, 1943, pl. 37) suggested a simple form of the Hopewellian fine burial ware. The bodies of these pots were covered with row on row of plain rocker stamping. This treatment was almost identical to that found on the Lane Farm pots. The vessels were small in size, another characteristic of

pottery from the Lane Farm mounds. Mounds with stone structures, some of which resembled those shared by northeastern Iowa and Missouri mounds, were reported from Illinois also (Wedel, 1943, p. 182; Baker, Griffin, et al., 1941, pp. 37-40; Wray, 1938, p. 82). Evidently the mound form in which rock structures were an integral feature was widespread and persisted into the Late Woodland. The Boone Focus of Missouri (Chapman, 1948a, pp. 112-118) was characterized by mounds containing rock vaults or enclosures. Inspection of the traits of the Boone Focus indicates a probable late Woodland placement for the complex.

Wray (1952, pp. 155-156) listed simple rock structures as typical of the Weaver Focus, which he assigned to Late Hopewell in the Illinois River Valley. The two mounds (Mounds 33 and 57 of Effigy Mounds National Monument) in which rock arrangements and subfloor pits were combined probably indicate a local transition to a later Weaver-like mound class. The resemblance between the Trempealeau mounds and Wray's Middle Hopewell mound class has been commented upon previously. A similar resemblance was noted between the northeastern Iowa mounds containing rec-

tangular subfloor pits and the category defined by Wray (1952, p. 155). Out of the list of 18 traits considered typical by Wray, 12 were characteristic of northeastern Iowa mounds. A significant absence in northeastern Iowa, however, was the so-called "classic Hopewell" pottery. The northeastern Iowa mounds containing rock structures did not fit any class differentiated by Wray in the Illinois River Valley. Wray presented rock structures as characteristic of Early Hopewell.

Northeastern Iowa mounds containing simple rock structures will be taken up later. Their relationship to the mounds discussed in this section was manifest in the grave goods found and in the appearance of the rock structures in Mounds 33 and 57. In connection with the probable transitional position of these mounds the radiocarbon date on Mound 33 is significant. Charcoal from just outside the burial pit, lying on what had been the mound floor, gave a date of 1,750 years ago with a standard error of 300 years (Crane, 1956, p. 667, sample M-310). Crane also listed a date on the Pool Site, Pike County, Ill. The date was on charcoal from within a Baehr Brushed pot. The resultant date was 1,740 years ago with a standard error of 250 years (*ibid.*, sample M-183). Baehr Brushed pottery is said to be representative of late Middle Hopewell (James B. Griffin, personal communication). Although the northeastern Iowa Hopewellian mounds were seen to be closely related to those of the Trempealeau and Nickerson Foci, they were considered to represent a local grouping for which the name McGregor Focus is tentatively proposed.

In the late decades of the 19th century, members of the Davenport Academy of Natural Sciences reported on mounds in Illinois and Iowa near Davenport. Many were of Hopewellian origin. Although they have been referred to previously in literature on the Upper Mississippi River Valley (Bennett, 1945, pp. 113-121; Griffin, 1946, p.

68), I believe a summary of their traits will be of value in understanding the northeastern Iowa Hopewellian mounds. To give a complete account of these early excavations would require as many pages as have been consumed here in dealing with the northeastern Iowa sites. The aim of the list of traits is to emphasize the cultural richness of the Hopewellian sites to the south of northeastern Iowa, and to indicate the existence of probable Early and Middle Hopewell sites in Iowa and the adjacent Illinois counties along the Mississippi River in the Davenport area. The traits of the Davenport Hopewellian manifestation are presented in Appendix A.

In comparison with the northeastern Iowa McGregor Focus, the Hopewellian mounds in the Davenport locality give a striking impression of complexity. The reports from which the traits were taken are summaries only, and the excavations were performed at a time when many construction features now well known were evidently not suspected. Such features may have been missed in mounds that, from the reports, seem simple in construction, but lavish in grave offerings. The long list of copper objects is in contrast to that of the McGregor mounds. Similarly, where only plain platform pipes were known from only three mounds in northeastern Iowa, plain and effigy platform pipes were relatively common in the more southerly sites of the Davenport area. There were indications of log tombs in the mounds of the Toolesboro group. Such features were absent for the McGregor Focus. Conch-shell cups, conch shells with burials, and wheel-shaped arrangements of skeletons around seashell cups also were absent in northeastern Iowa. Single skull burials appeared in the sites of northeastern Iowa, but not as frequently, nor as elaborately treated as in the Davenport area.

Traits from some of the Davenport mounds indicate the possibility of a chrono-

*Comparative
Analysis
of Mound,
Rockshelter,
and Village
Sites*

logical position slightly earlier than that of the Hopewellian mounds of the northeastern Iowa counties. Hopewell Zone Incised pottery, square cross-sectioned copper awls, obsidian projectile points, the high frequency of effigy pipes, blade caches, conch and other seashell cups, and the wider use and variety of copper ornaments are indicators of a Middle Hopewell position for much of the Davenport material. Since the copper awls with square cross-sections are so frequently associated with late Archaic and Early Woodland materials, they might be considered indicators of an early Hopewellian level. An interesting mound was reported in Jackson County by Starr (1897, p. 82). It contained burned human bones, pottery fragments, copper knives, and a copper spear point. Again, in view of the usual late Archaic association of such copper implements, it is tempting to assume an early position for the mound. This mound may have been earlier than Hopewell, for there were no typically Hopewellian traits listed from it.

Some differences in construction of the mounds in the various groups of the Davenport locality were noted. Those of the Cook group south of Davenport often contained alternating layers of rock and shell. Description of mounds in the group at Toolesboro suggested the possibility of log tombs. One of the mounds of the Cook group, described by Farquaharson (1876, pp. 118-119) contained layers of stones and shells beneath which were burials accompanied by a seashell cup, cloth-covered copper axes, a copper awl, a flint projectile point, a plain platform pipe, and a frog effigy pipe. Another example of a mound containing rocks described by Farquaharson (*ibid.*, pp. 120-121) from the Cook group was Mound 5. This contained a hard clay layer under several strata of rocks. In the burial area was a heap of stone showing evidence of burning. The burials evidently were of the bone-bundle type.

A shell layer was associated with the pile of rocks and the burials. Grave goods consisted of a copper ax, broken pots, a projectile point of unspecified type, a stone pipe, "whetstones," rodent incisors, bear teeth, and a disk cut from a human skull. The Toolesboro mounds contained grave goods equally elaborate in character. Grave offerings in these mounds included seashell cups, parts of pots containing fresh-water clamshells, copper axes wrapped with cloth, shell beads, effigy pipes, pearl eyes inset in one effigy pipe, copper awls, flint projectile points, antler handles and galena.

The mounds with rock strata among their construction traits assume importance in understanding northeastern Iowa mound developments, for if they are slightly earlier in time, they may represent an immediate local source of the trend toward a mound containing simple rock structures in the late Middle Woodland and Late Woodland levels.

The Davenport mounds were discussed by Bennett (1945, pp. 113-122) in a comparison with the mounds of the Nickerson Focus in Jo Daviess County, Ill. Bennett looked upon Nickerson and the Davenport material as being related. Relationships are evident in mound construction and grave goods, but the simplicity of the northeastern Iowa mounds and the northwestern Illinois mounds in comparison to Davenport cannot be overlooked. Davenport shares more traits with the Ogden-Fettie Focus in central Illinois than does northeastern Iowa. I view the Davenport mounds as the work of slightly earlier groups which, along with Illinois River Valley groups, probably transmitted ideas to the simpler Woodland peoples of northeastern Iowa and western Wisconsin. The Nickerson Focus would have played a part in this process. The rather close relationship between Nickerson and the Allamakee and Clayton County mounds was emphasized above. Bennett (1952, p. 117) evidently looked upon these

northeastern Iowa mounds as part of the Nickerson Focus. However, I would prefer to maintain the Iowa example as a separate class, at least temporarily, looking upon them as the product of a local group of people who were a link in a cultural chain extending up the Mississippi River from the Davenport and central Illinois areas into Minnesota.

The Hopewellian traits in northeastern Iowa burial mounds can be viewed as the result of borrowing on the part of these groups from more southerly neighbors, and it is evident that in this borrowing, local groups such as those represented by the Nickerson, McGregor, and Trempealeau mounds probably selected certain traits on which they laid most heavy emphasis. Thus, in Trempealeau, mounds with rather elaborate central pits or tombs are found, but in the McGregor area, simple rock structures, simple rectangular pits, or combinations of rock structures and pits were in vogue. Nickerson may have had a longer time span within which Middle Woodland or Hopewellian burial practices were followed, for there is evidence of greater variation in mound structure among the Nickerson burial sites. The simplicity of Nickerson grave goods (items more likely to diffuse than modes of mound construction) indicate that Nickerson could not have been a close affiliate of the Davenport sites.

I believe the mounds included in Bennett's Nickerson Focus can be separated into temporally distinct but related groupings similar to the classes differentiated here as the McGregor and Allamakee Foci. Mounds which Bennett included in the Nickerson Focus, showing relationship to the Allamakee Focus mounds, will be discussed in the next section. The northeastern Iowa Hopewellian mounds have been presented here as a tentative local grouping separate from Trempealeau and Nickerson for reasons detailed above. The name, McGregor Focus, is proposed for these mounds.

They are considered to have existed on the late Middle Hopewell level, and to have been related to the Allamakee Focus to be described in the section which follows.

Conical Mounds with Few or No Grave Goods

Twenty-one northeastern Iowa mounds contained features indicative of a relationship to the Hopewellian mounds, but they were simpler in construction and content. They were separated into three classes as follows:

1. Mounds containing subfloor pits or floors from which the humus had been removed; containing extended or bundle burials; pots with burials; or rock alignments with burials.
2. Mounds with subfloor burial pits; evidence of fire; bundle burials; rock alignments; and Linn Ware pottery.
3. Mounds which were single crematory units.

Characteristics of these mounds are summarized in table 21. This was a relatively homogeneous class. Only three mounds deviated from the general characteristics of the grouping to any extent. These were New Galena Mound 30 and Waukon Junction Mound 4 in which secondary cremation burials were found; and Gudovissy Mound 1 which contained a shallow oval pit. When these mounds were compared with the stone vault mounds of Kansas City, the Boone Focus of central Missouri, and the Weaver Focus of Illinois, coefficients of association derived indicated a high degree of relationship (tables 19 and 20). The affiliation was especially close between these mounds and the two Missouri groupings. The next closest affiliation was with the Weaver Focus. In evaluating this relationship, however, it should be borne in mind that the comparative data available for the Weaver Focus were not detailed. The list of

*Comparative
Analysis
of Mound,
Rockshelter,
and Village
Sites*

Table 21. Conical mounds with few or no grave goods

Mound number	Burial type	Pit	Other features	Grave goods
New Galena Mound 4	Extended	Pit of unknown form	Charred material and rocks	Levensen Punctuated pot
New Galena Mound 18	Extended	Two rectangular pits	in pits; sand over pits	
New Galena Mound 30	Cremations			Levensen Stamped pot
Paint Rock Mound 1	Extended			
Harvey's Island Mound 1	Bundle	Shallow; form unknown		
Mud Hen Joe Mound 2	Extended	Humus removed from floor	Rocks over burials	Levensen Stamped pot
Hill Mound 1	Extended	Humus removed from floor	Parallel rock walls at ends of burial area	Grit-tempered pot
Gudovissy Mound 1	Bundle	Shallow oval pit	Heap of stones	Grit-tempered pot;
Gudovissy Mound 4	Bundle	Shallow; form unknown		trophy skulls (?)
Slinde Mound 7	Fragmentary	Humus removed from floor	Charred logs	Pots; one decorated with curvilinear festoons
Slinde Mound 8	Bundle	Humus removed from floor		
Ryan Mound 3	Bundle	Humus removed from floor	Clamshell cache	Crude ovoid blade
Waukon Junction Mound 4	Cremations	Shallow; form unknown		
Valley Mound		Large; shallow; rectangular	Rock walls at ends of pit; burned clay over pit	
French Town Mound 8	Cremations	Clay-lined basin with clay rim	Pit containing ashes, charcoal, and rocks	Part of Levensen Punctuated pot
Pleasant Creek Mound 8	Bundle	Rectangular; north-south oriented	Charred logs over basin; stone altar	Levensen Punctuated pot
Harpers Ferry Group 13, Mound 2	Fragmentary	Humus removed from floor	Rock wall	
Hill Mound 3	Fragmentary	Humus removed from floor	Rocks over burials	Clamshell in burial area
Hill Mound 4	Fragmentary		Rock wall	
French Town Mound 4	Bundle		Parallel alignments of rocks	Clamshells in burial area
Deppe Mound 7	Bundle		Irregular rock walls	
Hog Back Mound 3	Fragmentary			Spring Hollow Plain pot

traits employed was taken from Wray's (1952, pp. 155-156) summary of Weaver.

The interrelationships of all of these local phenomena are interesting. The Boone Focus is most closely affiliated with both the mounds of the Kansas City area and the Weaver Focus. The greater complexity of the Hopewellian foci indicate that they are not closely associated with these simpler burial complexes. Low coefficients bore out this assumption. From these comparisons it was concluded that the northeastern Iowa mounds were related to the Weaver Focus and to the two Missouri burial complexes. The relationship to the Kansas City area mounds was important, for these evidently belonged to a Missouri Hopewellian group. Inspection of the trait lists will show that the Kansas City Mounds represent a Hopewellian burial complex simpler than those of Wisconsin and Illinois. The relationship to the simpler conicals of northeastern Iowa was probably enhanced by a combination of the presence of stone structures in both classes and the shortness of the trait lists for both in relation to those of more complex assemblages. Certain Boone Focus artifacts, however, evidently were the result of influence from a Mississippian complex (Chapman, 1948a, pp. 113-114). As a result, they differ from all of the classes of grave goods represented in the Iowa mounds.

South of the northeastern Iowa counties, some mounds excavated by the Davenport Academy resemble this burial mound category. Tiffany (1876a, pp. 64-65) reported on a prehistoric "cremation furnace." This was located on the Staffelbach farm north of Davenport. It was clearly a mound similar to French Town Mound 8 and Waukon Junction Mound 4. It contained burned clay over what was evidently a saucer-shaped excavation. Burned human bones were found beneath the clay. Tiffany said that the fuel for the fire had been placed in and above the layer of bodies cremated. Portage Mound 7 and MacDonald Mound 1 in Jo

Davieess County resembled the Staffelbach mound and French Town Mound 8 (Bennett, 1945, pp. 26-31, 54-55). Both of the Jo Davieess County mounds contained saucer-shaped incinerary hollows, burned earth, ashes, cremations, and burned logs or charcoal. In MacDonald Mound 1, as in the Staffelbach mound, the fire seems to have been below the burned clay. A pot was associated with the remains in Portage Mound 7. This pot was illustrated by Bennett (1945, pl. 5), and it resembles those variations of Spring Hollow Incised bearing fingernail punctates over a cordmarked surface. No grave goods were reported from MacDonald Mound 1. Tiffany reported none from the Staffelbach mound.

Portage Mound 4, also described by Bennett (1945, p. 32), resembled these relatively simple northeastern Iowa mounds summarized in table 21. It contained an ash layer under a clay stratum. This is suggestive of the burial complex of Waukon Junction Mound 4 and the Valley Mound of Allamakee County. In his summary of Iowa archeology, Starr (1897, pp. 82-83) gives brief descriptions of several mounds similar to Allamakee and Clayton County examples. Boothby Mounds 6 and 7 in Jackson County were simple conicals containing, in the case of Mound 6, skeletons with no grave goods and, probably, an intrusive skeleton with partially burned bones in a bed of ashes. Mound 7 contained a burial covered with rocks. This layer, in turn, was covered with charcoal and burned stones. In Clinton County, Starr (1897, p. 68) reported a mound with rocks over the burials and evidence that fires had been kindled above some of the skeletons. What probably was a slate gorget with two holes was also found.

The pot in French Town Mound 8 was of the Levens Punctated type. It closely resembled Weaver Plain pottery of Illinois (fig. 14). The similarity of this burial complex to the Weaver burial complex along with the

*Comparative
Analysis
of Mound,
Rockshelter,
and Village
Sites*

Table 22. Effigy mounds and related conicals

Mound number	Burial type	Pit	Other features	Grave goods
Brazell's Island Bear Effigy Sny-Magill Bird Effigy	Bundle; in pit Fragmentary; on platform	Oval	Stone altar; ash lens Clay platform	Madison Cord-Impressed pot
Martell Mound 3	Bundle; above floor; on floor		Stone altar Stone altar	Contracting-stemmed point Corner-notched point
Martell Mound 5	Extended; frag- mentary; on floor		Stone altar; humus removed from floor	
Lane Farm Mound 1	Extended; frag- mentary; on floor		Charcoal and animal bone concentration	Lane Farm Cord-Impressed pot; pottery elbow pipe; corner- notched point; clamshell
Lane Farm Mound 2	Bundle; above floor		Stone altar	Crude scrapers; copper celt; hammerstone
Lane Farm Mound 3	Bundle; extended; on floor; above floor		Stone altar	Part of Lane Farm Cord- Impressed pot; clamshell
Lane Farm Mound 11	Extended; frag- mentary; on floor; Oneota Intrusive		Stone altar	Lane Farm Cord-Impressed pot; clamshells in pot
Lane Farm Mound 12	Bundle; in pits; on mound floor	Oval	Stone altar	Lane Farm pottery; copper beads; pottery elbow pipe- stem; projectile points
Lane Farm Mound 13	Bundle; above floor; on floor	Excavations; form unknown	Stone altar	
Lane Farm Mound 16	Single skull burial	Excavations; form unknown	Stone altar Stone altar in mound floor	Lane Farm Cord-Impressed pot; straight-stemmed point
Lane Farm Mound 17	Bundle; on floor		Rocks in mound	Madison Cord-Impressed pot; triangular point
Slinde Mound 12				
Slinde Mound 6				
Bentley Mound				

<i>Mound number</i>	<i>Features</i>	<i>Burial type</i>	<i>Grave goods</i>
New Galena Mound 2	Humus removed from floor	Extended	
New Galena Mound 8		Bundle	
New Galena Mound 15	Intrusive Oneota pits	Bundle	
New Galena Mound 23		Intrusive Oneota	Hopewell pipe with Oneota burial
New Galena Mound 32			Lane Farm Stamped sherd
Hog Back Mound 1		Extended; fragmentary; Oneota Intrusive	
Gudovissy Mound 8	Humus removed from floor		
Lane Farm Mound 7			Linn and Lake Michigan Ware sherds in mound fill
Lane Farm Mound 10		Bundle; Oneota Intrusive	
Slinde Mound 13			Netsinker
Mud Hen Joe Mound 1	Rocks in mound		

Table 23. Simple conical mounds

close resemblance to Weaver Plain pottery in the French Town Mound 8 pot indicated a chronological position for these mounds comparable to that of Weaver. The term, Allamakee Focus, is proposed to designate this burial complex.

Effigy Mounds and Related Tumuli

The Iowa Archaeological Survey excavated only one effigy mound in the years of its activity. For comparative purposes, one effigy mound excavated at Effigy Mounds National Monument was added to this. The excavation details on this mound have been presented in an earlier paper (Beaubien, 1953, pp. 60-61). The characteristics of two effigy mounds and certain conicals resembling effigies in content are summarized in table 22.

Oval burial pits, humus removed from mound floors, excavations of unknown form, and stone altars were characteristic of these mounds. Both bundle and extended burials were found, although the extended burials were restricted to the Lane Farm mounds. The burials occurred both in pits and on the mound floor outside the pits. Burials arranged in layers also may have been characteristic of at least the Lane Farm mounds. Pottery was a reasonably common item among the grave goods, particularly in the Lane Farm mounds. Madison Cord-Imprinted pottery was found in the Brazell's Island Bear Effigy and the Lyle Bentley conical. The Brazell's Island Bear Effigy also contained stone artifacts, although they were not necessarily associated with the burial complex. These were expanding-

*Comparative
Analysis
of Mound,
Rockshelter,
and Village
Sites*

stemmed, corner-notched, and contracting-stemmed projectile points; scrapers; and an expanding-base drill (fig. 23). A small triangular projectile point was found with the burial in the Bentley conical mound. Another item found in the Brazell's Island Bear Effigy was a crude, oblong chipped stone object of unknown use (fig. 23g). I have noted such objects in the collections of many local amateurs, and I assume that they are associated with the effigy complex.

The type of pottery called Lane Farm Cord-Imprinted was restricted to the Lane Farm and Slinde mounds. Artifacts associated with the Lane Farm pottery included pottery elbow pipes; corner-notched, contracting-stemmed, and straight-stemmed projectile points; copper celts; crude scrapers; and hammerstones. Lane Farm Mound 16 also contained short cylindrical copper beads and a small triangular projectile point. Stone altars, concentrations of ashes and animal bones, and burials in oval pits or on mound floors were included in the features of mound construction. The construction of Slinde Mound 6 differed somewhat from that of the other mounds, for it contained posts in the mound floor around the burial area. This type of structure has been reported as characteristic of Maples Mills burial mounds in Illinois (Wray, 1952, p. 156).

Evidence indicated that the Lane Farm mounds, in spite of their containing extended burials and a slightly differing pottery type, could be considered part of an Iowa manifestation of the Effigy Mound Aspect. Certain traits appearing in the Lane Farm mounds indicate some relationship to Hopewell or the Weaver Focus. These were extended burials, dentate and plain rocker stamping on the bodies and rims of pots, corner-notched projectile points resembling the Snyders Notched type, and the overall richness of the array of grave offerings compared with the content of true effigy mounds. The short cylindrical copper beads and large straight-stemmed projectile points

were reminiscent of similar items found in the Houlihan Mound. Another interesting characteristic of the Lane Farm mounds was the appearance of a clamshell in one of the pots found in Lane Farm Mound 13. This seems to be analogous to the placement of clamshell spoons in pots in late Hopewellian mounds in Illinois.*

In two of the Allamakee Focus mounds, parts of pots were found in association with the burials. A similar find was made in Lane Farm Mound 12. The practice of placing parts of pots with burials in effigy mounds had been described by Rowe (1956, p. 20). Wray (1952, p. 156) listed "sherds of the type wares" among the typical burial associations in Weaver mounds. This trait was considered further evidence of contemporaneity of the effigy mounds, the Weaver Focus, the northeastern Iowa Allamakee Focus, and Lane Farm. The Lane Farm mound type, therefore, evidently appeared in the late stages of local Hopewellian development.

The processes which gave rise to Lane Farm are not completely clear in the material now available. Lane Farm may have resulted: (1) from late Hopewellian influence on a previously existing burial complex of effigy mound affinities; or (2) from the spread of effigy mound traits into northeastern Iowa during the latter days of Hopewellian mound building.

The first hypothesis assumes existence of effigy mound burial practices in northeastern Iowa far earlier than present evidence warrants. The second presupposes a strong effigy mound complex in central Wisconsin roughly contemporaneous with late Hopewell. There is some evidence to support this latter assumption. Hopewell appears to

*This is based on a personal examination of pots in the collection of Dr. Dan Morse of Peoria, Ill. Both pots contained shell spoons. They were of the type called Baehr Brushed, which is considered a late form of fine Hopewellian burial ware.

have arrived late in the northern Mississippi Valley. Distribution of Hopewellian sites in Wisconsin suggests that the central part of the state, if occupied during late Hopewellian times, was the domain of peoples unaffected by the late and weak Hopewellian burial complex impinging on their borders. The local northeastern Iowa sequence of Hopewellian phenomena, in turn, reflects the gradual decline of a burial complex already past its apogee in comparison to related complexes in the Davenport area and central Illinois. Hence, Lane Farm logically appears as the result of influence from an expanding effigy mound complex upon a declining Hopewell-Weaver complex, the latter being submerged ultimately, and supplanted by effigy mounds.

Comparison of the Lane Farm mounds with the Allamakee Focus furnishes further evidence in support of the foregoing hypothesis. In the table of coefficients of association (table 20) a relatively high resemblance was noted between these two sets of mortuary customs. Detailed resemblances were noted in the artifacts. In the mound fill of Harvey's Island Mound 2, part of a single-cord decorated pot was found. This vessel had thin walls and very fine grit tempering (fig. 9). The upper rim was channeled on the interior. The contents of the mound itself indicated that it belonged to the McGregor Focus. Unless these potsherds stemmed from a later village deposit unmentioned by Orr, the only logical interpretation is that the pottery had been incorporated in the mound fill accidentally at the time the tumulus was built. Hence, the single-cord decorative technique must have been in existence at or before the time the mound was built.

In the Harpers Ferry Valley Mound, a sherd with single-cord decoration was found in association with Levsen Punctated pottery. This sherd was somewhat different from Madison Cord-Imprinted and Lane Farm Cord-Imprinted. The rim was straight

and indicated almost no shoulder expansion. The entire outer surface was roughened with a cord-wrapped paddle. The single-cord decoration was applied over the cordmarked surface (fig. 15). Except for the single-cord technique and the decorative motif itself, the sherd resembled Weaver Ware. It also resembles sherds from Nebraska Woodland sites (Kivett, 1952, pls. XXVI, B, 9; and XXVII, A, 3, and 4).

In describing a number of Wisconsin mounds, Rowe (1956, p. 63) illustrated potsherds from effigy and related mounds which appear to have been decorated in techniques and motifs resembling those of Havana Ware. Similar pottery in the Nelson Dewey site was associated with Weaver-like sherds. This appears to be further evidence of an Effigy Mound and Lane Farm relationship with late Hopewell. The dentate stamping on the bodies of Lane Farm pots resembles that found on certain Illinois Weaver pots. It is also much like that on the body of the Levsen Punctated pot from French Town Mound 8 which was considered a local variation of Weaver pottery. At the village site and mound group west of the railroad switch tower located on the south end of the Prairie du Chien terrace, across the Mississippi River from McGregor, a pot was found which had a single-cord decoration on the rim and a cordmarked body. Dentate stamping had been haphazardly applied over the cordmarked body. Such body treatment resembles that of some Weaver pottery in Illinois (Griffin, 1952b, p. 122). The pot is in the collection of Gordon L. Peckham of Prairie du Chien, Wis.

Mound construction features and burial types of the Lane Farm and Iowa effigy mounds resemble those of the Allamakee and Weaver foci. Many of these traits were generalized characteristics found in nearly all of the mound types included in the comparison. Five construction traits were shared by the Allamakee Focus and the Lane Farm and effigy mounds. These are: (1) humus

removed from the mound floor, (2) ash lenses in the mound, (3) rocks in the mound, (4) stone altars or rock piles near burials or burial pits, and (5) clamshells in the mound. With the exception of the last two traits listed above, all were common to these mounds alone. These shared traits served to indicate relationship between the effigy mounds, the Lane Farm mounds, and the Allamakee Focus.

Comparisons were made between the effigy mounds of Iowa and those of Wisconsin as a part of the process of adding comparative material to table 19. However, due to the very limited data available from the Iowa mounds, it was not advisable to lean too heavily on results of the comparison. Within the limits of the material on hand, it was obvious that Iowa mounds of the effigy type represented an extension of the Wisconsin Effigy Mound Aspect westward into Iowa in the northeastern counties bordering the Mississippi River.

The stone altars, oval pits, charcoal and animal-bone concentrations, and bundle burials of the Iowa effigies and Lane Farm mounds all were characteristic of Wisconsin effigy mounds. In table 19, the coefficient of association for the Iowa effigies in comparison with Wisconsin effigy mounds was the highest obtained in any pair combination given in the table. The Lane Farm mounds yielded a slightly lower coefficient when compared to Wisconsin effigy mounds. The pottery known to be associated with effigy mounds in Iowa included only Madison Cord-Imprinted. Although the two vessel forms presented in figure 90 indicate round bases for this pottery type, examination of sherds indicate that a more common vessel form had an elongate body and conoidal or rounded conoidal base. This is a typical Woodland vessel form. This pottery type has characteristics of the Lake Michigan Ware of Wisconsin and was included within that category. It is not as elaborate as some forms of Lake Michigan

pottery such as those forms from Aztalan where rim collars, rim nodes, and pointed rims were noted (Barrett, 1933, p. 307). Seriationally, these more elaborate forms were placed as developments out of the simpler Madison Cord-Imprinted. The more elaborate forms, however, were found in Jackson County.

In Illinois, the Maples Mills complex reported by Cole and Deuel (1937, pp. 191-198) resembles that of the Effigy Mound Aspect in content. Wray (1952, p. 156) considered the Maples Mills Focus to have followed the Weaver Focus, evidently as part of a nonoverlapping chronological sequence in the Illinois River Valley. If this were the case, I think Maples Mills, or at least those features of it resembling the Effigy Mound Aspect, may have appeared in Illinois slightly later than in northeastern Iowa, where some evidence for contemporaneity of Lane Farm, Effigy Mound, and Weaver were noted. Maples Mills evidently contains more elements of probable Mississippian origin than does Effigy Mound. This may be evidence for persistence after the effigy complex had declined in Wisconsin, or, quite likely, evidence reflecting the proximity of Maples Mills to large Middle Mississippian sites.

Simple Conical Mounds

Thirteen mounds excavated by the Iowa Archaeological Survey were very simple in construction and content. Where construction features were noted, floors cleaned of humus were typical. Bundle burials were encountered, and a fragmentary burial was found in one mound which could have resulted from Oneota disturbance. The few grave goods which appeared consisted of simple utilitarian items, such as a chipped stone celt, a crude scraper, pottery resembling Lake Michigan and Linn Wares, and a netsinker. Intrusive burials accompanied by Oneota grave goods were common. One

mound contained an Oneota burial with which a broken Hopewellian platform pipe was included. Evidently, the pipe had been appropriated by the Oneota and added to the grave offerings placed with their own interment.

These mounds were so simple in content and structure that it was impossible to assign them to any previously defined complex. They appeared in a number of different mound groups surrounded by McGregor and Allamakee Focus mounds, effigy mounds, and mounds of the Lane Farm type. The Late Woodland sherds found in the mound fill of several indicate that they would have been contemporary with, or slightly later than, the effigy mounds. Their characteristics are summarized in table 23.

ANALYSIS OF ROCK SHELTERS AND VILLAGE SITES

Although most of the village site information was unsatisfactory for reasons stated earlier, one complex can be outlined in some detail. Another partial village complex is apparent, and by careful trait selection, the probable content of a third complex may be presented.

The Minott's Focus

In an attempt to introduce order into the habitation site data, analysis was begun with sites containing single complexes. Six rock shelters contain this kind of information. These are the Minott's Rock Shelter, the two Gingerstairs Shelters, Spring Hollow Rock Shelter Nos. 2 and 3, and the Highway Thirteen Shelter. The Minott's site is important, for it contained not only indications of a single occupation, but also an array of artifacts somewhat more complete than that of the other five related shelters. The bulk of the pottery in the Minott's shelter belonged to the two related types, Madison Cord-Imprinted and Minott's Cord-Imprinted.

These were accompanied by minor quantities of Spring Hollow Plain and Minott's Plain. Projectile point types included small triangular and triangular side-notched, small and large corner-notched, contracting-stemmed, and ovoid. The remainder of the assemblage consisted of planoconvex scrapers, oval and lanceolate knives, knives made from irregular flakes, crude flint core choppers, hammerstones, abraders, anvilstones, antler flakers, a ground hematite fragment, a notched carnivore canine, and a perforated clamshell.

Similar assemblages existed in the Gingerstairs shelters and Spring Hollow Rock Shelter No. 3. These sites contained some traits not shared in Minott's. In Gingerstairs Rock Shelter No. 1, a straight-stemmed projectile point and a pottery pipe were found (fig. 81). Spring Hollow Rock Shelter No. 3 contained a type of pottery of rare occurrence in northeastern Iowa. This pottery was decorated with chevrons produced by fingernail incising on the lip, and with single-cord impression on the exterior rim. The rim was wedge-shaped in cross section and resembles Owasco pottery of New York State (Ritchie, 1947, p. 65, pl. 4, 4). No Spring Hollow Cordmarked or Plain sherds were found.

Spring Hollow Rock Shelter No. 2 contained the same assemblage with slight differences. Madison Cord-Imprinted was the sole single-cord decorated type found. Spring Hollow Plain and Cordmarked types were present in greater quantities than in the other shelters. One sherd of Levsen Stamped pottery was recovered. The projectile point types were similar to those from the Minott's and Gingerstairs shelters. A shallow deposit in the approach trench of Spring Hollow Rock Shelter No. 2 indicated association of the single-cord decorated pottery types of this complex with Levsen Stamped and Spring Hollow Incised. Among the stone artifacts in the approach trench, an expanding-stemmed projectile point rep-

*Comparative
Analysis
of Mound,
Rockshelter,
and Village
Sites*

Traits	Sites							
	Ginger-stairs		Spring Hollow		Spring Hollow		Highway	Crab-
	1	2	1	2	3	Minott's	Thirteen town	
Madison Cord-Imprinted pottery	X	X	X	X	X	X	X	X
Minott's Cord-Imprinted pottery	X	X	X	X	X	X	X	
Spring Hollow Cordmarked			X		X	X		X
Spring Hollow Plain	X		X	X	X	X		X
Single-cord decoration with chevrons incised on lip			X		X			
Minott's Plain			X			X		X
Shell tempered sherd			X					
Havana Cordmarked								X
Levsen Stamped			X	X			X	X
Naples Stamped								X
Lane Farm Stamped								X
Black Sand Incised								X
Spring Hollow Incised			X	X				X
Small straight-stemmed point	X		X			X		
Large corner-notched point	X	X	X	X		X	X	X
Small corner-notched point	X		X	X		X		
Large contracting-stemmed point		X	X			X	X	
Large triangular point	X		X	X		X		
Small triangular point		X	X	X		X	X	X
Small triangular side-notched point	X	X	X	X		X		
Ovoid point				X	X	X		X
Large side-notched point				X				
Large flat-based knife				X	X	X		
Large round-based knife	X	X		X	X	X		X
Flake knife		X	X	X	X	X	X	
Ribbon flake knife			X	X		X		
Spokeshaves		X	X			X		
Planoconvex scraper		X	X	X	X	X	X	
Flint core chopper	X		X	X	X	X		
Hafted scraper							X	
Pebble hammerstone		X	X	X	X	X	X	
Anvilstone				X	X	X		X
Hematite lump						X		
Pestle				X				
Mortar				X				
Sandstone abradar				X				
Bone splinter awl						X	X	
Notched carnivore canine						X		
Antler flaker				X	X	X	X	
Polished antler tip			X	X				
Cut antler fragments				X				
Polished turtle plastron square							X	
Polished bone fragment				X				
Deer ulna awl				X				
Perforated mussel shell				X		X		
Worked shell					X			
Fresh-water pearl bead							X	
Pottery elbow pipe	X							
Toy pot							X	

Table 24. Comparative trait list for sites of the Minott's Focus

resented an artifact type not noted before in this complex. Bone tools in both the shelter and the approach trench included a polished antler tip and a deer ulna awl — types of artifacts not noted previously.

These sites represent a single cohesive cultural unit in Linn County. Indications that the complex is of wider distribution were apparent in comparing the Linn County sites with the Crabtown Rock Shelter in Jackson County. The village sites considered part of this complex are presented in table 24. The Highway Thirteen Rock Shelter is not considered a part of the Minott's Focus, but it has been included in table 24 for purposes of comparison.

Although the artifact inventory was not a long one, the materials from the Highway Thirteen Rock Shelter were comparable to those of the Minott's complex. Spring Hollow Rock Shelter No. 1 could not be considered a classic site of the Minott's Focus. It contained pottery types representative of the Minott's assemblage mixed with pottery of types seemingly not a part of this unit. Percentage comparisons of the pottery in the excavation levels (table 15) indicate that the upper two levels may have been distinct from the lower two levels and that Level III (12 to 18 inches deep), which separated the upper section from the lower, may have been a zone of transition in which both entities were mixed.

The information from this excavation suggests that Spring Hollow Incised and Spring Hollow Brushed appeared earlier than the single-cord decorated pottery. It may also have appeared slightly earlier than Spring Hollow Cordmarked, Spring Hollow Plain, and Levsen Stamped. I judge that the upper two levels were part of the Minott's complex. The artifacts listed in table 24 are from these two levels only.

In an early attempt to order some of the mass of data derived from the Iowa Archaeological Survey's activity, Keyes (n.d., pp. 4-5) made a general definition of a Maquou-

keta Aspect. Geographically, sites belonging to this aspect were distributed over the entire area considered in the present discussion. In terms of the Middlewestern Taxonomic System, I think the Minott's Rock Shelter, the two Gingerstairs shelters, Spring Hollow shelters 2 and 3, the upper levels of Spring Hollow Rock Shelter No. 1, and the Crabtown shelter can be considered a focus of the Effigy Mound Aspect. I do not believe there is any need to differentiate the Iowa sites through the creation of a separate aspect. This focus should be referred to as the Minott's Focus.

I believe another focus may be defined eventually from sites in the extreme north-eastern counties following excavations under more carefully controlled conditions. The complex represented in a fragmentary way at the Highway Thirteen Shelter would be a part of this local entity. The difference between Clayton and Allamakee County sites and Linn and Jackson County sites noted in the present meager array of data are:

1. Absence of Minott's Cord-Imprinted pottery in Allamakee and Clayton Counties.
2. Apparent absence, in Allamakee and Clayton Counties, of pottery vessels with squared orifices, rim points, rim nodes, or collars.
3. Impression that there is greater frequency of opposed triangle decorative motif on the Madison Cord-Imprinted pottery of Linn and Jackson Counties.
4. Probable association of the Clayton and Allamakee County manifestation of this complex with true effigy mounds, as compared with the absence of effigies in Linn and Jackson Counties.

Association of single-cord decorated pottery of the Madison Cord-Imprinted type with effigy mounds has been noted previously in describing the Brazell's Island Bear Effigy. Another such association was reported in Wisconsin (Wittry and Bruder,

*Comparative
Analysis
of Mound,
Rockshelter,
and Village
Sites*

1955, pp. 5-6 fig. 2a). Rowe (1956, pp. 59-64) also described and illustrated pottery from effigy mounds which was of the Madison Cord-Imprinted type. Effigy mounds have not been reported south of Dubuque County, nor are they found west of Allamakee and Clayton Counties. Pottery of the Madison Cord-Imprinted type has a far wider distribution.

The Minott's Focus is evidently related to the Maples Mills Focus. Comparison with the list of traits given by Cole and Deuel (1937, pp. 194 and 226) indicates strong similarity both in pottery and other artifacts. Maples Mills pottery is perhaps closer to that of the Minott's Focus than it is to the Madison Cord-Imprinted pottery of Allamakee and Clayton Counties. Sherds illustrated by Cole and Deuel (1937, p. 194, figs. 37 and 19a-b) resemble rims of Minott's Cord-Imprinted. Maples Mills contained a series of projectile point types similar to that of the Minott's Focus. Small corner-notched, side-notched, triangular, and straight-stemmed types were found in both foci, as well as large side-notched and corner-notched points.

There were suggestions of affiliation between the Minott's Focus and the Boone Focus of Missouri. Similar projectile point types, similar pottery vessel forms, and pottery elbow pipes of related type were indications of connection between the two (Chapman, 1948a, pp. 112-117, fig. 89). Pottery elbow pipes, similar vessel forms, and similar projectile point styles were noted also in comparing the Ralls Focus of Missouri with the Minott's Focus (*ibid.*, pp. 118-121). In the Ralls and Boone foci, however, mounds are included which more closely resemble the Allamakee Focus mounds. Decoration did not occur on Boone Focus pots, and the decoration on Ralls pottery differs from that on vessels of the Minott's Focus.

Both of the Missouri complexes exhibit striking similarity to the Illinois Weaver Fo-

cus. Weaver-like traits in the Minott's Focus included the use of small stemmed and notched points and Spring Hollow Cord-marked and Plain pottery. The interrelationships of the Boone, Ralls, Weaver, and Minott's foci serve to indicate the late position of the Minott's Focus in Iowa, for the Illinois and Missouri manifestations are evidently on the late Middle Woodland and Late Woodland levels (Griffin, 1952a, fig. 205). Further afield in the eastern United States, there are resemblances between the Minott's Focus and the Allamakee and Clayton County effigy mound materials and the Owasco Aspect of New York State.

Pottery similarities between Owasco and some Minott's Focus sherds have been commented on previously. The pottery elbow pipe found in Gingerstairs Rock Shelter No. 1 resembled an Owasco pipe. Pipes from the Lane Farm mounds are also comparable to Owasco; they are decorated on the bowls in a style similar to that on some specimens in northeastern Iowa (Ritchie, 1936, p. 38, pl. XIII). The surface treatment of some Owasco sherds resembles that of body sherds of Minott's Cord-Imprinted (*ibid.* p. 42, pl. XV, 8). The wedge-shaped rim with lip decoration noted in Owasco resembles the rare incised-chevron decorated sherds in Minott's Focus sites. One form of rim illustrated by Ritchie (*ibid.*, p. 42, pl. XV, 1, 2) resembles the rim form of Minott's Plain. Owasco projectile point types seem to fall within the range of types characteristic of the Minott's Focus. Ritchie (*ibid.*, pl. XII, 1, 24) has illustrated contracting-stemmed, straight-stemmed, corner-notched and triangular points. It is of interest that the concave-based triangular points illustrated by Ritchie are nearly identical to one of the two triangular points found in the Kolterman Bird Effigy in Wisconsin (Wittry and Bruder, 1955, p. 6, fig. 2D).

The pottery of the Minott's Focus is clearly related to western Iowa manifestations. The Keyes Collection contained

sherds from a series of sites along the Missouri River and its tributaries in southwestern Iowa, south of Council Bluffs. The sherds have been referred to as Missouri Bluffs pottery in the literature on Plains Woodland. Missouri Bluffs pottery is decorated with single-cord impressions in motifs similar to those of Madison Cord-Imprinted. The vessel form of this pottery differs somewhat from known Madison Cord-Imprinted vessel forms. The salient difference is a considerably longer neck on the Missouri Bluffs vessels. The vessel form resembles that of Sterns Creek pots from the same southwestern Iowa area (Keyes, 1949, p. 97, pl. VIII, upper left and upper right).

Another western Woodland complex resembling the Minott's Focus is that described by Kivett (1952, pp. 43-70) who found single-cord decorated pottery similar to Madison Cord-Imprinted associated with a cordmarked type with upper-rim punctates like those of Levsen Punctated vessels. Stone material from the Nebraska site included straight-stemmed and corner-notched projectile points, planoconvex scrapers, side scrapers, blades, choppers, and hammerstones (*ibid.*, pp. 55-57). A polished antler tine was also found. Another western Woodland complex similar to the Minott's Focus and Missouri Bluffs was that at the Scalp Creek site in South Dakota. Hurt (1952, p. 16) assigns this Woodland complex to the Loseke Creek Focus. Pottery and projectile point types are similar to those of the Minott's Focus, although Hurt (*ibid.*, figs. XXVI and XXX) illustrates a greater range of stone artifacts than was available from the northeastern Iowa shelters described here.

The interrelationships of the Minott's Focus, the fragmentary complex of the Highway Thirteen Rock Shelter, and the Effigy Mound Aspect of Wisconsin were considered. The village material presented by Baerreis (1953, pp. 9-19) includes artifacts of types also found in the Highway Thirteen

shelter and the Minott's Focus. Baerreis found small corner-notched and triangular points, small ovoid points or knives, and a pottery pipe fragment associated with Madison Cord-Imprinted pottery. Sherds with dentate rocker stamping reminiscent of that noted on Levsen Punctated and Lane Farm Stamped were found. Baerreis (*ibid.*, p. 19) identified this site as an effigy mound village component. Rowe (1956) in his summary of effigy mound culture, presents an assemblage of artifacts associated with effigy mounds and Lake Michigan Ware pottery in Wisconsin. His projectile point types include all of those noted in the Minott's Focus (*ibid.*, pp. 48, 52, and 53). Rowe illustrates pottery associated with effigy mounds which include, in addition to Madison Cord-Imprinted, sherds resembling Spring Hollow Incised and Levsen Punctated. He illustrates a turtle plastron "mesh spreader" identical to the one found in the Highway Thirteen Rock Shelter (*ibid.*, p. 49).

The Minott's Focus evidently is an extension of the basic village complex of peoples who built effigy mounds beyond the range of effigy construction in Iowa. In some traits, such as Minott's Cord-Imprinted and Minott's Plain pottery, it is closer to the Maples Mills Focus than to the Wisconsin effigy mound sites. The fragmentary complex of the Highway Thirteen Rock Shelter is closely related to that of the Wisconsin Effigy Mound Aspect. It is probably representative of small campsites of peoples who built the effigy mounds of Allamakee and Clayton Counties. It is important in that it adds, in addition to mound burials, another treatment accorded the dead among these groups, for the burials found in the shelter appear to stem from the same source as the camp debris.

It is significant that in the northeastern counties collared and noded rims found on some Lake Michigan pottery do not appear. I believe the northeastern Iowa sites of the Effigy Mound Aspect were occupied before

*Comparative
Analysis
of Mound,
Rockshelter,
and Village
Sites*

strong Mississippian influence appeared in the region. This absence of the more elaborate single-cord decorated pottery is probably significant if it is a real absence and not a function of limited excavation. Pottery of this type was noted in small quantities in Jackson County. I have also noted sherds of these types in collections from Floyd County situated to the west of Allamakee and Winnesheik Counties. Present data do not suggest a reason for this. Assuming a peripheral persistence of the effigy mound complex in Iowa into quite late times, an Oneota migration into the area may help to explain the absence. If Oneota appeared sufficiently early, it might have cut off the local effigy mound development before the Woodland people had begun to produce the collared and noded pottery types in the extreme northeastern counties of Allamakee and Clayton. Other Woodland peoples to the south and west would have continued with the trends of Woodland ceramic development. This hypothesis would be based on an assumption of contemporaneity of Oneota with the Aztalan Site in Wisconsin. Such a possibility has been suggested by Rowe (1956, p. 83) in attempting to place the Effigy Mound Aspect chronologically. He cites Maxwell's (1950, p. 442) discoveries at Diamond Bluff in support of contemporaneity of Effigy Mound and the Upper Mississippi Phase.

Other Woodland Village Complexes

Another site at which a single complex was represented was the Nelson Dewey Site at Cassville, Wis. Here Spring Hollow Cordmarked pottery was found in association with Levensen Stamped. A number of Spring Hollow Incised sherds were found on the surface. Other types recovered include a thick, plain-surfaced type with reed punctates as decoration; thick, cordmarked sherds bearing some resemblance to Havana Cordmarked; and a variation of Spring Hollow Incised decorated with fingernail punc-

tates over a cordmarked exterior surface. The bulk of the pottery at Nelson Dewey falls within the Spring Hollow Cordmarked type. Projectile points were rare. The two types noted in the excavations were contracting-stemmed and expanding-stemmed. The significant association at this site was that of Levensen Stamped pottery with Spring Hollow Cordmarked. As Levensen Stamped was found in association with burials in Allamakee Focus mounds, the limited data from the Nelson Dewey excavation assumed some importance by providing information linking mounds of the Allamakee Focus with a village complex.

The assemblage of pottery types and projectile points at Nelson Dewey probably typifies a local variation of the Weaver Focus. Spring Hollow Plain and Cordmarked pottery types resemble Weaver Plain and Cordmarked. The mounds in which Levensen Stamped pottery was found also resemble the simple burial complex of Weaver.

At the Loseke Creek sites in Nebraska, Kivett (1952, p. 55) found pottery resembling Spring Hollow Cordmarked. It was associated with single-cord decorated sherds. Chipped stone material from both Kivett's excavations and the Nelson Dewey Site is meager in quantity. Comparisons of stone artifacts therefore were unsatisfactory. At the Scalp Creek Site, where pottery resembling Spring Hollow Cordmarked was also found, Hurt (1952, fig. XXVI, 7, 8, 15) illustrates projectile points resembling the small expanding-stemmed and contracting-stemmed types found at Nelson Dewey.

Unfortunately, none of the more careful excavations illuminate the relationship of Spring Hollow Cordmarked and Levensen Stamped to the stamped and punctated Hopewellian pottery found in the Levensen Rock Shelter. The range of pottery types in the Levensen shelter suggests a long series of occupations. To define whole complexes in such a Jackson County sequence, it would be necessary to excavate additional sites. How-

ever, certain general statements can be made about the probable sequence of occupation of this shelter by selecting pottery types and certain artifact types typical of various horizons in other parts of the Middle West.

The case for a long sequence in the Levensen shelter rests primarily on the ceramic evidence. A number of pottery types from this site are identical to types presented by Griffin as characteristic of Illinois Woodland. They are listed below, together with a statement of their relative chronological positions as given by Griffin (1952b, pp. 98-122):

1. Black Sand Incised (Early Woodland)
2. Neteler Stamped (Early Middle Woodland)
3. Naples Stamped (Early and Middle Hopewell)
4. Havana Zoned (Early and Middle Hopewell)
5. Steuben Punctated (Late Hopewell)
6. Havana Cordmarked (throughout the Middle Woodland)

These types indicate occupation of the Levensen shelter beginning in the late phases of the Early Woodland and persisting through Early and Middle Hopewell, as the latter divisions were recently presented for central Illinois (Wray, 1952, pp. 153-155). Large quantities of Levensen Punctated and Levensen Stamped Pottery were found in this shelter.

Probable relationship of these types to Spring Hollow Plain, Spring Hollow Cordmarked, and Naples Stamped has been suggested earlier in connection with pottery seriation. Both the seriation and association of the types at Nelson Dewey suggest that this pottery was essentially contemporaneous with Spring Hollow Cordmarked and Spring Hollow Plain and that its origins lay in the Naples Stamped decorative treatment. In the Levensen shelter, its appearance along with relatively large quantities of Spring Hollow Plain and Cordmarked sherds, may

represent a late Hopewellian occupation of some magnitude. Madison Cord-Imprinted pottery and small triangular and small expanding-stemmed projectile points indicate a Minott's Focus occupation.

The stone artifacts at Levensen could not be assigned to particular horizons with confidence. Thus, it was not certain whether the larger contracting-stemmed points could be attributed to the period represented by the Spring Hollow pottery or whether they might have been equally characteristic of the complex including the Hopewellian ceramics. Large corner-notched and expanding-stemmed points have been reported from Hopewellian sites of the Illinois River Valley (Fowler, 1952, pp. 154-156), and may have belonged to the northeastern Iowa Hopewellian as well.

The lanceolate points from the Levensen shelter bear some resemblance to Early Man points in form, but they lack certain characteristics generally noted in early material such as overall care in flaking, thinness of cross section, and grinding around the basal areas. Lanceolate forms similar to the Levensen specimens were reported by Fowler (1952, p. 156), who commented on their general resemblance to types of the Red Ocher complex. In the absence of any Early Woodland material other than the few Black Sand sherds, the Levensen examples are assigned to the shelter's Hopewellian occupation. A similar conclusion was reached concerning the side-notched points of the site, although they could have come from an earlier complex including the Black Sand pottery. The round-based knives from Levensen were nondistinctive. This type of knife was found in northeastern Iowa sites of several time levels, ranging from what were probably Archaic campsites through sites of the Effigy Mound Aspect. Similarly, no conclusion was reached as to the provenience of drill points and large crude scrapers. Core choppers of the variety found in the Levensen shelter have been considered

*Comparative
Analysis
of Mound,
Rockshelter,
and Village
Sites*

characteristic of the Minott's and related sites in the discussions preceding this.

Equally, bone tools were of uncertain provenience. A very limited number of bone tools were found in the Minott's shelter and related sites, and the few recovered are of a generalized nature. Bone-splinter awls have been found in Archaic, Hopewellian, and later sites (Webb, 1946, p. 282; Fowler, 1952, p. 162, pl. I, A). Split bone wals from the Clear Lake Site resemble specimens from the Levsen shelter (Fowler, 1952, p. 162, pl. I, d, g). Other bone tools from the Levsen shelter similar to finds at Clear Lake were antler drifts, hollow deer phalanges, and flat bone needles. The antler drift is common in Archaic sites (Webb, 1946, pp. 308-309; Logan, 1952a, pp. 55-58). Hollowed deer phalanges have been illustrated from several sites on the Late Woodland or early Mississippian horizons (MacNeish, 1952, fig. 18r-s; Maxwell, 1951, p. 214, pl. XXXIV, 6; Chapman, 1952, p. 144, fig. 62, O). The flat bone needle of the Levsen shelter is nearly identical to a specimen illustrated from the Clear Lake Site (Fowler, 1952, p. 162). Most of the bone tools from the Levsen shelter are of forms with a temporal range from Archaic through Middle Woodland or later. Antler-tip projectile points, for example, have been reported from sites containing complexes as widely separated in time as Archaic and Upper Mississippi (DeJarnette, 1952, p. 274; Chapman, 1952, p. 148).

A grooved and incised antler fragment perforated at one end was found in the Levsen shelter. This was not necessarily connected with the Hopewellian occupation. The elk cannon bone scraper or flesher found at Levsen had its closest analogue in similar tools from Plains sites (Lehmer, 1954, p. 68). It has been said to appear first in Hopewellian sites (James B. Griffin, personal communication). It appears to have survived into the historic period in the Upper Mississippi Valley (Lyford, 1953, pp.

98-99). Provenience of the specimen within the Levsen shelter was probably the Hopewellian occupation.

Shell objects were rare in the Levsen shelter. Five shell spoon fragments were found. These are widespread in Hopewell (James B. Griffin, personal communication). They are also characteristic of Maples Mills (Cole and Deuel, 1937, pp. 194-197). In Wisconsin, similar artifacts have been reported from Upper Mississippi sites. The examples from the Jackson County shelters are markedly different in form from Upper Mississippi specimens. Typologically they seem to be of clear Woodland origin, and probably were of late Hopewellian derivation. Other shell objects from Levsen could not be assigned to any particular complex.

Ground and pecked stone tools were not common in the Levsen shelter. Many were nondistinctive varieties. An anvilstone, smoothed pebble, sandstone tablet with notched edges, ground hematite fragment, and polished stones were included. None could be assigned to a specific occupation of the shelter. A broken rectangular two-hole gorget was found. Such specimens have been found in Middle and Late Woodland mounds (Wray, 1952, pp. 155-156; Starr, 1897, p. 69). A small copper awl was the only metal object found in the Levsen shelter. It is probably from the late horizon in the cave (the Minott's Focus), although copper awls have been reported from Hopewellian mounds (Cole and Deuel, 1937, pl. XXXI). Another item believed to represent either the Minott's Focus or the complex represented by Spring Hollow Plain and Spring Hollow Cordmarked pottery is a fragment of a pottery pipe, probably of elbow form. An object of unknown function and origin is a small lump of fired pottery clay on which grass-stem punctates had been placed.

The situation at the Levsen shelter was paralleled by that at the Mouse Hollow shelter. On the basis of ceramic remains, it

appears that the Mouse Hollow Rock Shelter had been occupied from the latter part of the Early Woodland through the Late Woodland. Three sherds similar to Black Sand Incised suggested a brief Early Woodland occupation. Sherds of Spring Hollow Incised were also noted, but probably derive from a later occupation in the shelter. Hopewellian remains were poorly represented. One sherd of possible Middle Woodland origin is plain with upper rim bosses. The remainder of the pottery consists of Spring Hollow Plain and Spring Hollow Cordmarked, Madison Cord-Imprinted, and sherds closely connected to Maples Mills pottery of Illinois and the Lake Michigan pottery of Aztalan (fig. 53a, c-m). The latter has square orifices, added rim strips or "collars," and globular bodies. One other pottery type noted had fine shell tempering, a high polish, and wide-line incising producing the decoration (fig. 52g-i). These sherds were identified as Ramey Incised, a Cahokia Old Village type found in Middle Mississippi sites (Griffin, 1949, p. 51).

Among the chipped-stone items, projectile points are very common, particularly the small triangular forms and small triangular points with side notches. Another type probably related to these, or at least appearing on the same time level, is the small corner-notched point characteristic of Maples Mills of Illinois (Cole and Deuel, 1937, p. 55). The array of larger points at Mouse Hollow varies almost as widely as that at Levens. Ribbon flake knives, said to be characteristic of Illinois Hopewellian sites, were noted also (Cole and Deuel, 1937, p. 222). Oval and planoconvex scrapers appeared as well. A chipped-stone celt and a chipped-stone adze were found. These have been noted in an Archaic context in Missouri (Logan, 1952, pl. XV, 42). Fewer bone tool types were represented in the Mouse Hollow shelter. With the exception of an antler drift, they were of types found in the Minott's Focus. The complete clamshell

spoon found in this shelter probably belongs to the complex including single-cord decorated pottery since it resembled specimens from Maples Mills sites (cf. Cole and Deuel, 1937, fig. 18 and 37 with fig. 46j).

A few ground-stone tool types were typical of Middle Woodland sites. These include an anvilstone, hammerstone, three-quarter grooved ax, stone ball fragment, and a boatstone. Boatstones of the type found in Mouse Hollow are listed from the Clear Lake Site in Illinois (Fowler, 1952, pp. 163-164). Fragments of two pottery pipes, probably of elbow form, and a fragment of an incised sandstone tablet were found as well.

Mouse Hollow Rock Shelter appears to have been occupied most heavily in the late Middle Woodland and Late Woodland, and it is likely that most of the objects recovered can be considered characteristic of the Minott's Focus in particular. The Ramey Incised potsherds were a type heretofore unknown in northeastern Iowa and are significant in that they indicate contacts of the local population with peoples of Middle Mississippi culture.

In the small collections from other Jackson County sites, several typological similarities to Illinois materials are sufficiently marked to warrant inference of comparable time levels. The Jeffrey Edwards Creek Rock Shelter contained Spring Hollow Incised pottery, large side-notched projectile points, and large contracting-stemmed points. Other material from the site includes sherds of Lane Farm Cord-Imprinted pottery. This was one of two occurrences of the type outside of Allamakee and Clayton Counties, and Crawford and Grant Counties in Wisconsin. These artifact types suggest a single late Middle Woodland occupation. The Boling Pasture Site contained sherds classed as Morton Incised and Havana Cordmarked. The small rock shelter in the southeast quarter of Section 17, Township 85 North, Range 2 East contained a lanceolate projectile point almost identical with specimens

from Graham Cave in Montgomery County, Mo. (Logan, 1952a, p. 27).

Less may be said with certainty about the Sixteen and Waterville Rock shelters and the Elephant Site. In this part of northeastern Iowa, the Illinois artifact resemblances are not as marked as those of the Jackson County sites. A clear outline of the ceramic sequence in Allamakee and Clayton Counties must await excavation in a number of sites employing modern field methods. Madison Cord-Imprinted pottery indicates an Effigy Mound Aspect occupation. Spring Hollow Plain and Spring Hollow Cord-marked pottery were noted along with other types with Weaver affinities. A number of sherds from these sites resemble Hummel Stamped (fig. 50c-d), a late Hopewellian type of Illinois (Griffin, 1952b, pp. 110-111). Plain and dentate rockered sherds were common. One sherd in the Waterville Rock Shelter bears a Hopewell-like zoned decoration consisting of a dentate-filled zone outlined with a continuous dentate-stamped line.

Projectile point types in all three sites do not differ from those of Linn County. In the Waterville shelter the only bone tools are awls made from bone splinters and antler flakers. The awls and antler flakers are types of artifacts noted in the Minott's Focus. The Waterville shelter also contained the stem of a pottery elbow pipe. In all three sites Orr Focus Oneota pottery was found, and at the Elephant Site its position is indicated as later than that of the Woodland pottery types. Mill Creek pottery was found in both the Waterville and Sixteen shelters. At the Sixteen shelter, remains almost identical to those from the Waterville shelter were recovered. The Elephant deposits contained Marion Thick pottery which can be assigned to the Early Woodland on the basis of ceramic sequences elsewhere (Griffin, 1952b, pp. 97-98; Ritchie and MacNeish, 1949, p. 100). The other pottery types could not be assigned to a particular complex with cer-

tainty, with the exception of Lane Farm Stamped, Lane Farm Cord-Imprinted, and Madison Cord-Imprinted. Sherds bearing fingernail punctates over a cordmarked surface probably are variations of Spring Hollow Incised and therefore belong to the complex represented at the Nelson Dewey Site along with Spring Hollow Plain and Spring Hollow Cordmarked.

In spite of imperfect excavation data, the materials from northeastern Iowa village sites give evidence of a sequence of Woodland occupations through comparisons with data outside the area. The list below summarizes the traits of these partial complexes inferred in the preceding discussion:

Early Woodland

1. Marion Thick pottery.
2. Black Sand Incised pottery
3. Morton Incised pottery
4. Neteler Stamped (may be transitional to Middle Woodland ceramic styles)

Middle Woodland (Hopewell)

1. Naples Stamped pottery
2. Havana Cordmarked pottery
3. Havana Zoned pottery
4. Steuben Punctated pottery
5. Large corner-notched and expanding-stemmed points
6. Lanceolate points
7. Bone splinter awls
8. Antler drifts
9. Flat bone needles
10. Elk cannon-bone scraper or flesher
11. Ribbon flake knives
12. Clamshell spoons

Late Middle Woodland

1. Spring Hollow Cordmarked pottery
2. Spring Hollow Plain pottery
3. Spring Hollow Incised pottery
4. Levsen Stamped pottery
5. Levsen Punctated pottery
6. Small corner-notched, expanding-stemmed, and contracting-stemmed points
7. Clamshell spoons

8. Rectangular, 2-hole gorget
9. Pottery elbow pipe

Minott's Focus (Late Woodland)

1. Madison Cord-Imprinted pottery
2. Minott's Cord-Imprinted pottery
3. Small corner-notched, expanding-stemmed, and contracting-stemmed points
4. Small triangular and triangular side-notched points
5. Core choppers
6. Clamshell spoons
7. Anvilstones
8. Copper awl
9. Pottery elbow pipe
10. Bone splinter awls
11. Antler flaker

Middle Mississippi

1. Ramey Incised pottery

Upper Mississippi (Orr Focus Oneota)

1. Orr Focus pottery
2. Small triangular projectile points
3. Oneota burials at Elephant
4. Intrusive Oneota burials in Allamakee County mounds

The above list includes only those items which can safely be assigned to complexes from the series of sites on which excavation data were unsatisfactory. Early Woodland remains evidently were distributed over the entire area of northeastern Iowa, but the information was best for Allamakee and Clayton Counties. The Middle Woodland was most completely represented in Jackson County, where Morton Incised and Neteler Stamped pottery indicated existence of an early phase within this chronological division. Similarly, sites of the Middle Hopewell period are not as common north of Jackson County.

MOUND-VILLAGE CORRELATIONS AND CHRONOLOGY

The partial village complexes outlined were compared with the mound complexes and

correlations noted. Within the village material scattered Early Woodland remains, such as the pottery at the Elephant Site, could be correlated with the Ryan Focus burial mounds. The very fragmentary Hopewell trait list could be considered to represent the village complex of people who built McGregor Focus mounds and the related Hopewellian conical mounds of Jackson County.

The material from the Nelson Dewey Site was correlated with the Allamakee Focus mounds on the basis of pottery similarities between the ceramic remains of Nelson Dewey and vessels found in Harvey's Island Mound 1, Paint Rock Mound 1, the "Valley" Mound of the Harpers Ferry group, and French Town Mound 8. The details of this relationship must await further excavations in both village sites and burial mounds. The Minott's Focus could not be correlated with a burial complex in Linn and Jackson Counties due to a lack of mound excavations in those areas. However, sites related to the Minott's Focus in Allamakee and Clayton Counties, such as the Highway Thirteen Rock Shelter, evidently contained the remains of peoples who built effigy mounds, for Madison Cord-Imprinted pottery and stone tools comparable to those of the Highway Thirteen shelter and the Minott's Focus sites were found in the Brazell's Island Bear Effigy, the Lyle Bentley Conical, and the Lane Farm mounds. Similar artifacts have been reported from Wisconsin effigy mounds (Rowe, 1956; Wittry and Bruder, 1955, pp. 3-12; McKern, 1928; McKern, 1930).

Throughout the foregoing sections of this paper, assumptions about the chronological arrangement of these various entities have been made. A presentation of the evidence for chronological arrangement is necessary. In the comparison made between the Iowa Hopewellian mounds and similar burial complexes in surrounding areas, it was noted that the McGregor Focus was related

*Comparative
Analysis
of Mound,
Rockshelter,
and Village
Sites*

about equally to the Trempealeau and Nickerson Foci. In a trait for trait comparison, the McGregor Focus is more nearly like Nickerson because it contained a heterogeneous set of mound construction features, whereas the Trempealeau mounds form a closely related unit in terms of both construction and grave goods.

The mounds of the McGregor Focus exhibited some similarities to the simpler mounds of the Allamakee Focus. The Allamakee Focus mounds are considerably more closely related to the Boone Focus, Ralls Focus, and Kansas City Hopewellian mounds of Missouri. They were related to the Illinois Weaver Focus and to the Lane Farm and effigy mounds in Iowa. McGregor Focus mounds were not as closely related to such elaborate Hopewellian classes as the Ogden-Fettie Focus and the Davenport Hopewell material. Therefore it appears that the Allamakee Focus was intermediate between the McGregor Focus and the Lane Farm and effigy mounds. Since these three entities were located in such a restricted area geographically, a chronological sequence was implied. The sequence ran as follows in probable order of temporal priority: (1) Ryan Focus (Early Woodland); (2) McGregor Focus (Middle Woodland-late Middle Hopewell); (3) Allamakee Focus (late Middle Woodland); and (4) the Lane Farm complex and effigy mounds (late Middle Woodland and Late Woodland). Although they have not been included in any of the above groups, the simple conical mounds probably belong to the Late Woodland.

The Chronology as outlined is strengthened by certain recent radiocarbon dates: Sny-Magill Mound 43 dated 2,500 years ago, with a standard error of 250 years (sample M-305)*; Mound 33 in Effigy Mounds National Monument dated 1,750

years ago, with a standard error of 300 years (sample M-310; Crane, 1956, p. 667); and the Kolterman Mound 18, a bird effigy, dated 1,180 years ago, with a standard error of 250 years (sample M-398; Wittry, 1956, p. 33).

No dates are available on mounds of the Allamakee Focus. This burial complex probably overlaps the time spans of the McGregor Focus and the Lane Farm and effigy complexes. From this assumption it could be estimated that the Allamakee Focus would have existed between A.D. 200 to 300 and A.D. 500 to 700. This would mean a span of 500 years at the maximum to 200 years at the minimum, with a mean span of 300 years.

The Hopewellian McGregor Focus may have persisted later than the time allowed it in the chart (fig. 83). A date obtained from charcoal recovered in Effigy Mounds National Monument Mound 55 was 900 years ago, with a standard error of 300 years (Crane, 1956, p. 666, sample M-40). Although this date should be viewed with suspicion, since it does not conform to either the Mound 33 date or to dates of Illinois late Hopewellian sites, it is presented here because it has been obtained on a mound considered part of the northeastern Iowa Hopewellian developments. It seems unlikely that such a date could be correct. This date would place Hopewellian burial practices around A.D. 1000 and would be a full 300 years after the construction of the Kolterman effigy mound in Wisconsin.

Another radiocarbon date from Effigy Mounds National Monument was obtained on Mound 30, a bear effigy. This date was 930 years ago, with a standard error of 300 years (*ibid.*; sample M-41). Acceptance of this date implies a minimum period of 300 years for the construction of effigy mounds in the Upper Mississippi River Valley and in Wisconsin. In view of the large numbers of effigies, linears, and conicals ascribed to the Effigy Mound Aspect, it appears that a

slightly longer span of time was involved. The chronological chart in figure 83 allows roughly 600 years for this complex.

The chronological chart (fig. 83) indicates a time gap between the period proposed for the Ryan Focus and that for the McGregor Focus. One interesting phenomenon of the northeastern Iowa area was the absence of really elaborate Hopewellian burial mounds or village debris north of Jackson County. Such remains were also absent in Linn County. Hopewellian remains in Allamakee, Clayton, and Linn Counties are characteristic of the latter part of the Middle Hopewellian or of the late Hopewellian as it is known in Illinois. The radiocarbon date on Mound 33 at Effigy Mounds National Monument bears out this assumption. As a result, the question arises as to whether or not there was a hiatus between the Early Woodland, represented by the Ryan Focus and scattered Early Woodland pottery in village sites, and the sites of the latter half of the Middle Woodland. A hiatus does not seem logical in view of the fact that cultural continuity can usually be demonstrated in any local area.

The alternate explanation is that the population of the northern part of northeastern Iowa continued along older lines of cultural development, while the more southerly counties, being closer to central Illinois, accepted newer ideas and underwent changes producing the typical Hopewellian remains evident in the Davenport and Jackson County areas. This proposal assumes that the extreme northern part of the area partook of Hopewellian influences rather late. It also assumes that the people of the northern counties of Iowa were selective in the traits or complexes which they accepted into their own cultural schemes. Such a situation is suggested in the flourishing of incised-over-cordmarked pottery decoration in what appears to have been a late Middle Woodland and Late Woodland context. This style is early in Illinois, yet it appears

in southwestern Wisconsin, northeastern Iowa, and southeastern Minnesota in association with other pottery types and burial practices resembling the Weaver Focus.

From the Fox Lake site, Wilford (1955, p. 133) has listed pottery similar to Spring Hollow Incised. He assigns it to the Southern Minnesota Aspect of the Middle Woodland. Projectile points from the Fox Lake site resemble those of the later complexes in northeastern Iowa. They include triangular and stemmed forms. A rock shelter near the mouth of the St. Croix River in Minnesota also contained pottery related to Spring Hollow Incised (Johnson and Taylor, 1956, p. 25, pl. D). The mounds of Wilford's (ibid.) Southern Minnesota Aspect suggest a relationship with the Allamakee Focus. Evidence from the Lee Mill Cave (Johnson and Taylor, 1956, p. 25) suggests a very late position for pottery of the Spring Hollow Incised type. Wilford assigns this material to the Lake Michigan Phase and evidently considers it representative of southern Minnesota effigy mounds. Wilford (ibid.) also reports plain-rockered and dentate-rockered sherds in association with single-cord decorated pottery in the Root River Valley. This suggests similarity to the Lane Farm pottery.

The evidence indicates a series of groups progressively less like Ogden-Fettie and Davenport from south to north up the Mississippi River. I believe the second explanation, involving persistence of older habits in the north, is most compatible with the evidence. This would include borrowing of only certain traits which are seen in more elaborate form farther south and east. If the northern and western frontiers of the Illinois Valley and Davenport developments persisted in older ways, the problem of the number of sites arises. Many more mound groups assignable to this level would be expected, and Marion Thick and allied pottery types might be expected in larger quantities in the local village sites.

*Comparative
Analysis
of Mound,
Rockshelter,
and Village
Sites*

5 CULTURAL SPECULATIONS AND CONCLUSIONS

The previous sections have dealt with the material content of the northeastern Iowa Woodland occupations and with comparisons suggesting culture complexes and their probable affiliations. To fully understand Woodland cultures in this region, a familiarity with some details of the environmental setting is necessary. In the Introduction a brief description of the area's geography was set forth. In this section, those features which may have impinged upon the cultural *milieu* will be presented as a preface to speculation about the nature of peoples on the Woodland horizons.

Of all the physiographic phenomena in this region, the Mississippi River is the dominant factor. In historic times it wielded strong influences on the flow of travel and trade, as did the Wisconsin River which flows into the Mississippi south of Prairie du Chien. This was the route over which Marquette and Joliet traveled in their Mississippi River explorations. In the years of French, English, and American fur trading, this route was a most important means of transportation and communication. The two waterways probably played a part in pre-historic movements of culture elements and peoples as well. In Allamakee and Clayton Counties in the extreme north, and Jackson County further south, the Mississippi River probably was vital to primitive economies, particularly those parts of the three counties abutting upon the Mississippi. If the

character of the land in early historic times was the same during prehistoric times, it is possible to draw a picture of a modest but adequate subsistence level for peoples along the great stream.

Historically, the environment has been characterized by high bluffs and deep valleys along the Mississippi. For the most part, the bottomlands and terraces along the stream were narrow, opening into wide terraces only at the mouths of major streams. This is true today, except that flooding due to the construction of locks and dams has reduced the area of dry land in the bottom of the Mississippi River gorge. The floral population today includes all of the plants typical of the oak-hickory forest. Among the lesser plants are many known to have been utilized by Indians of the historic period for food, medicines, and the production of cordage, textiles and basketry. The common trees of the northeastern Iowa forests include several species of oak, hickory, maple, basswood, aspen, cedar, elm, black cherry, and ironwood. To judge from the land's appearance since the advent of Europeans, the pre-historic forest was interspersed with prairie uplands. Prior to construction of locks and dams, the flood plain of the Mississippi held many marshes and broad stretches of rich grass according to the accounts of older citizens of McGregor and Prairie du Chien. Wild rice flourished in the marshy areas.

The Upper Iowa River Valley in northern Allamakee County did not differ significantly from that of the Mississippi. The valley of the Upper Iowa is wide, with flat bottomlands, spacious second benches, and high bluffs lining the river's gorge. Deciduous forest covers the bluffs and parts of the terraces. The eastern fringe of Jackson County along the Mississippi resembles eastern Allamakee and Clayton Counties, with deep valleys, prairie openings, deciduous forests, and occasional broad river terraces. Linn County, which is inland from the Mississippi, differs slightly in that the major streams are smaller in size, and there originally appears to have been a greater proportion of prairie to timber. A greater proportion is also apparent in the western townships of Jackson County.

Discussion of the relationship of prehistoric people to their environment necessitates inferences as to the nature of the surroundings at particular times in the past. The discussion depends on the degree of confidence which can be placed in inferences about the prehistoric natural setting. In the case of northeastern Iowa, I have assumed a habitat much like that in the early historic period. There is no strong evidence of similarity or dissimilarity between the prehistoric and historic environments, but there are indications that they were essentially alike.

The soil of northeastern Iowa is a type formed under deciduous forest conditions. According to the Yearbook of Agriculture, *Soils and Men*, the soil of northeastern Iowa along the Mississippi is of the Gray-Brown Podzolic type (1938, p. 1034). The process by which these soils are formed is presented as follows:

Podzolization is dominant in areas of high humidity and forest vegetation and is one of the most important processes in the formation and modification of the Pedalfers soils. The process comprises two phases.

One of these is the accumulation of a peaty mat of organic material on the surface and removal of clays and iron compounds from an upper to a lower layer, with consequent whitening of the soil layer immediately beneath the surface organic matter (Byers, et al., 1938, p. 972).

The same paper stated that podzolization is effective under both coniferous and hardwood forests in temperate and tropical climates. In the fill of several mounds examined, the characteristic strata of podzolic soils were observed. This indicated that for at least part of the time which had elapsed between construction of the mounds and the present day, an environment of deciduous and conifer forest existed. This would not mean that such vegetation was necessarily in existence at the time the mounds were built, and at present it is not known how long a period is required to produce this soil profile. It may be assumed that the process has proceeded for at least 400 years, since forests of the deciduous type existed in northeastern Iowa in early historic times.

In connection with this problem the mound examinations mentioned above are important. During August 1956, Wayne Scholtes, a soils specialist of Iowa State College and I made soil borings in six mounds in Allamakee County. Although the results of these tests are not as important as they would have been had the burial complexes and ages of the mounds been known, they are interesting in the implications they offer as to climate and floral conditions. In addition to the soil samples taken, Scholtes was given the opportunity to study both black-and-white photographs and color transparencies taken by me while directing the excavation of Mound 33 at Effigy Mounds National Monument. His observations of these studies follow:

In reference to your letter of September 23, paragraph 4, I would say that the forest

soil at the time of mound construction was well developed and reflected a forest environment for quite a period previous to mound construction.

Evidence of this is that the buried forest soil under the mound is well developed and has the same morphology of the surrounding soils. Also, the soils developed on top of the mound in McCormick's area lack the well developed morphological characteristics of the surrounding soil. From this we can infer that the time period since mound building under forest conditions has not been nearly so long as the period under the same environment prior to mound construction. The reason the surrounding soils have much stronger development than the soils on the mounds themselves is not a difference in environment, but simply a longer period of time of weathering under these conditions. My interest, of course, is how far have these soils progressed in development in a given period of time on top of the mound? The surrounding soils have been weathering much longer, but for exactly how long? Morphological evidence points to a forest environment prior to, during, and subsequent to mound construction. On all morphological evidence present in the soils, I would rule out grass as the biological factor in the development of these soils (Wayne Scholtes, personal communication).

The site Scholtes referred to in the first paragraph quoted above is Mound 33. His remarks indicate that similar soil conditions were in existence at the time the mound was built to those existing afterward. This, in turn, implies that a forest environment comparable to the present environment was in existence as early as A.D. 200, or thereabout, judging from the radiocarbon date for Mound 33.

Quimby (1954, p. 329) expresses the opinion that the natural areas of North America at the time of European and Indian contact would have been in existence since

before the beginning of the Christian era. This conclusion was based on climatological data from the end of the Wisconsin glaciation to the present. If this were the case, it is probable that, barring the possibility of a local climatic shift, the climate and natural surroundings of all Woodland groups considered here would have been much like those of historic times.

It is known from the split and burned bone refuse of the rock shelters that the local fauna did not differ from that of today, except, perhaps, in population size. The Mississippi River would have furnished an abundance of fish and fresh-water mussels. In the Highway Thirteen Rock Shelter, for example, vast numbers of fish scales were found and fish bones also were common. Deposits of mussel shells have been reported at the Fish Farm Mound Group, on the terrace at Lansing, Iowa, and on the Prairie du Chien Terrace. The clamshell deposit on the Prairie du Chien Terrace contained potsherds dating from the Middle Woodland. The mammal bones found in the rock shelters were, for the most part, derived from deer, although smaller mammals were represented, including small rodents and carnivores of unidentified species. Bear teeth found in burial mounds were also in evidence. An elk bone tool from the Levsen Rock Shelter indicates presence of the elk. In Allamakee and Clayton County sites containing material of the Woodland Pattern, bison bones were absent. Bison bones have been reported from Oneota sites in the area, but the only Woodland site from which remains of the bison were recovered was the Levsen Rock Shelter. Bird bones of unknown species were also noted in rock shelter collections.

There is evidence, then, for a forest environment with ample numbers of food animals and plants. The distribution of large sites within this habitat is overwhelmingly along the Mississippi River. Beginning at the Minnesota and Iowa boundary and pro-

gressing down river, there are relatively large village sites on the terraces at New Albin, Lansing, Harpers Ferry, Prairie du Chien, Buck Creek, Guttenberg, and Cassville. Terrace data were not available for Dubuque and Jackson Counties. There was ample space on these terraces for fairly large villages or camps. The largest of these terraces was that at Prairie du Chien, which measured 7½ miles by almost 2 miles, or over 5,000 acres in area. The areas of other terraces are as follows: New Albin: 480 acres; Harpers Ferry: 1,120 acres; Buck Creek: 120 acres; Guttenberg: 360 acres. These acreages are based on measurements of the terraces in miles, as given in Martin (1916, pp. 151-152). The size of the Cassville terrace was not available, but an estimate of its size would be about 480 acres.

In addition, the islands between Prairie du Chien and McGregor are known to show occupations dating from Middle Woodland times, at least. In the valley of the Upper Iowa River, which flows into the Mississippi River north of Lansing, sites were distributed on all the higher benches from a point near the mouth of Bear Creek, some 12 miles upstream, to the mouth of the Upper Iowa. Rock shelter camps are scattered over the whole of Allamakee and Clayton Counties wherever the steep-sided, narrow valleys offer such features.

Small campsites are found in the wider valleys wherever a sufficiently large and high terrace is available. Where excavations provide sufficient evidence, as at the Elephant Site and on the terrace at Prairie du Chien, the large terrace sites appear to have been occupied from Early Woodland times. The rock shelters, on the other hand, most frequently contain evidence of Middle and Late Woodland usage. Oneota remains are confined to a restricted area consisting of the Upper Iowa River Valley and for the most part adjacent areas. Some Oneota remains have been noted in the rock shelters as at Waterville, Sixteen, and Spike Hollow

(Logan, 1952b). What few definite traces of Archaic occupation are known occur on the larger river terraces, as at Prairie du Chien, Lansing, and the Osceola Site at Potosi, Wis., (Ritzenthaler and Scholz, 1946, pp. 53-70). The scattered Early Man points noted were all found on the uplands near McGregor, Waukon, and Bluffton. One point, which conforms to the Folsom type, was found on the Prairie du Chien Terrace.

It is natural that the large sites would be located along the Mississippi River. There was ample space for large camps or villages on the river terraces. The river offered a wider variety of food sources in the fish and shellfish of the river; large and small mammals along the river and in the uplands on either side of the stream; waterfowl of the Mississippi flyway, and wild rice and other edible plants in and along the river and in the upland areas. This locality could have supported a very large hunting and gathering population. With the addition of an agricultural supplement, the area should have been almost ideal for primitive peoples.

The rock shelter remains indicate that hunting played a large part in the economy of Middle and Late Woodland people in this area. There is no direct evidence for agriculture, although it is assumed to have existed on the basis of its presence elsewhere in the Middle West during the Middle and Late Woodland, and on the supposition that some stable supplement to hunting would have been necessary to permit sufficient energy to be devoted to mound construction. This inference appears most valid for the period in which Hopewellian mounds were built. However, the burial mounds of northeastern Iowa were neither as complex nor as large as those of the Illinois River Valley and the Ohio area.

Likewise, specialized grave offerings were rare. Such grave goods, if present, would have implied a modicum of leisure time for their manufacture. For these reasons, it is believed that a hunting group, living in a

reasonably well-stocked locality, could have been responsible for the mounds, and that an agricultural economy need not necessarily have been involved. The effigy mounds in particular are lacking in features which would indicate a large amount of leisure time. The available evidence from the effigy mounds does not point to any highly developed religious form such as might accompany an agricultural economy. The only characteristic of the effigy mounds which could be considered elaborate in any sense was that of exterior form. No special objects were made for burial with the dead, and, since the mounds are not of huge proportions, no great period of time would have been required for their construction. Hence, there would have been no long periods of labor required where a certain segment of the population would have to be fed from an extensive surplus.

Inference of agriculture among the builders of the northeastern Iowa mounds must rest solely on the evidence that at the time they were being built, cultivation of corn was widespread throughout the eastern area (with the possible exception of the Early Woodland periods where direct evidence is lacking). However, its presence in northeastern Iowa would not necessarily be assured if a wild substitute for corn as a cereal crop was available. Such a substitute may have existed in wild rice. The big river terrace sites might indicate dependence on wild rice if it is assumed that they were developed on these sites in order to be near the source of this plant food. However, the multifarious advantages of these river terraces as village sites are evident, and an equally logical argument can be advanced for location of villages on the larger terraces for agricultural reasons.

A sharp population rise might argue for an appearance of agriculture on the time horizon in which the population increase occurred, since one of the advantages of an economy based on horticulture is the oppor-

tunity to build up food surpluses, thereby permitting population growth. Population increases may be inferred through a sharp rise in the number of sites belonging to a given complex, coupled with larger sites and greater volume of remains within them.

Two significant population increases seem evident for the Woodland horizon in the northeastern Iowa sites. Comparing the volume of Early Woodland remains with those of the Middle and Late Woodland, a population increase is obvious. Where scattered Early Woodland remains were noted only at the Elephant Site, on the Prairie du Chien Terrace, and in Jackson County rock shelters, Middle and Late Woodland remains were found in greatly increased volume. Absence of complex Middle Hopewellian remains in Allamakee County in comparison to Jackson County was mentioned earlier, along with the suggestion that this reflects survival of older cultural forms north of central Illinois and the Davenport locale. Perhaps there was an economic reason for this absence of elaborate Hopewellian burials and village remains in the north. If corn were not yet sufficiently adapted to the shorter growing season of the north, it would be logical to find Woodland groups who borrowed certain traits or complexes from their agricultural neighbors, but whose life was still grounded in a hunting and collecting economy. They would have been forced to indulge in these new practices on a simpler scale due to economic necessity.

The second great population increase noted is in the Late Woodland, where population over the landscape appears to have been essentially the same as in the Middle Woodland, but much more dense. Where Middle Woodland remains are somewhat scattered in Allamakee and Clayton Counties, Late Woodland village remains and burial mounds were abundant. The rock shelters in Jackson and Linn Counties all contain some remains of the Late Woodland Minott's Focus and no doubt mound excava-

tions would show widespread distribution of Late Woodland burial sites as well.

A third population increase is evident in comparing Late Woodland to the upper Mississippi Oneota sites. While Oneota is not as extensive in distribution, population density within the areas of Oneota occupation probably was far greater than that of any previous northeastern Iowa group. The preponderance of Oneota remains were noted in the Upper Iowa River valley, where all major open terraces, particularly from the mouth of Bear Creek to New Albin, held Oneota village sites. Oneota artifacts were also noted in all the small rock shelters excavated in northern Allamakee County. These concentrations of Oneota remains in small areas with probable dense population suggest a more tight-knit social organization such as, perhaps, closely affiliated villages within a fairly strongly unified tribal group. Concentration of larger population in a smaller area, as exemplified in the Upper Mississippi sites, also suggests stronger dependence on agriculture. There is also direct evidence for Oneota agriculture. Orr found charred corn in Oneota cache pits in Upper Iowa Valley sites, and Henning (1957, p. 5) found charred corn in the Malone Rock Shelter II in association with Oneota remains.

It would be plausible to assume that by the end of the Early Woodland, hunting techniques and knowledge of the local habitat had developed fully, permitting efficient exploitation of the local environment within the limits of a hunting and collecting economy. Assuming this, a subsequent rise in number of sites and quantity of remains could be attributed to innovations connected with the food quest. Within the scope of present knowledge of eastern United States prehistory, the advent of maize horticulture would be the most logical explanation for such an increase. Some investigators argue for an appearance of agriculture in the Early Woodland in a limited area of the eastern

United States (Griffin, 1952c, pp. 357-358). This argument assumes a later appearance of plant cultivation in the north (*ibid.*). Such an interpretation seems perfectly compatible with the evidence from northeastern Iowa. Hence, the Early Woodland mounds of northeastern Iowa may be viewed as having been the products of a hunting and collecting group.

The evidence suggests a series of groups who were hunters and collectors, supplementing this economy with corn cultivation on a limited scale in the Middle and Late Woodland. This prompts speculations as to the character of their society.

Though numerous, the sites occupied are not large. The large river terraces are indicative of scattered camps. The rock shelters could have been occupied by very small groups only, and perhaps on a seasonal basis. It seems likely that northeastern Iowa may have held a moderate but dispersed population during these periods. Dispersal would argue against great dependence on agriculture, for such population distribution is more compatible with that of hunting groups. However, it has already been suggested that if agriculture were present, it may have been a secondary pursuit. In connection with this, Kroeber (1947, p. 147) has characterized eastern United States agriculture as "an auxiliary, in a sense a luxury." This characterization best fits the Woodland peoples as reflected in archeological remains. I doubt if it would have been characteristic of Mississippian peoples. In this same discussion, Kroeber estimates the average population of the eastern United States at about two families (roughly nine people) to the township in post-European contact times. This estimate, having been made for the overall eastern area, may be a little low for particular localities. Certainly the Upper Mississippi Valley could have supported more people, even without assuming an agricultural adjunct.

In dealing with archeological remains it

*Cultural
Speculations
and
Conclusions*

is axiomatic that the student possesses only a fragment of what may have existed long ago. Any inferences about nonmaterial aspects of the cultures under consideration must be made from this incomplete material base.

Through an examination of the material remains in the light of knowledge derived from other Middle Western sites, and from the characteristics of the environment, an economy has been inferred. The hypothetical partial dependence on agriculture may not have existed at all were wild rice available in sufficient quantity. However, by Late Woodland times, agriculture probably was present, and assuming that it was not the dominant economic pursuit, speculation about the social organization is possible in very generalized terms. Murdock (1949, pp. 205-206) outlined the relationship of economic and other aspects of culture to social organization. A review of his observations is pertinent here:

A relatively high status of women, which favors bilocal residence, is also conducive to matrilocal residence. But whereas it is woman's comparative equality with man in property and other rights that promotes bilocal residence, it is her superiority to him, especially in production and in the ownership of the principal instrument thereof — land — that favors matrilocal residence. A contributory factor is the absence of movable property in herds, slaves, or other valuables; in the hands of the men these might challenge the preeminence of landed property and introduce the destructive factor of polygyny. Relative peacefulness is another contributory factor, for war enhances the importance of men and often brings them slave wives or booty with which to purchase women. Still another significant precondition is a relatively low level of political integration, particularly one which, as in Melanesia and among the Pueblo Indians, does not extend beyond the local community.

Wider political authority brings to the holders, who are almost invariably men, increased power, property, and prestige, which often spell doom to the matrilocal principle.

Murdock (1949, p. 214) also suggests a connection between matrilocal residence and local endogamy in sedentary communities. This, and the conditions set forth in the above quotation, constitute the elements necessary for matrilocal residence. Patrilocality appears to have depended on the presence of converse conditions:

Patrilocality seems to be promoted by any change in culture or the conditions of life which significantly enhances the status, importance, and influence of men in relation to the opposite sex. Particularly influential is any modification in the basic economy whereby masculine activities in the sex division of labor come to yield the principal means of subsistence. . . . Even among hunters and gatherers the same result can be produced if a tribe moves into an area where game is plentiful and dependable, so that subsistence comes to depend primarily upon the chase rather than upon the collecting activities of the women. This possibly accounts for the prevalence of patrilocality in native Australia. It is significant that the Crow, who separated from the agricultural and matrilocal Hidatsa in late prehistoric times to adopt a buffalo-hunting economy on the Plains, have shifted to patrilocality although they still retain their matri-sibs (Murdock, 1949, p. 206).

Of the sets of conditions outlined by Murdock, those which seem to promote patrilocality best suit the probable conditions of life in the Iowa Woodland horizons. The question of the presence or absence of warfare as a pursuit resulting in male prestige cannot be resolved from the archeological evidence. Its general prevalence in the historic period, coupled with

formalized patterns of war, might be considered an argument for its comparative antiquity in the region.

Kroeber (1947, pp. 148-149) has commented on the concern of the historic tribes of the eastern United States with war. In his view, warfare among primitive peoples is not uncommon, and the tribes of the eastern United States, on the historic level at least, seem to have lived in a state of nearly perpetual strife. It is logical to assume that warfare would have been a concern of the north-eastern Iowa Woodland peoples, but its presence cannot be proved or disproved. However, Newcomb (1950, pp. 317-331) presents a convincing picture of intertribal pressures in the historic period as important in developing concern with war in the north-eastern area.

The northeastern Iowa Woodland religious life probably was simple. Even the Hopewellian mounds did not reflect an elaborate religious organization such as has been proposed in a recent discussion of Illinois Hopewell (Deuel, 1952, pp. 254-255, 258). The Hopewellian mounds of northeastern Iowa reflect a more elaborate ceremonial life than that indicated by the Late Woodland mounds, but they do not appear to reflect practices as elaborate as those proposed by Deuel.

In degree of elaboration, the Early Woodland mounds such as Sny-Magill Mound 43 and French Town Mound 10 appear to reflect more elaborate burial and religious activity than do the later mounds. The special mortuary items found in any of these mounds — Early Woodland or Hopewellian — need not have been the products of a special class of artisans. The character of the religion is a little difficult to visualize. For Illinois Hopewell and for Ohio Hopewell, a form of ancestor worship or sun worship has been suggested by Deuel (1952, p. 254). Whatever may have been the case for Illinois and Ohio Hopewell, I doubt if the religious form and philosophical life of northeastern

Iowa Woodland peoples would have been particularly complex. A belief in spirits and the efficacy of magic would be quite likely, and functionaries who sought to control the supernatural forces behind the overt phenomena of nature probably would have been in vogue, but not greatly advanced over the shamanistic type. That the rank and file of the populace would cooperate in mound construction (as it is assumed they would have) would attest not so much to strong authoritarian control on the part of a privileged priestly class as it would to the all-pervasive grip of superstition and awe of the supernatural characteristic of primitive peoples. Such beliefs would evoke voluntary individual response in connection with burial of the dead.

In summary, the picture derived from the evidence available on the northeastern Iowa Woodland peoples is one of a succession of hunting and food-collecting groups, which, after the advent of the Middle Woodland, may have practiced gardening as a supplement to the chase. Since such an economy seems evident, it appears inevitable that the larger sites would be located along the Mississippi River, and on the large terraces in particular. The terraces offered the physical space necessary for any sizeable population aggregate and fertile soil for limited agriculture. The river itself could furnish a wider variety of foods than could ever have been obtained in the narrow ravines and valleys that drain the Driftless Area in Iowa, or on the uplands.

Although a belief in life after death may be supposed from the appearance of utilitarian grave goods in the burial mounds, this belief need not have been highly developed. On the other hand, certain objects recovered in Hopewellian mounds of northeastern Iowa appear to denote prestige. Such items as copper gorgets and large knives or spear points made from finer than usual types of flint are typical. The nature of the prestige involved is difficult to assess. It

might easily denote superiority as a hunter or war leader as readily as an exalted religious or political position. Presence of such objects with burials indicates that the persons with whom they were buried were thought to have use of them in an afterlife.

The extensive Woodland use of rock shelters may suggest seasonal occupation during the winter, and may imply less permanent housing than necessary to withstand the rigor of winter. Rock shelter use could also reflect dependence on hunting and collecting to a marked degree, suggesting small hunting bands scattered over the area within hunting territories. For such peoples, rock shelters would offer better camping sites than the upland area around them. I believe the combination of rock shelter camps, and comparatively larger river terrace villages occupied by what probably were the same groups, makes a stronger case for the seasonal occupation of sites by those who combined hunting and collecting with agriculture or heavy dependence on wild rice. In connection with the probable emphasis on hunting, men may have enjoyed greater prestige than women, in which case a patrilineal and ultimately patrilineal society might be inferred. Site distribution indicates a population dispersed over the area involved, which, in turn, may indicate band organization. If any aggregate approaching the tribe existed before the advent of Oneota, it must have been quite loose in organization.

Utilization of the natural surroundings would have been commensurate with the level of cultural development. In this respect the evidence was relatively sketchy. No studies attempting to locate flint or clay sources have been made in northeastern Iowa. With the exception of two types of stone, all raw materials used in stone tool manufacture seemed to come from local sources. The two exceptions were the dark-brown chalcidony which is evidently Knife River flint, the quarries of which were located in Dunn County, N. Dak., (Bennett,

1945, p. 94), and the blue-gray hornstone employed in making the lanceolate blades found in French Town Mound 10 and the ovoid blades recovered from Pleasant Creek Mound 2. The latter probably was derived from quarries in southern Illinois (Fowke, 1928, pp. 530-532; Maxwell, 1951, pp. 31-32). The appearance of these two stone types in Early and Middle Woodland sites indicates trade relationships of a reasonably far-flung nature.

Copper artifacts indicate another trade relationship. The source of the copper for these artifacts doubtless was the Lake Superior region; hence this raw material would not have been transported as great a distance as the two stone types. The mechanics of the inferred trade relationships can only be guessed. It is tempting to invoke an explanation involving trading "fairs" such as those described by Ewers (1955, pp. 9-10) in connection with diffusion of the horse into the Plains. Ewers (*ibid.*, p. 12) believes trade relationships between hunting and horticultural groups were of considerable antiquity in the Plains, antedating the introduction of the horse. In the trade which brought Knife River Flint, hornstone, and copper to the northeastern Iowa people, it seems most likely that such raw materials were received through other groups of people. Although travel over wide areas would not be impossible, direct trips on the part of one or more men from northeastern Iowa to the sources of these raw materials would not seem as logical as trade with neighboring peoples who had received these goods from others nearer their sources.

In recent years several papers have dealt with broad chronological frameworks for eastern United States archeology (Ford and Willey, 1941, pp. 325-363; Griffin, 1946, pp. 37-95; Griffin, 1952c, pp. 352-364; Willey and Phillips, 1958, pp. 61-200). The general framework presented in these reports has become accepted throughout the East, although individuals do not agree on details.

It has been the task of this study to attempt to introduce some order into the mass of northeastern Iowa Woodland data, and to fit it into a framework of the kind presented by the above-cited syntheses. Analysis of available Woodland collections produced five divisions. A tentative sixth grouping was differentiated on the basis of the limited test excavations made at the Nelson Dewey Site.

Among the five complexes which emerged from the analysis, four were mortuary complexes derived from burial mound study. These are the Ryan Focus, McGregor Focus, Allamakee Focus, and the complex typified by the Lane Farm mounds and the local effigy mounds. As the latter complex was based on fragmentary data, it was not distinguished as a separate Iowa group within the Effigy Mound Aspect. The local effigy mound complex of northeastern Iowa probably belongs to the Raisbeck Focus of southwestern Wisconsin defined by Rowe (1956, pp. 9-103). The single group defined within the materials derived from village sites is the Minott's Focus, which is believed to be a local variation of the Effigy Mound Aspect beyond the range of true effigy mounds, and to be related to the Maples Mills complex of Illinois. The partial complex from the Nelson Dewey Site is probably a local variant of the Illinois Weaver Focus and, evidently, can be correlated with the mortuary complex labeled the Allamakee Focus.

These groupings were arranged in a chronological series in which the Ryan Focus was considered earliest, followed by the McGregor Focus. The Allamakee Focus may have overlapped the McGregor Focus and the Effigy Mound Aspect in time. The Ryan Focus was probably representative of the burial complex of Early Woodland peoples responsible for the Marion Thick pottery found at the Elephant Site and in small quantities in other local sites. Evidence that this simple pottery developed into more complex forms was seen in certain Black

Sand Incised sherds with simple rim forms and cord marks on the interior surface of the rims. The Ryan Focus was clearly related to the Red Ocher mounds of Illinois, and the Marion Thick pottery is representative of an early ceramic industry found throughout the northeastern United States.

The McGregor Focus which followed the Ryan Focus evidently was not representative of an early Hopewellian occupation. At the present time the apparent hiatus between the Ryan Focus and the McGregor Focus may be explained as a true gap in local human occupation. Or, it may have been the result of cultural conservatism of more northerly peoples and the persistence of older burial forms beyond the period in which they were in vogue further south in central Illinois and the area around Davenport. A third possibility is the existence of an as-yet-unrecognized complex between the Early Woodland and the late Middle Hopewellian McGregor Focus. Evidence from the Levens Rock Shelter suggests that that area participated fully in Middle Woodland developments known more completely in Illinois. Grave goods from the Lanesville Hopewell mound also indicates that a mortuary complex representative of this period was in existence south of Dubuque County, and that it probably resembled the Davenport mounds.

Relationships between the Allamakee and McGregor foci indicate that there was a gradual simplification of mound construction and grave offerings as time progressed, so that the McGregor gave way to the simpler Allamakee. At about this time, effigy mound ideas began to appear in the local Woodland materials. These were mixed with already existing traits at first, but they gradually submerged these older modes, developing eventually into the typical effigy mound type. The Lane Farm mounds are considered typical of this transitional period. The Allamakee Focus evidently overlapped both the McGregor Focus and the effigy

*Cultural
Speculations
and
Conclusions*

complex in time. A distinctive complex which seems to accompany the gradual introduction of Effigy Mound Aspect traits into northeastern Iowa was the single-cord style of pottery decoration. Doubtless it appeared first in the area with the Lane Farm Cord-Imprinted type and was later modified into full-fledged Madison Cord-Imprinted. The problem of the time at which the Orr Focus, a non-Woodland Mississippian cultural phenomenon, appeared in the northeastern Iowa area could not be resolved on the basis of the material from the excavations presented here. This problem needs more study. Rowe (1956, p. 83) has mentioned this in his study of Wisconsin effigy mounds, pointing out that evidence has been found to indicate contemporaneity of effigy mounds with Oneota remains.

Although the material included in this study permits differentiation of several Woodland divisions, evidence for the existence of earlier groups of people is very scant. It is assumed that these Woodland developments would have been preceded by Early Man and Archaic occupations on the basis of scattered evidence gathered in the process of amassing data on Woodland. Fluted and lanceolate points, resembling the Clovis and Folsom Fluted, and Plainview types, were noted in collections from the Driftless Area of Allamakee, Clayton, and Winnesheik Counties. In a small Jackson County rock shelter, a Graham Cave fluted point appeared. These types have been considered typical of early occupations elsewhere in the eastern United States (Wormington, 1949, pp. 19-44; Logan, 1952a, p. 27). Evidence of an Archaic occupation of northeastern Iowa in the period between 3000 B.C. and 5000 B.C. was offered by scattered finds of copper artifacts of classes typical of the Wisconsin Old Copper industry (Wittry and Ritzenthaler, 1956, pp. 244-254). Side-notched projectile points resembling those from Graham Cave in Missouri (Logan, 1952a, pp. 30-33) and of the Osceola Old Copper

site in Wisconsin (Ritzenthaler and Scholz, 1946, pp. 53-70) were found in numerous surface collections examined in the course of this research.

Since the bulk of this paper was written, Gordon Peckham, of Prairie du Chien, discovered a site in a gravel terrace of the Mississippi River in Prairie du Chien, directly across the river from the south unit of Effigy Mounds National Monument north of Marquette, Iowa. Pottery was absent. Chipped-stone materials were eroding out of a layer of black mucky clay buried under about 5 feet of sand and gravel. Only one complex seemed to be in evidence. Artifacts include large side-notched projectile points, large crude lanceolate knives, choppers, plano-convex scrapers, gravers, and workshop debris. The site was evidently of the Archaic horizon. Much of the site has now been removed through gravel-quarrying operations.

The evidence points to full participation of this region in the general prehistoric cultural trends of the Middle West. No highly distinctive local cultural entities developed within northeastern Iowa. Woodland phenomena in the area are reflective of the developments of adjacent areas. The local Woodland appeared as a series of groups, living in a forest environment along the Mississippi and its major tributaries, dependent on an economy based on hunting, fishing, and food collecting, supplemented by limited maize horticulture (or wild rice gathering as a local substitute for maize). In pursuing this way of life, it was most advantageous to occupy the large river terraces along the Mississippi for a more varied and readily accessible food supply. Winters may have been spent in the small rock shelters of the inland ravines and valleys. Social organization and religion evidently remained simple in spite of evidence for steady but gradual population increase over the probable 1,500 or more years of Woodland culture growth. Contacts with neighboring peoples were indicated, not only by the ab-

sorption of ideas of surrounding groups, but also by the occurrence of copper and at least two foreign types of stone in the northeastern Iowa sites. The appearance of the latter indicates trade relationships in three directions: north, south, and west. These relationships which may have been important in the transfer of ideas and habits that made up the culture of northeastern Iowa peoples on the several time horizons in evidence.

APPENDIX: HOPEWELLIAN TRAITS OF THE DAVENPORT AREA

The list of traits below is taken from the accounts of several investigators (Tiffany, 1876a, pp. 64-65; 1876b, pp. 104-106; 1876c, pp. 113-114; Lindley, 1876, pp. 111-113; Farquaharson, 1876, pp. 117-143; Pratt, 1876a, pp. 99-104; 1876b, pp. 106-111; Starr, 1897, pp. 68, 82-83, 110). The information is from mounds in the vicinity of Davenport and Burlington in Iowa, and Rock Island and Moline in Illinois. The major groups from which the reports offer data are the Albany Mound Group, near Albany, Ill.; the Davenport Mound Group, south of Davenport; the Cook Mound Group, also near Davenport; the Toolesboro Mound Groups; and isolated mounds in both Iowa and Illinois along the Mississippi River. Traits observed in these mounds are as follows:

1. Conical mounds
2. Oval mounds
3. Extended burials
4. Bundle burials
5. Sitting burials
6. Cremations
7. Single skull burials
8. Fragmentary burials
9. Burials in a wheel formation with shell cup at center
10. Saucer-shaped crematory basins
11. Clay-lined basin
12. Ash layers in mounds
13. Hard clay over burials
14. Shell layer in mound

15. Humus removed from mound floor
16. Logs over burials (log tombs?)
17. Prepared clay floors
18. Sand floors
19. Rock walls in mounds
20. Rocks over burials
21. Stones at mound surface
22. Circles of stones around single skulls
23. Circles of stones around grave goods
24. Piles of stones in mounds
25. Stone layers in mounds
26. Rock and shell layers in mounds
27. Rock enclosures
28. Scattered shells in mounds
29. Evidence of fire along rock walls
30. Potsherds with burials
31. Whole pots with burials
32. Broken pots with burials
33. Naples Stamped pottery
34. Havana Zoned pottery
35. Hopewell Zoned Incised
36. Notched clamshell
37. Perforated clamshell
38. Sheet mica
39. Galena lumps
40. Copper axes
41. Cloth covered copper axes
42. Copper awls
43. Copper awls with rectangular cross-sections
44. Copper hemispheres
45. Long cylindrical copper beads
46. Short cylindrical copper beads
47. Copper beads (type unspecified)
48. Copper spirals

49. Copper cones
50. Copper "spoon"
51. Copper eyes inset in pipe
52. Copper crescents
53. Copper knives
54. Copper spear points
55. Silver hemisphere
56. Red ocher in mound
57. Yellow ocher in mound
58. Projectile points (type unspecified)
59. Small corner-notched projectile points
60. Straight-stemmed projectile points
61. Small side-notched projectile points
62. Large ceremonial blades
63. Obsidian blades and projectile points
64. Snyders Notched points
65. Flint flakes with burials
66. Flint knives
67. Stone platform pipes (plain)
68. Red pipestone pipes
69. Effigy pipes
70. Frog-effigy pipes
71. Bird-effigy pipes
72. Animal-effigy pipes
73. Netsinkers
74. Polished stones
75. "Whetstones"
76. Stone ax
77. Small sandstone objects (polishing stones?)
78. Unfinished pipe
79. Turtle shell in pot
80. Clamshells in pots
81. Shell beads (type unspecified)
82. Pearl eyes inset in effigy pipe
83. Conch shells
84. Conch-shell cup
85. Bone effigy of bear canine
86. Worked-bone fragment
87. Antler handle
88. Notched human bone
89. Perforated bear canines
90. Rodent incisors (including beaver)
91. Circle cut from human skull
92. Human skull with circular holes cut in it
93. Perforated flat bone needle fragment
94. Antler fragments

REFERENCES

- Baerreis, David A.
1953. Blackhawk Village Site (Da5), Dane County, Wis. *Journal, Iowa Archaeological Society*, vol. 2. McGregor, Iowa.
- Baerreis, David A., Hiroshi Daifuku, and James E. Lundstedt
1954. The Burial Complex of the Reigh Site. *The Wisconsin Archeologist*, vol. 35. Milwaukee.
- Baker, Frank C., et al.
1941. Contributions to the Archaeology of the Illinois River Valley. *Transactions, American Philosophical Society*, n.s., vol. XXXII, pt. 1. Philadelphia.
- Barrett, S. A.
1933. Ancient Aztalan. *Bulletin of the Public Museum of the City of Milwaukee*, vol. XIII. Milwaukee.
- Beaubien, Paul L.
1953. Cultural Variations Within Two Woodland Mound Groups of Northeastern Iowa. *American Antiquity*, vol. XIX, no. 1, pp. 56-66. Salt Lake City.
- Bennett, John W.
1945. *Archaeological Explorations in Jo Daviess County, Illinois*. University of Chicago Press.
1952. The Prehistory of the Northern Mississippi Valley. In James B. Griffin, ed., *Archeology of Eastern United States*. University of Chicago Press.
- Byers, H. G., et al.
1938. Formation of Soil. In *Soils and Men, Yearbook of Agriculture*, U. S. Department of Agriculture. Washington.
- Chapman, Carl H.
1948a. A Preliminary Survey of Missouri Archaeology, Part III: Woodland Cultures and Ozark Bluff Dwellers. *The Missouri Archaeologist*, vol. 10, no. 3. Columbia.
1948b. A Preliminary Survey of Missouri Archaeology, Part IV: Ancient Cultures and Sequence. *The Missouri Archaeologist*, vol. 10, no. 4. Columbia.
1952. Culture Sequences in the Lower Missouri Valley. In James B. Griffin, ed., *Archeology of Eastern United States*. University of Chicago Press.

- Cole, Fay-Cooper, and Thorne Deuel
1937. *Rediscovering Illinois*. University of Chicago Press.
- Crane, H. R.
1956. University of Michigan Radiocarbon Dates I. *Science*, vol. 124, no. 3224. Washington.
- Cunningham, Wilbur M.
1948. *A Study of the Glacial Kame Culture in Michigan, Ohio, and Indiana*. Occasional Contributions from the Museum of Anthropology, University of Michigan, no. 12. Ann Arbor.
- DeJarnette, David L.
1952. Alabama Archeology: A Summary. In James B. Griffin, ed., *Archeology of Eastern United States*. University of Chicago Press.
- Deuel, Thorne
1952. Hopewellian Dress in Illinois. In James B. Griffin, ed., *Archeology of Eastern United States*. University of Chicago Press.
- Ewers, John C.
1955. The Horse in Blackfoot Culture, with Comparative Material from Other Western Tribes. *Bureau of American Ethnology Bulletin 159*. Smithsonian Institution. Washington.
- Farquaharson, R. J.
1876. Recent Archaeological Discoveries at Davenport, Iowa, of Copper Axes, Cloth, etc., Supposed to Have Come Down to Us from a Prehistoric People, Called the Mound-Builders. *Proceedings of the Davenport Academy of Natural Sciences*, vol. I. Davenport, Iowa.
- Ford, James A., and Gordon R. Willey
1941. An Interpretation of the Prehistory of the Eastern United States. *American Anthropologist*, vol. 43. pp. 325-363. Menasha, Wis.
- Fowke, Gerard
1928. Archeological Investigations II. *Forty-Fourth Annual Report of the Bureau of American Ethnology to the Secretary of the Smithsonian Institution, 1926-1927*. Washington.
- Fowler, Melvin L.
1952. The Clear Lake Site: Hopewellian Occupation. In Thorne Deuel, ed., *Hopewellian Communities in Illinois*. Illinois State Museum Scientific Papers, no. V. Springfield, Ill.
- Griffin, James B.
1942. Adena Pottery. *American Antiquity*. vol. VII, no. 4, pp. 344-358. Menasha, Wis.
1946. Cultural Change and Continuity in Eastern United States Archeology. In Frederick Johnson, ed., *Man in Northeastern North America*. Papers of the Robert S. Peabody Foundation for Archeology, vol. 3. Andover, Mass.
1949. The Cahokia Ceramic Complexes. Proceedings of the Fifth Plains Conference for

Archeology. *University of Nebraska Laboratory of Anthropology Notebook*, no. 1. Lincoln.

1952a. *Archeology of Eastern United States*. University of Chicago Press.

1952b. Some Early and Middle Woodland Pottery Types in Illinois. In Thorne Deuel, ed., *Hopewellian Communities in Illinois*. Illinois State Museum Scientific Papers, no. V. Springfield, Ill.

1952c. Prehistoric Cultures of the Central Mississippi Valley. In James B. Griffin, ed., *Archeology of Eastern United States*. University of Chicago Press.

Helmen, Vernon R.

1950. *Archeological Survey of Owen County, Indiana*. Indiana Historical Bureau, Indianapolis.

Henning, Dale R.

1957. Malone Rockshelter Revisited. *Iowa Archeological Society Newsletter*, no. 23. Iowa City, Iowa.

Hurt, Wesley R., Jr.

1952. *Report of the Investigation of the Scalp Creek Site, 39Gr1, and the Ellis Creek Site, 39Gr2, Gregory County, South Dakota, 1941, 1951*. *Archaeological Studies Circular*, no. 4. South Dakota Archaeological Commission, Pierre, S. Dak.

Johnson, Elden, and Phillip S. Taylor

1956. Spring Lake Archeology, the Lee Mill Cave. *Science Bulletin no. 3, pt. 2*. Science Museum of the Saint Paul Institute. Saint Paul.

Keyes, Charles R.

1930. A Unique Survey. *The Palimpsest*, vol. XI. Iowa City.

1934. Antiquities of the Upper Iowa [River]. *The Palimpsest*, vol. XV. Iowa City.

1943. Minott's Rock Shelter. *The Palimpsest*, vol. XXIV. Iowa City.

1949. Four Iowa Archeologies with Plains Affiliations. Proceedings of the Fifth Plains Conference for Archeology. *University of Nebraska Laboratory of Anthropology Notebook no. 1*. Lincoln.

MS. *Iowa Archaeology: a Condensed Statement*. MS in files of the State Historical Society of Iowa.

Kivett, Marvin F.

1952. Woodland Sites in Nebraska. *Nebraska State Historical Society Publications in Anthropology no. 1*. Lincoln.

Krieger, Alex D.

1948. A Suggested General Sequence in North American Projectile Points. Proceedings of the Sixth Plains Archeological Conference. *Anthropological Papers no. 11*. University of Utah. Salt Lake City.

Kroeber, A. L.

1940. Statistical Classification. *American Antiquity*, vol. VI, no. 1, pp. 29-44, Menasha, Wis.

Woodland
Complexes

1947. *Cultural and Natural Areas of Native North America*. University of California Press. Berkeley.

Lapham, I.A.

1855. *The Antiquities of Wisconsin as Surveyed and Described. Smithsonian Contributions to Knowledge*, Smithsonian Institution. Washington.

Lehmer, Donald J.

1954. *Archeological Investigations in the Oahe Dam Area, South Dakota, 1950-51. River Basin Surveys Papers. Interagency Archeological Salvage Program, no. 7. Bureau of American Ethnology Bulletin 158.* Smithsonian Institution. Washington.

Lindley, Clarence

1876. *Mound Explorations in 1875. Proceedings, Davenport Academy of Sciences, vol. I.* Davenport, Iowa.

Logan, Wilfred D.

- 1952a. *Graham Cave: an Archaic Site in Montgomery County, Missouri. Memoir, Missouri Archaeological Society, no. 2.* Columbia.
- 1952b. *Archeological Investigation of Spike Hollow Rock Shelter, Allamakee County, Iowa. Journal, Iowa Archaeological Society, vol. 2.* McGregor, Iowa.
1954. *Two Projectile Points from Allamakee County. Journal, Iowa Archaeological Society, vol. 3.* McGregor, Iowa.
1971. *Final Investigation of Mound 33, Effigy Mounds National Monument, Iowa. Journal of the Iowa Archeological Society, vol. 18, pp. 30-45,* Lincoln.

Lyford, Carrie A.

1953. *Ojibwa Crafts.* Indian Hand Crafts Series no. 5. Branch of Education, Bureau of Indian Affairs. Haskell Institute, Lawrence, Kans.

MacNeish, Richard S.

1952. *The Archeology of the Northeastern United States. In James B. Griffin, ed., Archeology of Eastern United States.* University of Chicago Press.

Martin, Lawrence

1916. *The Physical Geography of Wisconsin. Wisconsin Geological and Natural History Survey Bulletin XXXVI.* Madison, Wis.

Maxwell, Moreau S.

1950. *A Change in the Interpretation of Wisconsin's Prehistory. Wisconsin Magazine of History, vol. 33.* Madison, Wis.
1951. *The Woodland Cultures of Southern Illinois: Archeological Excavations in the Carbondale Area. Logan Museum Publications in Anthropology Bulletin 7.* Beloit College. Beloit, Wis.

Mayer-Oakes, William J.

1951. *Starved Rock Archaic, a Prepottery Horizon from Northern Illinois. American Antiquity, vol. XVI, no. 4, pp. 313-323.* Menasha, Wis.
1955. *Prehistory of the Upper Ohio Valley; an Introductory Archeological Study. Anthropological Series no. 2, Annals of the Carnegie Museum, vol. 24.* Pittsburgh.

References

- McKern, W. C.
1928. The Neale and McClaughry Mound Groups. *Milwaukee Public Museum Bulletin*, no. 3. Milwaukee.
1930. The Kletzien and Nitschke Mound Groups. *Milwaukee Public Museum Bulletin*, no. 4. Milwaukee.
1931. A Wisconsin Variant of the Hopewell Culture. *Milwaukee Public Museum Bulletin*, no. 10. Milwaukee.

Murdock, George P.
1949. *Social Structure*. The MacMillan Co. New York.

Newcomb, W. W.
1950. A Re-examination of the Causes of Plains Warfare. *American Anthropologist*, vol. 53. Menasha, Wis.

- Orr, Ellison
1927. An Apparently Very Old Prehistoric Camp Site. *Proceedings, Iowa Academy of Science*, vol. XXXIV. Des Moines.
MS. *Survey and Excavation of Indian Mound Groups and Cemeteries in the Valley of the Upper Iowa and Mississippi Rivers, 1934*. Unpublished notes, vol. I. MS on file at Effigy Mounds National Monument.
MS. *Survey and Excavation of Indian Mound Groups along the Mississippi River, 1935*. Unpublished notes, vol. III. MS on file at Effigy Mounds National Monument.
MS. *Survey and Excavation of Indian Mounds, Village Sites, and Cemeteries in the Valleys of the Upper Iowa and Mississippi Rivers, 1936*. Unpublished notes, vol. V. MS on file at Effigy Mounds National Monument.

- Pratt, W. H.
1876a. Report of Explorations of the Ancient Mounds at Albany, Whiteside County, Illinois. *Proceedings, Davenport Academy of Natural Sciences*, vol. I, Davenport, Iowa.
1876b. Report of Explorations of the Ancient Mounds at Toolesboro, Louisa County, Iowa. *Proceedings, Davenport Academy of Natural Sciences*, vol. I. Davenport, Iowa.

Quimby, George
1954. Cultural and Natural Areas before Kroeber. *American Antiquity*, vol. XIX, no. 4, pp. 317-331. Salt Lake City.

- Ritchie, William A.
1936. A Prehistoric Fortified Village Site at Canandaigua, Ontario County, New York. *Research Records of the Rochester Museum of Arts and Sciences*, no. 3. Rochester.
1947. Archaeological Evidence for Ceremonialism in the Owasco Culture. *Researches and Transactions of the New York State Archaeological Association*, vol. XII. Rochester.
1949. An Archaeological Survey of the Trent Waterway in Ontario, Canada and Its

Significance for New York State Prehistory. *Researches and Transactions of the New York State Archaeological Association*, vol. XII. Rochester.

Ritchie, William A., and Richard S. MacNeish

1949. The Pre-Iroquoian Pottery of New York State. *American Antiquity*, vol. XV, no. 2, pp. 97-123. Menasha, Wis.

Ritzenthaler, Robert E.

1953. *Prehistoric Indians of Wisconsin*. Milwaukee Public Museum Popular Science

Ritzenthaler, Robert E., and Paul Scholz

1946. The Osceola Site, an "Old Copper" Site near Potosi, Wisconsin. *The Wisconsin Archeologist*, vol. 27. Milwaukee.

Rowe, Chandler W.

1956. *The Effigy Mound Culture of Wisconsin*. Milwaukee Public Museum Publications in Anthropology, no. 3. Milwaukee.

Scully, Edward G.

1951. *Some Central Mississippi Valley Projectile Point Types*. Museum of Anthropology, University of Michigan, Ann Arbor.

Starr, Frederick

1897. Summary of the Archaeology of Iowa. *Proceedings, Davenport Academy of Natural Sciences*, vol. VI. Davenport, Iowa.

Strong, William Duncan

1935. *An Introduction to Nebraska Archeology*. Smithsonian Miscellaneous Collections 93, no. 10. Washington.

Tiffany, A. S.

- 1876a. Prehistoric Cremation Furnace. *Proceedings, Davenport Academy of Natural Sciences*, vol. I. Davenport, Iowa.
- 1876b. Report on the Results of the Excursion to Albany, Illinois, November 7th and 8th, 1873. *Proceedings, Davenport Academy of Natural Sciences*, vol. I. Davenport, Iowa.
- 1876c. Mound Explorations in 1875. *Proceedings, Davenport Academy of Natural Sciences*, vol. I. Davenport, Iowa.

Thomas, Cyrus

1894. Report on the Mound Explorations of the Bureau of Ethnology. *Twelfth Annual Report of the Bureau of Ethnology to the Secretary of the Smithsonian Institution, 1890-91*. Washington.

Webb, William S.

1946. Indian Knoll, Site Oh2, Ohio County, Kentucky. *University of Kentucky Reports in Anthropology and Archaeology*, vol. 4, no. 3, pt. 1. Lexington.

Webb, William S., and Charles E. Snow

1945. The Adena People. *University of Kentucky Reports in Anthropology and Archaeology*, vol. 6. Lexington.

References

- Wedel, Waldo R.
1943. Archeological Investigations in Platte and Clay Counties, Missouri. *Bulletin, U.S. National Museum, 183*. Smithsonian Institution, Washington.
- Wilford, Lloyd A.
1955. A Revised Classification of the Prehistoric Cultures of Minnesota. *American Antiquity*, vol. XXI, no. 2, pp. 130-142. Salt Lake City.
- Wiley, Gordon R., and Phillip Phillips
1958. *Method and Theory in American Archaeology*. University of Chicago Press.
- Willoughby, Charles C.
1935. *Antiquities of the New England Indians, with Notes on the Ancient Culture of the Adjacent Territory*. Peabody Museum of American Archaeology and Ethnology. Harvard University, Cambridge.
- Wittry, Warren L.
1956. Kolterman Mound 18 Radiocarbon Date. *The Wisconsin Archeologist*, vol. 37. Milwaukee.
- Wittry, Warren L., and E. G. Bruder
1955. Salvage Operations at the Kolterman Mound Group. *The Wisconsin Archeologist*, vol. 6. Milwaukee.
- Wittry, Warren L., and Robert E. Ritzenthaler
1956. The Old Copper Complex: An Archaic Manifestation in Wisconsin. *American Antiquity*, vol. XXI, no. 3, pp. 244-254. Salt Lake City.
- Wormington, H. M.
1949. *Ancient Man in North America*. Denver Museum of Natural History, Popular Series, no. 4, 3rd ed. Denver.
- Wray, Donald E.
1938. Hopewell Traits in Certain Bluff Mounds of Fulton County. *Transactions, Illinois State Academy of Science*, vol. 31, no. 2, Springfield.
1952. Archeology of the Illinois Valley: 1950. In James B. Griffin, ed., *Archeology of Eastern United States*. University of Chicago Press.

INDEX

- Abrader, sandstone, 51, 60, 64, 120, 165, 166
- Adena Mounds: comparison with northeastern Iowa mounds, 144
- Adze, 66, 118, 173. See also Scraper
- Agriculture (Cultivation): appearance in Late Woodland times, 184; conditions for, 181-185; disturbance of mounds, 17, 20; extent, 188
- Allamakee County, Iowa, 2, 3, 5, 6, 7, 11, 40, 57, 58, 65, 71, 73, 75, 86, 87, 94, 95, 99, 100, 108, 113, 117, 119, 136, 139, 143, 149, 156, 159, 167-170, 173, 174, 175, 177, 180-183, 188; collections, 2, 3; ecology, 179; excavations, 2, 3; geographic features, 179; Middle Hopewellian remains compared with Jackson County, 182; Mississippi River influence, 178; mound groups, 26-56; mound relationships, 156, 157; mounds with Early Woodland remains, 175; Oneota remains, 183; ceramic sequence in sites, 174; rock shelter camps, 181
- Allamakee Focus, 154, 157, 161-163, 165, 170, 177; coefficients of association, 154; correlation with Boone Focus, 176; correlations with effigy mounds, 176; correlation with Kansas City, Missouri Hopewellian mounds, 176; correlation with Lane Farm Mounds, 176; correlation with McGregor Focus, 176, 187; comparison with Middle Western burial complexes, 150-153; comparison with Ralls Focus, 168; construction traits, 163, 164; correlation with Ralls Focus, 176; dating, 176; mound-village correlations by pottery, 175; overlapping of effigy complex, 187, 188; overlapping of McGregor Focus, 187; simplification of mound construction, 187
- Altar, stone, 17, 158, 160-162, 164
- Animals. See Fauna
- Antler: awl, 123; cut fragment, 77, 123, 166; cylinder, 123; drift, 83, 172-174; flaker, 60, 61, 64, 76, 123, 165, 174, 175; fork, 123; projectile point, 24, 123; socketed segment, 123; tine, 51, 53, 83; tip, 59-61, 75, 83
- Anvilstone, 61, 62, 64, 119, 165, 166, 172, 173, 175
- Archaic deposits, dating of, northeastern Iowa, 87, 171, 188; Graham Cave, Missouri, 112; sites, 172, 188
- Artifact inventory: Elephant Village Site, 68-69; Highway Thirteen Rock Shelter, 71; Jackson County Sites, 81-83; Levsen Rock Shelter, 77; Prairie due Chien gravel site, 188; Sixteen Rock Shelter, 76; Waterville Rock Shelter, 75
- Artifact type; antler, 123; bone, 120-123; chipped stone, 110-118; copper, 186; ground and pecked stone, 118-120; metal, 124, 125; shell, 123, 124; stone, 110-120, 161, 169-171, 186
- Artifact types, numerical distribution by excavation level: Elephant Site, Tests I and II, 69; Trench C, 66; Minott's Rock Shelter, 64; Nelson Dewey Site, 72; Spring Hollow Rock Shelter No. 1, 59; No. 2, 60; No. 3, 62
- Artifacts: denoting prestige, 185, 186; number of in rock shelters, 57; Oneota, 183
- Awls: bone, 24, 53, 61, 75-77, 120, 121, 123, 166, 172, 174, 175; copper, 29, 30, 143, 144, 156, 172, 175
- Axes, 66, 119, 156, 173
- Aztalan Site, Wisconsin, 83, 170, 173
- Babcock Mounds, Missouri, 154
- Baerreis, David A., 101
- Ball, stone, 67, 120, 173
- Beads: bone, 53; copper, 14, 20, 21, 32, 47, 56,

57, 143, 144, 146, 152, 160, 162; conch columella, 24, 124; European trade, 14, 21; pearl, 149, 152; purple glass, 21; shell, 144, 156
Bear Creek, 53, 181, 183
Bear Effigy, 33–35
Bennett, John W., 2, 156, 157
Big Lake Site, Crawford Co., Wis., 114, 117, 119
Blade cache, 23, 148, 156; in Frenchtown Mound, 10, 23
Blade type: corner notched, 35, 36; lanceolate, 29, 186; notched, 36; ovoid, 36, 158, 186; ovoid-lanceolate, 48; pointed at both ends, 24
Blades, 169; ceremonial, 22, 23, 56; comparisons of, in Adena mounds, Iowa mounds, Hopewellian mounds, 146; dimensions, 23; Hopewellian, of Pleasant Creek Mound, 2, 36; of Illinois, 22; red ochre, 117
Boatstones, 82, 120, 173
Bolling Pasture Site, 58; pottery in, 173
Bone: burned, 25, 37, 53, 62, 65, 76, 78; split, 62, 65, 76, 78, 81, 84, 172
Bone objects: antler, 24, 51, 53, 59–61, 64, 76, 77, 83, 123, 172–174; awl, 24, 53, 61, 75–77, 83, 120, 121, 123, 172, 174, 175; flesher, 77, 83, 121; fragment, 61, 83, 122; hoes, 76; needles, 17, 83, 121, 172, 174; scraper, 77, 83; teeth, 21, 24, 35, 49, 52, 56, 57, 64, 83, 122, 123, 147, 165, 166, 191; tube, 83, 122; whistle, 83, 122
Burial pits: basin-shaped, 25; clay-lined, 25, 158; circular, 28; orientation, 12, 17, 20, 21, 25, 27, 48, 49, 52, 147, 158; oval, 34, 43, 44, 158, 160, 161, 164; rectangular, 20–22, 48, 49, 52, 146–148, 157, 158; saucer-shaped, 159; shallow, 27, 34, 39, 145, 158
Burial type: bundle, 12, 14, 17, 20, 21, 24, 29, 34–36, 40–44, 46–53, 56, 143, 144, 146–148, 151, 156, 158, 160, 161, 164; cremation, 25, 39, 141, 143, 146, 147–149, 151, 157–159; extended, 21, 23, 26, 35–37, 40–42, 48, 49, 51, 67, 143, 144, 151, 157, 158, 160–162; flexed, 12, 70, 143, 144, 151; fragmentary, 12, 21, 147, 158, 160, 164; intrusive, 21, 46, 160, 161, 164; semi-flexed, 22; single skull, 151, 155, 160
Burials, 12, 14, 17, 20, 21–26, 29, 33–37, 40–44, 46–53, 56, 65, 67, 70, 143, 144, 146–148, 151, 156–162, 164, 169, 175
Burials, Oneota, 40, 41, 43, 49, 51, 53, 161, 164, 175
Burned Earth Mound, 37
Bones: animal, 46, 59, 65, 70, 72, 75, 78, 84, 121, 122, 162, 164, 172, 180; human, 12, 14, 17, 20,

21, 23–27, 29, 30, 32, 33–35, 37, 39–41, 43, 46, 47, 49, 51–53, 56, 70, 84, 122, 156, 162; numbers of, 65
Boone County, Iowa, 105
Boone Focus of Missouri, 154, 157, 159, 168, 176; coefficients of association, 154; compared with Allamakee Focus, 168; compared with Minott's Focus, 168; compared with Weaver Focus, 168; in relation to other Middle Western burial complexes, 150–153
Brazell's Island Bear Effigy, Allamakee Co., Iowa, 33–35, 114, 115, 118, 160–162, 167, 175
Buchanan County, Iowa, 6
Buck Creek, Iowa, 19, 181
Burial complexes, 41, 146, 187; coefficients of association for 11 Middle Western States, 154; comparative trait list for 11 Middle Western States, 150–153; Red Ochre, 142–146; Hopewellian, 146–157; Allamakee Focus, 157–161; Effigy Mound, 161–164; Simple Conical Mounds, 164–165
Burial customs. *See* Burial Type
Burial mound chronology in Allamakee County, 182, 183
Burial mounds, 11–57; animal bones found in, 180; location of pits in, 161, 162; mortuary complexes, 187; pottery in, 174, 175; objects denoting personal prestige in, 186; orientation of remains in, 33, 41, 51. *See also* Mound Construction
Burial practices: associations of, 177; in effigy mounds northeastern Iowa, 162
Cache: blade, 23, 148, 152, 156; pits, 39, 51, 183; shell, 29, 86, 158
Celts: 21, 57; chipped stone, 50, 55, 82, 118, 173; copper, 41, 124, 160, 162; ground stone, 119
Charcoal, 14, 17, 25, 27, 33, 39, 41, 50, 53, 55, 61, 72, 155, 158–160, 164; dating, 176
Chronological sequence: foci, 187; gaps in, 187; pottery, 31, 139, 140
Chronology: Archaic, 4, 171–173, 181, 188; late Archaic, 143, 144, 146, 156; Hopewell, 4, 129, 135, 146, 159; Early Hopewell, 105, 155, 156, 171; Middle Hopewell, 93, 155–157, 171, 175–177, 187; Late Hopewell, 154, 155, 162, 163, 171, 174, 177; Mississippi, 159, 170, 172, 173, 175; Upper Mississippi, 172, 175; Woodland, 39–43, 51, 57, 135, 163, 164, 169–173;

- Early Woodland, 4, 132, 140, 142, 146, 148, 156, 171, 173-177, 181-183, 185, 187; Middle Woodland, 4, 5, 31, 84, 94, 132, 140, 142, 171-177, 181-183, 187; Late Middle Woodland, 4, 91, 92, 94, 97, 100, 103, 129, 136, 156, 168, 173, 174, 176, 177; Late Woodland, 31, 97, 100, 103, 129, 136, 141, 168, 154, 156, 165, 172, 173, 175-177, 181-183
- Chipped stone artifacts, 110-118; adzes, 66, 82, 118, 173; blades, 116, 117; celts, 50, 55, 82, 118, 173; chips, 40, 46, 55, 62, 72; chipped stones, 35, 41, 162; choppers, 60, 62, 64, 72, 76, 82, 118; drills, 82, 118, 162; knives, 5, 22, 23, 48, 51, 53, 56, 59, 60, 62-64, 66, 67, 69, 71, 76, 82, 84, 86, 87, 116, 117, 118, 156, 165, 166, 169, 171, 173, 188; projectile points, 29, 32, 35, 36, 40, 47, 49, 51, 53, 55, 57, 59-64, 66, 69, 71-73, 75, 76, 82, 84, 86, 87, 110-116, 160-162, 165, 166, 168, 169-171, 173-175, 177, 188; scrapers, planoconvex, 26, 35, 51, 53, 64, 66, 76, 86, 165, 166, 169, 173, 188; spoke-shaves, 59, 60, 76, 118, 166; tools, 61, 118, 152
- Clam River, Wis., 143
- Clamshell: cache, 29, 158; in pots, 153; perforated, 165; spoon, 174, 175
- Clay, burned, 159
- Clay Mills Rock Shelter, Iowa, 58, 85, 93
- Clayton Co., Iowa: archaeological collections, 5; bison bones, absence in Woodland sites, 180; copper spear point, 87; foci comparison, 167; Driftless Area, 1; ecology, 179; effigy mounds, 11, 168, 175; excavations, 2; geographic features, 179; Hopewellian remains, 177; Minott's Focus, 169, 175; Mississippi River influence, 178; mound affiliations, 143, 149; mound/village complexes, 169; mounds, 17-25, 156, 159; point types, 188; pottery, 86, 94, 95, 99, 100, 108, 168-170, 173-175; rock shelters, 70, 169, 181
- Clayton Co. mound groups: French Town Mound Group, 21-25; Gudovissy Mound Group 2, 17-19; Harvey's Island Mound Group 2, 19-21
- Clear Lake Site, Illinois, 172, 173
- Climatological data, 180
- Conch Columella beads, 24, 124, 144, 146, 153
- Conch shell cups with burials, 155
- Conical mounds with few or no grave goods, 157-161; traits, 158
- Conical mounds (simple), 164, 165
- Cooper, Leland, 4
- Copper artifacts, 57, 186, 188; awl, 29, 30, 82, 87, 124, 125, 152, 156, 175; axe, 156; bead, 14, 20, 21, 32, 47, 56, 57, 124, 147, 152, 160, 162; celt, 41, 124, 152, 160, 162; crescents, 57, 124; earspool, 57, 125, 152; gorget, 147, 152, 185; hemispheres, 48, 124, 152; knives, 156; nugget, 125, 147, 153; ornament, 156; panpipe, 153; pendant, 152; plate, 12; spear point, 87; tube, 51; wire, 53
- Cores, 36, 46, 61, 62, 72, 76, 78, 84; chopper, 64, 82, 118, 165, 166, 169, 171, 188
- Corn, 188; cultivation, 182; effect on Woodland complex distribution, 182
- Crabtown Rock Shelter, Crabtown, Jackson Co., Iowa: description, 78-81; animal bones, 78, anvilstone, 166; artifacts, 81, 82; cultural unit, 78, 167; excavation, 58, 78; knives, 118, 166; occupation, 78; pottery, 81, 93, 166; projectile points, 111, 112, 166
- Crawford County, Wis., 86, 149, 154, 173
- Culture: aspects of social organization, 184; distribution, 182; interchanges, 177; periods, 4; stages, 5; division of labor, 184; Iowa trait borrowing from south, 177; leisure time activities, 181, 182; non-material aspects, 184; persistence of older burial forms, 182, 187; religion, 185; social organization, level of cultural development, 186; transfer of ideas, 188, 189
- Cups, seashell, 155, 156
- Cut human bones, 152
- Davenport Hopewellian Mounds: comparison with Illinois River Valley mounds, 156, 157; comparison with other sites, 155, 156; complexity, 155; copper objects, 155; construction, 156; cultural persistence, 187; grave offerings, 155, long tombs, 155; pipes, 155, 191; pottery types, 156, 177; relation to McGregor Focus, 176; skeletal arrangements, 155; traits, 155, 156, 177, 190, 191
- Davenport, Iowa, 2, 163, 187
- Deppe Mound Group, Jackson Co., Iowa, 12; Mound 7, 12, 158; Mound 8, 12, 122, 147
- Diamond Bluff, 170
- Disc; brass, 21; human skull, 12
- Dresser, W. F., 65
- Driftless Area, Iowa, 1; geology 1; geography, 1, 185, 188; comparison with Middle Western areas, 1; comparison with Ozark Plateau, 1; productivity of, in comparison with Mississipp-

pi Valley, 185
Drills, 82, 118, 162
Dubuque County, Iowa, 1, 2, 5, 168, 181, 187.

Early Man points: 181
Early Woodland: artifacts, 156; burial complex, 148; ceramics, 171, 174, 175, 187; ceremonial life, 189; chronological position, 176, 177, 187; distribution, 175; economy, 183; mounds, 4, 6, 132, 140, 142, 146, 175; population, 182; sites, 181, 186; trade, 186
Earspools, 57, 152
Earth, burned, 39
Earth enclosures, 39
Ecology of Mississippi River Valley, 178-181; animals, 180; climate, 180; habitation sites, 181; plants, 178, 179; soils, 179, 180
Economics: agriculture, 181, 182; availability of raw materials, 186; fishing, 188; food collecting, 188; hunting and gathering, 181-183, 188; labor, 182, 184; leisure time activities, 181, 182; trade, 186
Economy, evaluation: derived from environmental characteristics, 184; related to social organization, 184
Effigy Complex, 164, 170, 187, 188
Effigy Mound Aspect, 164, 167, 169, 171, 174, 176, 177, 188; chronology, 170, 187; comparison with Minott's Focus, 169; Iowa manifestation, 162; northeastern Iowa sites, 169, 170; phase related to Upper Mississippi Phase, 170; traits in northeastern Iowa, 187
Effigy mounds: animal, 20; bear, 33-35, 176; bird, 37, 176; burial practices, 160-162, 182; chain, 11; construction traits, 160, 161, 163, 164; distribution, 11; elaboration of form, 182; grave goods, 160, 182; linear, 11; pottery, 162-164, 175; relation to Allamakee Focus, 176, 187-188; village complexes, 169; Wisconsin, 150-154, 169
Effigy Mounds National Monument, McGregor, Iowa, 4, 6, 11, 86, 146, 161, 176, 188; Mound 30, 176; Mound 33, 124, 146, 147, 149, 154, 155, 171, 179, 180; Mound 55, 115, 123, 147, 176; Mound 57, 146, 147, 154, 155
Effigy pipes, 65, 152, 155, 156
Elephant Village Site, Allamakee Co., Iowa, 58, 65-70, 73, 91, 111-116, 181, 139; artifact types from 1955 *Test I*, in numerical distribution, 69; artifact types from 1955 *Test II*, in

numerical distribution, 68; artifact types from *Trench C*, in numerical distribution, 66; artifacts, 174; description, 65-70; excavation, 66-70; occupation, 174; pottery, 174, 187; pottery correlation with Ryan Focus burial mounds, 175
Farmer's Creek Rock Shelter, 58
Fauna: badger, 65; bear, 59, 122, 123, 180; beaver, 65; birds, 59, 75, 77, 121, 122, 180; bison, 51, 180; box turtle, 65; carnivores, 59, 122, 180; cottontail, 65; deer, 59, 65, 70, 72, 75, 78, 121, 122, 172, 174, 180; dog, 65; duck, 65; elk, 77, 121, 122, 172, 174; mammals, 59, 180; fish, 65, 70, 72, 75, 180; fox, 65; goose, 65; grouse, 65; mink, 65; muskrat, 65; raccoon, 122; rodents, 180; shellfish, 59, 180; squirrel, 59; turkey, 59, 65; turtle, 75; wolf, 65; woodchuck, 65
Faunal populations, 180
Faunal varieties, 180
Fayette County, Iowa, 6, 56
Fire, 25, 27, 72, 159
Fireplaces, 62, 68, 70
Fish Farm Mound Group, Allamakee Co., Iowa, 2, 87, 180
Fishing, 188
Flaker. *See* Antler flaker
Flake, flint. *See* Flint flakes
Flesher, 172, 174
Flint chips, 68, 76, 78, 84
Flint objects, 156
Floyd County, Iowa, 5, 91, 105, 170
Food: collecting, 188; supply, 188; surpluses, 188
Foods: corn, 182; fish, 181; mammals, 181; plants, 181, 182; shellfish, 181; wild rice, 181, 182
Forest environment, 180, 188
Forests: coniferous, 178, 179; hardwood, 178, 179; oak-hickory, 178
French Town Mound Group, Clayton Co., Iowa, 21-25, Mound 4, 24, 122, 158; Mound 6, 21; Mound 7, 21; Mound 8, 25, 158, 159, 161, 163
French Town Mound 10, 22, 117, 118, 120, 121, 123, 124, 142, 143-145, 185, 186
Fulton County, Ill., 89; F° 11, 144, 145
Fox Lake Site: artifacts, 177; pottery, 177; projectile points, 177

Geography of sites, 21

Geology: limestone formations, 57, 75
 Gingerstairs Rock Shelter Palisades Kepler State Park, Cedar River, Iowa: No. 1, 111, 113, 115, 116, 118, 125, 165, 166; artifacts, 63, 165; description, 62; No. 2, 111–114, 118, 119, 165, 166; description, 62, 63
 Gingerstairs Shelters: artifacts, 143, 144; artifacts similar to village complexes of effigy mounds, 71
 Glacial Kame, 146; interments, 143, 144; comparison with Illinois Red Ocher mounds, 144
 Gorget: copper, 185; shell, 143; slate, 159; rectangular, 82, 172, 175
 Graham Cave, Missouri, 84, 174, 188
 Grant County, Wisconsin, 173
 Grass, 178; carbonized, 171
 Grave goods, 14, 17, 21, 26, 33, 40, 148, 155, 156, 158–160; copper, 148; elements of prestige in burial mounds, 185, 186; lack of in effigy mounds, 182; Hopewellian, 143; Oneota, 164, 165; pottery, 161; specialization 181, 182; utilitarian, 164
 Grave offerings, 24; amount, 162
 Gravers, 188
 Great Lakes area, red ocher mounds, 144
 Griffin, James B., 2, 17, 171
 Ground and pecked stone artifacts, 118–120; abrader, 60, 64, 82, 166; anvilstone, 61, 62, 64, 82, 119, 165, 166, 172, 173, 175; awl, 82; axe, 66, 82, 119; boatstone, 82; celt, 57, 119; gorget, 82, 172, 175; hammerstone, 59, 60, 62, 64, 82, 119; hematite fragment, 64; hematite lump, 75, 82; mano, 51, 119; mortar fragment, 60; pestle, 60, 119; polished stone, 82; standstone fragment, 82; stone ball, 82
 Gudovissy Mound Group 1, Clayton Co., Iowa, 17–20; Mound 1, 17–19, 157, 158, 161
 Gudovissy Mound Group 2, Clayton Co., Iowa, 17–19; Mound 1, 17; Mound 2, 20, 21; Mound 3, 21; Mound 4, 19; Mound 8, 19; Gudovissy Mound Group 3, 20
 Gunflint, 86
 Guttenberg, Iowa, 19, 21, 181

Habitat sites, 17, 57–83, 86, 87
 Hamilton County, Iowa, 5, 105
 Hammerstones, 41, 62, 64, 71, 72, 82, 87, 119, 153, 160, 162, 165, 166, 169, 173
 Harpers Ferry, Allamakee Co., Iowa, 26, 33, 35, 136, 181
 Harpers Ferry Mound Group, Allamakee Co., Iowa, 11, 27, 111
 Harpers Ferry Mound Group 13, Allamakee Co., Iowa, 27; Mound 2, 27, 158
 Harpers Ferry Valley Mound, Allamakee Co., Iowa, 163; pottery correlation with Nelson Dewey Site, 175
 Harvey's Island Mound Group 2, Clayton Co., Iowa, 19–21; Mound 1, 20, 91, 107; Mound 2, 20, 111, 115, 124, 147, 163; Mound 3, 21, 122, 147; pottery 134
 Hematite, 82, 120, 165, 166, 172
 Hemispheres, copper, 48, 124, 152
 High Bank Site, Crawford Co., Wis., 86, 93, 115, 118
 Highway Thirteen Rock Shelter, Clayton Co., Iowa, 3, 4, 58, 65, 73, 111, 114, 118, 122, 124, 125, 165–167; comparison with Minott's Focus, 169; description, 70, 71; relationship to Minott's Focus, 175; relationship to Wisconsin Effigy Mound Aspect, 169
 Hill, A. J., 1
 Hill Mound Group, Allamakee Co., Iowa, 33; Mound 1, 33; Mound 2, 33; Mound 3, 33, 158; Mound 4, 33, 158
 Hogback Mound Group, Allamakee Co., Iowa, 53–55; Mound 1, 53–55, 111, 112, 120, 121, 161; Mound 3, 55, 112, 113, 118, 158
 Hopewell, other mid-western States: Ohio, 185, Illinois, 148, 154, 155, 162, 173, 176, 177; Missouri, 159, 176; Wisconsin, 21, 163
 Hopewell Zoned Incised pottery, 6, 156
 Hopewellian burial; mounds, 146–161, 177; practices, 146–148, 154, 163, 176
 Hopewellian complexes, northeastern Iowa: comparison with Davenport area, 163; comparison with Missouri, 159; relation to Lane Farms, 6
 Hopewellian conical mounds, Jackson Co., Iowa, 175
 Hopewellian mounds, Iowa: 2; affiliation with Nickerson Focus, 148; affiliation with Trempealeau Focus, 148; artifacts denoting prestige, 185, 186; ceremonial life, 185; comparison with surrounding areas, 175; cooperation in mound building, 185; elaborate burial and religious activity, 185; grave goods, 21, 146–157, 185, 186; no grave goods, 157–161; rock structures, and alignments, 147, 157
 Hopewellian mounds, other mid-western States: Ohio, 185; Illinois, 148, 154, 155, 162,

173, 176, 177, 185; Missouri, 159, 176; Wisconsin, 21, 163
Hopewellian occupation, objects indicating, 172, 190, 191; pipe, 51, 165; pottery, 155, 170, 171, 174; projectile point type, 36; scraper, 172; spoons, 162, 172
Hopewellian remains: Allamakee County, 182; Jackson County, 182; scarcity in north, 182; economic reason for, 182
Hopewellian Sites, 14, 163, 171-173, 176, 177
Hopewellian villages, scarcity of in north, 182; economic reason for, 182
Hornstone, 186
Houlihan Mound, Allamakee Co., Iowa, 27, 31, 32, 113, 114, 124, 142-145
Hunters and collectors, 183
Hunting, 181-183, 185, 188; techniques, 183

Illinois: chronology, 154, 155, 168, 187; Hopewell, 148, 154, 155, 173, 176, 177, 185; mounds, 29, 143, 144, 148, 149, 154-156; pottery, 84, 86, 90, 92-94, 97, 98, 103, 105-107, 109, 131, 135, 143, 146, 156, 159, 163, 164, 171, 173; Red Ocher, 29, 143, 144, 146, relation to Davenport Iowa area, 156, 177; relation to Jackson County, Iowa, 173, 174; sites, 89, 91, 142, 155; turkey tail blades, 22; Woodland occupation, 171

Illinois River Valley: chronology, 140, 164; Hopewell, 154, 155; mound construction comparisons, 156; pottery chronology, 140; pottery comparisons, 129, 171; trait comparisons with Iowa, 149, 177

Iowa Archaeological Survey, 2, 5, 6, 12, 17, 34, 39, 40, 48, 53, 55, 56-59, 62, 68, 73, 139, 161, 164, 167

Iowa: archeological sites by counties, 4; chronology, 168; collections, 6; cultural developments, 177; Driftless: Area, 185; geographic areas of study, 5, 6; Hopewell, 156, 157, 171, 176, 185; mounds, 11-57, 141-146, 148, 154-157, 171, 175-177, 185; pottery, 17-20, 25, 27, 29-31, 37, 40-42, 44, 47-50, 55, 56, 59, 62, 63, 66, 71-73, 75-78, 81-87, 89-110, 125, 127, 129, 131, 132, 134-136, 138-141, 148, 151, 152, 156, 159-175, 177, 188; prehistory, 2, 3, 23, 185-189; sites, 57-87

Iowa Effigy Mound: coefficients of association, 154; comparison of Middle Western burial complexes, 150-153

Iowa Effigy Mound Aspect, 169, 170, 188
Iowa, northeastern: Archaic occupation, 87; archeological collections, 6; artifact types, 89-125; comparative analysis, burial complexes, 141, 159; comparative analysis, mound, rock shelter, and village sites, 127-177; climate, 180; cultural foci, 1, 167; cultural lag, 177; cultural level, 1, 177-189; cultural speculations, 180-185; counties, 5, 6; Early Man occupation, 87; ecology, 1, 178-181; fauna, 180-181; flora, 178; forests, 178, 179; habitation sites, 57-87; mounds, 11-57, 141, 142, 144, 146, 148, 154-157, 171, 175-177, 185; mounds, effigy, 33, 34, 50-154, 164, 188; mounds, Hopewellian, 156, 157, 171, 176, 177; mounds, Red Ocher 142-146; physiographic features, 1, 178, 179; plant ecology, 178, 179; populations, 5, 177, 182, 183; pottery, 89-110; pottery chronology, 171; pottery comparison and seriation, 127-141; projectile points, 110-116; prehistory, 2, 3, 23, 185-189; rock shelters, 165-175; shell artifacts, 123, 124; social organization, 188; soils, 179, 180; stone artifacts, 123, 124; stone artifact comparisons, 169; topography, 178, 179; trait affiliations, 148-154, 168; trait comparisons, burial sites, 159; trade, 186, 188; travel routes, 178, 186; village sites, 165-175; Woodland culture, 2, 178-189; Woodland horizons, 57; Woodland occupation, analysis through pottery traits, 174, 175; Woodland populations, 182, 183; Woodland sites, 11-87

Iowa Red Ocher mounds, 142-146

Jackson County, Iowa, 5, 57, 76, 78, 81-83, 86, 91, 100, 105, 131, 164, 167, 170-172, 174, 175, 177, 181, 188; ecology, 179; geographic features, 179; middle Hopewellian remains compared with Allamakee County, 182; Mississippi River influence, 178; mounds, 12-17; mound goods, 156; pottery types compared with Illinois, 86; proximity to Illinois cultural developments, 177; rock shelters, 91; rock shelter chronology, 182; rock shelter late Woodland complexes, 182; sites, 174

Jeffrey Edwards Creek Rock Shelter, Iowa, 58, 84; artifacts, 173; occupation, 173; pottery type, 173; projectile points, 173

- Kansas City Focus, Missouri, 150–154, 159, 176
- Keyes, Charles R., 2, 3, 5, 7, 12, 58, 59, 63–66, 78, 90, 105, 124, 142, 168
- Knives, 51, 56, 66, 76, 156, 185; flake, 5, 59, 60, 62–64, 69, 71, 82, 84, 86, 87, 117, 118, 166, 173; flat-based, 48, 53, 60, 69, 116, 166; lanceolate, 64, 116, 117, 165, 188; leaf-shaped, 76; oval, 64, 116, 165; ovoid, 48, 53, 63, 86, 87, 116, 117, 169; ovoid, pointed at both ends, 22, 23, 67; round-based, 66, 69, 82, 116, 166, 171; triangular, 48, 53, 60
- Knife River Flint, Dunn Co., N. D., 37, 186
- Knight Mound, Gremore Lake, Crawford Co., Wis.: 57; celts, 57, 119; Knife, 86; point, 57, 86, 111, 113, 115, 116; pottery 86; red ochre, 57, 142, 143; scraper, 86
- Kolterman Bird Effigy Mound, Wis.: projectile points, 168; Mound 18, radiocarbon dating, 176
- Lake Michigan pottery types, 110
- Lane Farm, Allamakee Co., Iowa, 2
- Lane Farm Complex: coefficients of association with other foci, 154; comparison with Middle Western burial complexes, 150–153; correlation to Hopewell, 6, 162, 163; correlation to late Middle Woodland, 176; correlation to Late Woodland, 6, 176
- Lane Farm Mound Group, Allamakee Co., Iowa, 39–48; Mound 1, 40, 111, 160; Mound 2, 40, 41, 160; Mound 3, 41, 115, 125, 160; Mound 7, 48, 161; Mound 10, 48, 161; Mound 11, 41, 119, 124, 160; Mound 12, 41–43, 160, 162; Mound 13, 43, 44, 160, 162; Mound 16, 44–48, 111, 114, 115, 124, 125, 160; Mound 17, 48, 160
- Lane Farm Mounds: association with simple conical mounds, 165; bison scapula, 41; burial orientation, 41; burial type, 160, 161, 164; burials, 40–44, 46–48; coefficients of association with eleven Middle Western burial complexes, 154; charcoal, 41; chronology, 41, 162, 163; circular enclosure, 39; clamshell in pots, 162; comparison with Allamakee Focus, 163; comparison with Owasco Aspect of New York State, 168; construction traits, 163, 164; copper beads, 47, 162; copper celt, 41; correlation with village complexes, 175; features, 160, 161; grave goods, 55, 160, 161; Iowa Effigy Mound Aspect, 162; mortuary customs, 163; mussel shell, 41, 42; Oneota burials, 41; Oneota pottery, 42, 48; origins, 162, 163; pottery, 6, 30, 40, 41–44, 47, 132–136, 154, 162–164; projectile points, 40, 162; relation to Hopewell, 162; relation to Houlihan, 162; relation to McGregor Focus, 176; relation to Weaver Focus, 162; rock piles, 42, 46, 48; stone altar, 41; structure, 163; trait relationship with effigy mounds and Allamakee Focus, 163, 164; traits associated with, 163; transitional with effigy mound types, 187
- Lanesville Hopewell Mound, 57, 114, 115, 123, 124, 125, 187
- Lapham, I. A., 1
- Late Hopewell of Illinois, 177
- Late Woodland ceramic styles, 174, 175
- Late Woodland mounds, ceremonial life, 185
- Lee Mill Cave, 177
- Levsen Rock Shelter, Canton, Jackson Co., Iowa: 76–81; animal bones, 180; artifacts, 58, 77, 78, 81, 82, 170–172; bone awls, 121; bone tools, 172; chronology, 171; copper awls, 125; comparison with Hopewellian sites of Illinois, 171; comparison with Mouse Hollow Rock Shelter, 172; cut shell fragment, 124; Middle Woodland developments 187; occupations, 170, 171; polished antler cylinder, 123; polished bone fragment, 122; pottery, 73, 90, 93, 105–107, 136, 170, 171; pottery pipes, 125; points, 173; projectile points, 111–116, 171; stratigraphy, 58; sandstone tablet, 120; survey, 58
- Lewis, T.H., 1
- Linn County, Iowa, 5, 6; chronology, 177, 182, 183; comparison of points with other counties, 174; cultural differences with other counties, 167; ecology, 179; geographic features, 179; Late Woodland complexes, 182; materials resembling Jackson County, 86; pottery, 94, 103, 105; rock shelters, 58, 61, 62, 63, 73, 167
- Lindley, Clarence, 2
- Loseke Creek Focus, 169; comparison with Minott's Focus, 169, 170
- Logs, burned, 41, 55, 56, 158
- Luth Mound Group, Harpers Ferry, Allamakee Co., Iowa, 35–37; Mound 1, 35, 123, 147; Mound 2, 36, 115, 147; Mound 3, 36, 37, 115, 117, 125, 147
- Luth Mounds: bear canines, 123; blades, 35, 36; burial type, 147; burials, 35, 36; copper nug-

- get, 125; Hopewellian grave goods, 147; Hopewellian projectile points, 36, 147; pit or rock orientation, 147; points, 36, 37; projectile points, 115; rock structure, 147; rocks in alignment, 35
- Lyle Bentley, Bluffton, Winneshiek Co., Iowa, 56, 161, 175; burial in, 56; pot in, 56, 57
- McDonald Mound 1, Jo Daviess Co., Illinois, 159
- McGregor Focus: chronology, 157, 187; coefficients of association with other foci, 154; comparison with Hopewell, 155; comparison with Middle Western burial complexes, 150–153; correlation with Allamakee Focus, 176, 187; correlation with effigy mounds of Iowa, 176; correlation with Illinois Weaver Focus, 176; correlation with Lane Farm Mounds, 176; correlation with Ryan Focus, 187; correlation with Trempealeau Focus, 149, 175, 176; dating, 176, 177; Hopewellian traits, 157, 175; Middle Woodland-late Middle Woodland culture, 176; mound construction features, 176, 156, 157; persistence of old burial forms, 187; proximity to simple conical mounds, 165; separation from Nickerson Focus, 157; separation from Trempealeau Focus, 157; simplification of mound construction, 187
- McGregor, Iowa, 11, 86, 87, 163, 178; Early Man points near, 181
- Madison Cord-Imprinted pottery, pottery pipe fragment associated with, 169
- Main Red Paint: burials, 144, 146
- Malone Rock Shelter II: 183
- Mammals. *See* Fauna
- Manning Site, Lansing, Iowa, 119
- Maples Mills, Illinois: burial mounds, 162; complex, 111, 164, 187; Focus, 164, 168, 169; projectile point types, 168; proximity to Middle Mississippian sites, 164; relation to Minott's Focus, 187; sites, 172, 173
- Maquoketa Aspect, 167
- Maquoketa River, Iowa, 76
- Marion Thick pottery, 66, 68, 69, 89; distribution of, 89, 187
- Marquette, Iowa, 188
- Marshall County, Iowa, 5
- Martell Mounds, Allamakee Co., Iowa, 27; Mound 3, 27, 114, 160; Mound 5, 27, 160
- Metal artifacts: awls, 124, 125; beads, 124; celts, 124; ear spoons, 125; hemispheres, 124. *See also* Copper objects
- Middle Mississippi: ceramic styles, 175; culture, 173; sites, 173
- Middle Woodland: ceramic styles, 174; culture, 90; of Illinois, 187; sites, 173; trade relationships, 186
- Midwestern Taxonomic System, 167
- Mill Creek Sites, Iowa, 3
- Mills County, Iowa, 5
- Minnesota, 5, 180; area, 157; southeastern, 103, 177
- Minott's Focus, 165–173; artifacts, 175, chronologically late, in Iowa, 168, 175; comparison with Boone Focus, Missouri, 168; comparison with Effigy Mound Aspect of Wisconsin, 169; comparison with Highway Thirteen Rock Shelter, 169; comparison with Loseke Creek Focus, 169; comparison with Missouri Bluffs, 169; comparison with Owasco Aspect of New York State, 168; comparison with Ralls Focus of Missouri, 168; comparison with Weaver Focus, 168; comparative trait list for, 166; Late Woodland village remains, 175, 182; local variation of Effigy Mound Aspect, 187; pottery, 168, 169, 175; projectile points, 168; related to Maples Mills Complex of Illinois, 187; sites, 175
- Minott's Rock Shelter, Linn Co., Iowa, 58, 63–65, 71, 111, 112, 114–120, 122–124, 166, 167, 172; artifacts, 165; description, 63–65; pottery, 165; single occupation, 165
- Mississippi River, 5, 17, 19, 21, 26, 33, 37, 70–72, 86, 87, 155, 156, 163, 164, 177, 178, 180; island sites in, 181, 188; source of food, 181; trade and travel route, 178
- Mississippi River Valley: agriculture, 181; Archaic sites, 144; Big Lake, Marquette, Iowa, 86; Bluffs, 37; ecology, 180; environment for primitive peoples, 178; fauna, 180–183; flood plain, 178; food plants, 181; geographic features, 179; island sites, 181, 188; mound group mapping, 1, 2; mounds, 12, 57, 154–155; populations, 181; pottery, 163; pottery decoration development, 135, 136; shellfish, 180, 181; soils, 179; terraces, 11, 181, 188
- Missouri, 84, 157, 159; Archaic, 173; chronology, 168; mounds, 154; pottery, 169; Ralls Focus, 168
- Missouri Bluffs pottery, 169
- Missouri River, 135, 169

Mitchell County, Iowa, 91

Mound construction: charcoal lenses, 55; clamshell layers, 14, 150, 156; clay layers, 14, 156; clay over burials and pits, 146, 150, 158; clay-lined basins, 25, 158; excavation in, 25, 28, 29, 31, 32, 41, 46, 51, 53, 55, 56, 159, 160; fill, 14, 20, 22, 24, 26–29, 31, 33–35, 37, 40, 48–50, 52, 55, 142, 143, 163; floor, 12, 17, 22, 26–28, 29, 33, 37, 40, 41, 44, 46, 48, 49, 55, 143, 150, 162; humus removed from floor, 14, 19, 22, 26, 33, 40, 41, 49, 55, 56, 150, 158, 160, 161, 163, 164; log tomb, 150, 155; mortar, 120, 166; pits, 17, 20–22, 25, 27, 28, 34, 39, 43, 44, 48–52, 146–148, 150, 151, 154, 155, 158–162, 164; rocks over burials, 24, 33, 35, 148, 156, 158; rock pavement beneath burial, 150; rock strata, 156; rock structures, 146, 147, 156; sand lenses, 32; soil layers, 29, 30, 32, 142; trenches, 150; walls, 12, 26, 27, 33, 39, 158; wood posts, 55, 150, 160, 162; wood roof, 150. *See also* Mound features, Mound dimensions, Mound orientation

Mound features: animal bones, 151; ashes, 158; ash layers, 159, 164; burial layers, 32, 40, 41, 50, 53, 151, 161; charred logs, 41, 55, 56, 158; clamshell cache, 158; clamshell spoons, 162; clamshells, 30, 162, 164; fireplaces, 33, 34, 61; red ocher, 22, 24, 27, 29–31, 142, 143, 151; rock piles, 21, 25–27, 35, 40–43, 46, 48, 53, 55, 72, 158, 164; rocks, 27, 39, 151, 161, 164; rocks in rows, 35, 36, 147, 150; shells, 28, 29, 33, 41; stone altars, 17, 41, 158, 160–162, 164. *See also* Grave goods, Pottery

Mound groups, Allamakee County: Bear Effigy, 33–35; Brazell's Island Mound Group, 33; Harpers Ferry Mound Group, 13, 27; Hill Mound Group, 33; Hogback Mound Group, 53–55; Houlihan Mound Group, 31–32; Lane Farm Mound Group, 39–48; Luth Mound Group, 35–37; Paint Rock Mound Group, 37; Martell Mounds, 27; Mud Hen Joe Mound Group, 26, 27; New Galena Mound Group, 48–53; Ryan Mounds, 27; Slinde Mound Group, 55, 56; Waukon Junction Mound Group, 37–39

Mound Groups, Clayton County: French Town Mound Group, 21–25; Gudovissy Mound Group, 2, 17–19; Harvey's Island Mound Group, 2, 19–21

Mound Groups, Jackson County: Deppe Mound Group, 12; Pleasant Creek Mound

Group, 12–17

Mound and pit orientation, 12, 21, 44, 48, 49, 52, 147, 158

Mound type: chain, 11; conical, 2, 11, 14, 21, 27, 33, 35–57, 39, 40–44, 46–53, 54, 55, 56, 141, 157–159, 161, 164, 165, 176; effigy, 33–35, 37, 141, 150, 161–165, 167–170, 175–177, 182, 187, 188; linear, 21, 33, 37, 39, 176; oval, 27, 31, 32, 150

Mounds, burial, 11–57, 169, 175, 181–183, 187; coefficients of association, 154; comparative analysis, 141; comparative trait list for Middle Western complexes, 150–153

Mounds, conical, with few or no grave goods, 157; traits, 158

Mounds, simple conical, 164, 165; traits, 161

Mounds, distribution of, 4

Mounds, effigy, 33, 34, 150–154, 161–164, 170, 188; traits, 160; village complexes of, 169

Mounds, Hopewellian, 163, 171, 176, 177, 185; with grave goods, 146–157; with no grave goods, 157–161

Mounds, Kansas City area, 148; stone vault, 157

Mounds, Kolterman Effigy, 176; dating of, 176

Mounds, northeastern Iowa, 11–57, 141–146, 148, 149, 154–157, 171, 175–177, 185; coefficients of association with Nickerson Focus, 149; coefficients of association with eleven middlewestern burial complexes, 154; chronology, 149, 156; classification, 149, 154, 155; comparative analysis of burials, 141, 142; comparison of traits with other mounds, 144, 148, 149–153, 168, 181; comparative dating, 155, 156; construction traits shared between Lane Farm mounds, Allamakee Focus, the Effigy mounds, 163, 164; construction traits simplified, 187; groups, 2; history of investigations, 2, relationships, 155; trait similarity with Illinois River mounds, 154, 155; village, mound correlations and chronology, 175–177; with bundle burials, 164; with Hopewellian grave goods, 147; with rock strata, 156; with rock structures, 155. *See also* Conical mounds, Effigy mounds, Hopewellian mounds, Red Ocher mounds

Mounds, Red Ocher, 141–146; trait list, 144, 145

Mounds, soils of, 179. *See also* Soils in mounds

Mounds, Toolesboro, 156

Musket balls, 87

Index

Mouse Hollow Rock Shelter, Emeline, Iowa, 58; anvilstones, 119; antler tip awls, 123; artifacts, 81, 82, 173; awls, 121; axe, 119; celts, 118; comparison with Levsen Shelter, 172; deposits, 81; description, 81–83; drills, 118; hammerstones, 119; knives, 116, 117; occupation, 173; pottery, 90, 136, 141, 173; pottery decoration, 107, 108; projectile points, 111–115, 173; sandstone abraders, 120; scrapers, 118; shell spoons, 124; stone ball, 120; tools, 173

Mud Hen Joe Mound Group, Allamakee Co., Iowa, 26, 27; Mound 1, 26, 118, 161; Mound 2, 26, 158; Mound 4, 26, 27

Nebraska, 163, 168; pottery types, 103

Needles, bone, 17, 172, 174

Nelson Dewey Site, Cassville, Wis., 3, 58, 91, 114, 115, 119, 139, 141, 163, 170, 171, 174, 175, 187; artifacts, 72, 170; correlated with Allamakee Focus, 187; description, 71–73; partial complex, variant of Illinois Weaver Focus, 187; pottery correlated with Allamakee Focus, 175

Netsinker, 56, 120, 161, 164

New Galena Mound Group, 48–53; Mound 1, 48, 49, 116, 124, 147, 148, 154; Mound 2, 49, 161; Mound 3, 49, 123, 147; Mound 4, 49, 50, 158; Mound 8, 50, 161; Mound 15, 50, 118, 161; Mound 16, 51, 119; Mound 18, 51, 158; Mound 23, 51, 119, 120, 161; Mound 27, 51, 52, 120, 147; Mound 28, 52, 123, 147; Mound 30, 52, 53, 113, 157, 158; Mound 32, 53, 161

Nickerson Focus, Ill., 148, 149, 155, 157, 176; comparison with Middle Western burial complexes, 150–153

Nolan Mound C, similarity with Weaver Focus, 154

Ogden-Fettie Focus, Ill.: coefficients of association with other foci, 148, 149, 154; comparison with Iowa mounds, 148, 149; comparison with other Middle Western burial complexes, 150–153; pottery types, 177; relation to Hopewellian classes, 176

Old Copper Complex, Wis., 87, 143, 144, 146, 181, 188

Oneota: artifacts, 183; burials, 41, 70, 175; dependence on agriculture, 183; disturbance, 164, 165; grave goods, 40; in relation to effigy mound development, 170; intrusions, 40, 41, 46, 48, 49, 51, 53; knives, 51, 67; migration,

effect on pottery development, 170; occupation, 39, 40, 41, 67; populations in northeastern Iowa, 183; pits, 50; potsherds, 46, 48; pottery, 40, 49–51, 68, 75, 108; remains, 43, 51, 66; remains contemporaneous with Wisconsin effigy mounds, 188; remains in Upper Iowa River Valley, 181, 183; remains in rock shelters, 181; sites, 48; sites in Upper Mississippi River Valley, 183; social organization, 183; village sites, disturbance of, 183

Orr, Ellison, 2, 3, 6, 7, 12, 14, 17, 19, 22–28, 32, 33, 37, 44–50, 65–75, 86, 142, 183

Owasco Aspect of New York State, 168; comparison with Minott's Focus, 168

Paint Creek, Allamakee Co., Iowa, 37, 73

Paint Rock Mound Group, Allamakee Co., Iowa, 37; Mound 1, 37, 73, 158, 175

Palisades Rock Shelters, Palisades Kepler State Park, Cedar River, Linn Co., Iowa: Rock Shelter IV, 62; Rock Shelter V, 63

Pearls: baroque, 71; in pipe, 156; freshwater, 71

Peckham, Gordon L., 163, 188

Pendants, 124

Picton Site, Trent Waterway, Ontario, Canada, 146

Pine Run Rock Shelter, 58, 112, 113
Pipe type: clay trade, 87; catlinite, 56, 65; effigy, 65, 152, 155, 156; plain platform, 155, 156; platform, 51, 52, 56, 161, 165; pottery elbow, 47, 62, 63, 75, 83, 125, 152, 160, 162, 165, 166, 168, 172–175; stone, 53, 120, 152, 156

Pit type: burial, 17, 20–22, 25, 27, 28, 34, 39, 43, 44, 46, 48–52, 146–148, 157–161, 164; cache, 39, 51, 183; intrusive, 46; oval, 17, 158, 160, 161, 164; rectangular, 21, 52, 147, 158

Plain sites, tools from, 172

Plainview point, 87

Plant cultivation, 182–184

Plant ecology of Mississippi River Valley, 178–180

Plant utilization, 178

Pleasant Creek Mound Group, Jackson Co., Iowa, 12–17; Mound 2, 14, 117, 124, 147, 148, 186; Mound 3, 17; Mound 8, 158

Point chronology, 171; similarity, 174

Point type: Black Sand, 112; Clovis Fluted, 87, 112, 188; Dalton, 112; Early Man, 112, 181; Folsom, 181; Folsom Fluted, 188; Graham Cave Fluted, 188; Plainview, 87, 188; Snyder's

Notched, 36, 41, 115, 162; Waubesa Contracting-stemmed, 27

Points: drill, 23, 35, 53, 171; spear, 35, 53, 87, 185. *See also* Projectile Points

Population: 182–183

Portage Mounds, Jo Daviess Co.: Mound 4, 169; Mound 7, 159; Mound 16, 149

Potsherds, cordmarked, body, 108, 109

Pottawattamie Co., Iowa, 91

Pottery: 17–20, 25, 27, 29–31, 37, 40–42, 44, 47–50, 55, 56, 59, 62, 63, 66, 68, 71–73, 75–78, 81–87, 89–110, 125, 127, 129, 131, 132, 134–136, 138–141, 148, 151, 152, 156, 159–175, 177, 188; chronology, 174, 175; comparisons, 89, 127–141, 148, 154–155, 162–175, 177; in Allamakee County, 167, 173, 175; in Aztalan Site, 83, 173; in Babcock Mound, 154; in Bentley Mound, 160; in Bolling Pasture Site, 84, 173; in Brazell's Island Bear Effigy Mound, 34, 160, 161, 175; in Clay Mills Rock Shelter, 85; in Clayton County, 167, 173, 175; in Crabtown Rock Shelter, 81, 166; in Elephant Site, 66, 68, 69, 73, 139, 174, 175; in Crawford County, Wis., 173; in Floyd County, 170; in Fox Lake Site, 177; in Frenchtown Mounds, 25, 159, 175; in Gingerstairs Rock Shelters, 62, 63, 165, 166; in Grant County, Wis., 173; in Gudovissy Mounds, 17–19; in Harpers Ferry Mounds, 27, 136; in Harpers Ferry Valley Mound, 163, 175; in Harvey's Island Group, 20, 163, 175; in Highway Thirteen Rock Shelter, 163, 166, 167, 175; in Hogback Mound, 55; in Hopewellian sites, 148, 154–156, 171, 174, 177; in Jackson County, 81–85, 131, 170, 173, 174; in Jeffrey Edwards Creek, 84, 173; in Highway Thirteen Rock Shelter, 71; in Lane Farm Site, 41–44, 47, 48, 136, 154, 160–162, 175, 177; in Levens Rock Shelter, 73, 77, 170, 171; in Linn County, 167, 174; in Loseke Creek sites, 170; in Lyle Bentley Mound, 56, 57, 160, 161, 175; in Martell Mounds, 27, 160; in McDonald Mounds, 161; in Minott's Rock Shelter, 64, 165, 166; in miscellaneous habitation sites, 86, 87; in Mouse Hollow Rock Shelter, 81–83, 136, 141, 172, 173; in Nelson Dewey Site, 72, 73, 141, 163, 170, 174, 175; in New Galena Mounds, 148, 154, 161; in Paint Rock Mound, 37; in Portage Mounds, 159; in Prairie du Chien Terrace, 163; in Renner Site, 148, 154; in Ryan Mound, 27, 29, 30; in Sixteen Rock Shelter, 76, 174; in Slinde Mounds, 55, 56, 160, 162; in Sny-Magill Bird Effigy Mound, 160; in Spike Hollow Rock Shelter, 144; in Spring Hollow Rock Shelters, 59, 61, 129, 139, 141, 165, 166, 167; in Sterns Creek, 169; in Waterville Rock Shelter, 75, 174; Old Village Complex, Cahokia, 141; Owasco, New York, 134; progression up Mississippi River Valley, 177; types and wares of Northeastern Iowa, 89–110; transportation of, 177

Pottery objects, miscellaneous, 125. *See also*, Pipes, pottery elbow

Pottery attributes, core: hardness, 84, 89, 90, 92, 93, 95, 97–99, 104, 105; paste, 18, 71, 84, 85, 90, 92, 93, 100, 105–108, 125, 129; texture, 18, 27, 62, 89, 90, 92, 97–99, 102, 104, 105, 129; thickness, 68, 84, 89, 94, 95, 97, 98, 100, 103, 105, 108, 109. *See also* Pottery temper

Pottery attributes, surface: color, 18, 25, 27, 41, 84, 85, 89, 90, 92, 93, 95, 97–99, 102, 104, 105, 108; cord-marked surface, 20, 24, 25, 27, 40, 59, 62, 64, 72, 73, 75, 77, 84, 86, 89–91, 95, 97–99, 101, 102, 104–109, 127, 129, 131, 141, 159, 162, 163, 170, 174, 177; polished surface, 82, 103; smoothed surface, 18, 20, 84, 94, 95, 97–99, 105, 108. *See also* Pottery decoration

Pottery, collared and noded, 82, 83, 85, 170

Pottery decoration: 62, 77; bossing, 77, 94; bossing punched from exterior, 20, 63, 85, 91, 106; bossing punched from interior, 84, 91, 95, 105–107, 131; brushing, 75; brushing over cordmarked surface, 89; brushing over plain surface, 92, 105; incising, 75, 84, 89, 110, 136, 148, 165, 173; incising over cordmarked surface, 20, 25, 84, 85, 89, 90, 91, 95, 98, 105, 106, 177; incising over plain surface, 18, 50, 92, 105, 107, 108; notching inner rim, 71, 92, 106, 108; notching, lip, 48, 49, 57, 71, 75, 94, 102, 104, 107, 108, 131; notching outer rim, 76, 95, 97, 98, 104, 106, 107, 108, 132, 136; notching with cord-wrapped stick, 48, 49, 85, 92, 94, 97, 98, 131; notching with plain stick, punctating, 77, 81, 84, 91, 102, 110, 127, 132, 169, 170, 172; punctating over a cordmarked surface, 84, 86, 89, 91, 104, 106, 159, 170; punctating in bands, 50; punctating in lines, 27, 50, 91, 95, 108; punctating in zones, 49, 50, 71, 84, 91, 95, 101, 106, 107, 110, 174; single cord, 25, 27, 29, 30, 31, 35, 40, 41, 43, 44, 47, 56, 57, 62, 63, 68, 71, 77, 81–83, 85, 90, 99, 101–104, 107, 108, 109, 110, 127, 129, 134–136, 163, 165–167, 169, 170, 177, 188; stamping, cord-wrapped

stick, 20, 37, 49, 66, 71, 73, 77, 94, 95, 98, 105, 106, 132, 136, 148; stamping, dentate rocker, 29, 63, 66, 73, 75, 77, 86, 93, 94, 99, 100, 105-107, 109, 132, 134, 136, 162, 163, 169, 174, 177; stamping ovoid, 63, 93; stamping, plain rocker, 24, 25, 27, 31, 56, 66, 75, 76, 81, 95, 99, 100, 107, 109, 136, 154, 162, 174, 177; zoning, cord-wrapped stick filling 49, 84, 148; zoning, dentate stamp filling, 75, 76, 100, 106, 110, 174

Pottery motifs: 68, 71, 73, 84, 85, 99, 101, 103, 125, 131, 154, 163, 165, 167-169; curvilinear designs, 18, 82, 84, 102, 108, 134, 158; rectilinear designs, 27, 71, 82, 84, 85, 91, 94, 101, 108, 163

Pottery objects, miscellaneous, 125. *See also* Pipes, pottery, elbow

Pottery, plain, 24, 40, 55, 59, 61, 62, 64, 68, 71, 72, 85, 99, 107, 108, 127, 129, 141, 170

Pottery temper: clay, 99; grit, 18, 20, 25, 28, 33, 37, 40, 41-43, 46-49, 53, 55, 68, 72, 82, 84, 85, 89, 90, 92, 93, 95, 97-99, 102, 103, 105, 108, 125, 158; limestone, 49, 50; shell, 59, 81, 108, 129, 166, 173

Pottery type: Black Sand Incised, 81, 89, 127, 129, 140, 166, 171, 173, 174, 187; Dane Incised, 91; Feye Cord-Imprinted, 103, Fettle Incised, 81; Havana Cordmarked, 78, 81, 84-87, 106, 109, 140, 166, 170, 171, 173, 174; Havana Zoned, 77, 78, 81, 87, 106, 109, 140, 166, 170, 171, 175; Hummel Stamped, 109, 174; Kegonsa Stamped, 132; Lane Farm Cord-Imprinted, 21, 28-30, 40, 41, 43, 44, 47, 56, 66, 75, 84, 86, 99-102, 107, 109, 132, 134, 135, 141, 160, 162, 163, 173, 174, 188; Lane Farm Stamped, 26, 27, 43, 48, 66, 68, 69, 75, 76, 81, 161, 166, 169, 174; Levsen Plain, 98; Levsen Punctated, 27, 92, 94-97, 99, 100, 109, 129, 131, 132, 134, 141, 158, 159, 163, 169, 171, 174; Levsen Stamped, 37, 59, 60, 61, 63, 66, 71-73, 81, 84, 92, 94, 97, 98, 109, 110, 129, 131, 132, 134, 139, 140, 154, 158, 165-167, 170, 171, 174; Madison Cord-Imprinted, 26, 34, 35, 48, 56, 57, 59, 60, 61-64, 66, 68, 69, 71-73, 75-78, 81, 86, 87, 99-105, 107, 109, 125, 129, 134-136, 138, 139, 141, 160, 161, 163, 164-166, 168, 169, 171, 174, 175, 188; Maples Mills, 103, 105, 168, 173; Marion Thick, 66, 68, 69, 86, 89, 110, 127, 129, 139, 140, 174, 177, 187; Mill Creek, 75, 174; Minott's Cord-Imprinted, 64, 99, 100, 103-105, 107-110, 138, 141, 166-169, 175;

Minott's Plain, 59, 64, 84, 105, 109, 129, 138, 165, 166, 168, 169; Missouri Bluffs, 169; Morton Incised, 84, 89, 91, 129, 140, 173, 175; Naples Ovoid Stamped, 93, 107, 109; Naples Stamped, 76-78, 81, 84-86, 92-94, 97, 105-107, 109, 110, 131, 132, 140, 166, 171, 174; Neteler Stamped, 77, 81, 105, 109, 140, 171, 174, 175; Neotea, 49-51, 53, 66, 68, 69, 75, 76, 127, 139, 174, 175; Pike Brushed, 92, 129; Ramey Incised, 81, 82, 108, 127, 141, 173, 175; Sister Creeks Punctated, 89, 91, 129; Spring Hollow Brushed, 59, 78, 92, 110, 129, 167; Spring Hollow Cordmarked, 48, 59-62, 66, 69, 71-73, 76-78, 81, 86, 92, 94, 97, 98, 103, 105, 109, 110, 129, 132, 134, 139, 141, 165-168, 170-174; Spring Hollow Incised, 59, 61, 66, 68, 69, 72, 73, 78, 84, 86, 89-92, 94, 109, 129, 130, 131, 139, 140, 141, 159, 165, 166, 169, 170, 173, 174, 177; Spring Hollow Plain, 55, 59, 60, 61, 63, 64, 66, 68, 72, 75-78, 81, 84-86, 92, 94, 97-100, 103, 105, 107, 109, 110, 129, 132, 138, 139, 141, 158, 165-168, 171-174; Steuben Punctated, 107, 109, 131, 132, 171, 175; Weaver Cordmarked, 94, 97, 98, 109, 170; Weaver Plain, 55, 94, 97, 159, 161, 170

Pottery vessel form: 18, 27, 48, 99, 167; base, 18, 20, 25, 48, 55, 71, 85, 89, 91, 92, 95, 97, 98, 100, 103, 105, 148, 169; body, 18, 20, 27, 55, 71, 85, 89, 91, 92, 94, 95, 97, 98, 100, 103, 105, 106, 108, 164; lip, 19, 25, 27, 48, 55, 57, 71, 84, 85, 89, 91, 92, 94, 95, 97-100, 103, 105-108, 148; neck, 18, 48, 90, 169; orifice, 20, 81, 85, 107, 148, 164, 173; rim, 18, 25, 27, 48, 49, 50, 55, 57, 71, 82, 83, 85, 89, 90, 91, 92, 94, 95, 98-100, 102, 103, 105, 106, 107, 148, 163, 164, 168, 187; shoulder, 18, 49, 55, 57, 63, 71, 85, 89, 91, 92, 94, 95, 97, 98, 108, 148, 163

Pottery ware: Havana, 84, 107, 109-110, 129, 131, 132, 134, 136, 140, 163; Lake Michigan, 109-110, 134, 136, 139, 141, 161, 164, 169, 173, 177; Linn, 129, 131, 134, 136, 138, 140, 141, 161; Weaver, 109, 131, 163, 174

Prairie du Chien, Crawford County, Wis., 86, 178, 181; area, 188; mounds, 86, 163; terrace site, 114, 118, 134, 181, 182; village site, 86

Pratt, W. H., 2

Projectile point shape; biconvex blunt, 72; concave-based, 84, 168; corner-notched, 35, 36, 47, 57, 60, 63, 64, 66, 72, 82, 86, 115, 160, 162, 165, 166, 168, 171, 173-175; corner-notched one side only, 82; contracting-

- stemmed, 32, 35, 47, 57, 60, 62, 64, 66, 71–73, 76, 82, 87, 113, 160, 162, 165, 166, 168, 171, 173–175; expanding-stemmed, 35, 60, 61, 66, 71, 82, 86, 161, 162, 170, 171, 174, 175; lanceolate, 66, 82, 84, 87, 171, 173, 174; ovoid, 60, 61, 64, 72, 82, 111, 165, 166, 169, 188; side-notched, 61, 62, 69, 75, 76, 82, 84, 168, 188; stemmed, 168, 177; straight-stemmed, 29, 32, 55, 60, 63, 66, 75, 76, 82, 113, 162, 166, 165, 168; triangular, 40, 47, 49, 51, 53, 59, 60–64, 66, 71, 75, 76, 82, 84, 86, 110, 111, 165, 166, 168, 169, 171, 173, 175, 177
- Projectile point size: large, 32, 36, 57, 60–62, 64, 66, 75, 82, 84, 165, 166, 168, 171, 173, 174, 188; small, 32, 40, 47, 49, 51, 59, 60–63, 66, 71, 75, 76, 82, 84, 86, 115, 165, 166, 169, 171, 173–175
- Projectile points: 29, 32, 35, 36, 40, 47, 49, 51, 53, 55, 57, 59–64, 66, 69, 71–73, 75, 76, 82, 84, 86, 87, 110, 116, 123, 160, 161, 162, 165, 166, 168, 169–171, 173–175, 177, 188
- Radiocarbon dating: Effigy Mounds National Monument, Mound 30, 176; Mound 33, 155, 176, 177, 180; Kolterman Mound 18, 176; Old Copper Complex, 143; Pool Site, Pike Co., Ill., 155; Sny-Magill Mound 43, 176
- Rall's Focus of Missouri, 176; comparison with Allamakee Focus, 168; comparison with Weaver Focus, 168
- Red ocher, 22, 24, 27, 29, 144, 146
- Red Ocher Complex, 171
- Red Ocher mounds, 24, 29, 142–146
- Renner Mounds, Kansas City, Mo., 148, 154
- River terraces: 11, 14, 21, 26–29, 32, 46, 56; acreage of village site on, 181; agricultural location, 182; occupation of, 188; Oneota village on, 183
- Rock crevices, 70, 71
- Rock shelter features: animal bones, 65, 180; artifacts, 57, 59–73, 75–78, 81–83; bird bones, 59, 75; bone objects, 59–61, 64, 75, 76, 83; burial sites, 65, 67, 70, 71; burned rocks, 62, 68, 70, 72, 73, 76; chipped stone, 59–64, 66, 68–73, 75, 76, 78, 82, 84; fireplaces, 61, 68, 70; fish bones, 65, 70, 72, 73; ground and pecked stone, 59–62, 64, 66, 75, 82; human bones, 65, 67, 70, 71, 84; mammal bones, 59, 70, 75; midden debris, 62, 64, 70, 78; pottery, 59–66, 68, 69, 71–73, 75–78, 81–86, 129, 131, 134, 139–141; projectile points, 59–64, 66, 69, 72, 73, 75, 76, 82, 84, 188; split and burned bones, 62, 65, 76, 78, 81, 84; shell objects, 60, 64, 83; shells, 59, 65, 75; turtle bones, 75; workshop debris, 61, 62, 64, 65, 72, 81, 84, 86
- Rock shelter occupation; single cultural unit, 62, 65, 70, 78, 83, 165; multiple unit, 76, 77, 81, 83
- Rock shelters: analysis, 165–175; campsites for Woodland peoples, 61, 181, 186; distribution, 181; excavations, 57–65, 70–71, 73–85; Oneota occupation, 183; unnamed, 84, 177; seasonal occupation, 183, 188
- Rock structures: associated with Weaver Focus, 154; associated with Hopewell, 154, 155
- Rock type in artifacts: catlinite, 51, 56, 65; chalcedony, 36, 48, 115, 147, 186; flint, 14, 26, 36, 37, 40, 41, 46, 49, 51, 61, 62, 72, 78, 84, 115, 117–119, 145, 148, 152, 156, 186; gabbro, 119; greenstone, 23; hematite, 75, 120, 145, 166; hornstone, 186; limestone, 24, 53, 57, 119, 120; quartzite, 29, 35, 72, 87, 115, 117, 119; sandstone, 51, 60, 64, 83, 119, 120, 165, 166
- Rocks, burned, 27, 35, 51, 53, 61, 68, 70, 72, 73, 76, 156, 159
- Rogers Site, Cedar County, Iowa, 90, 91
- Root River Valley, 177
- Ryan Focus: burial mounds, 175; chronology, 187; dating, 177; Early Woodland culture, 176; persistence of old burial forms, 187; Red Ocher Complex of northeastern Iowa, 146; relation to Red Ocher mounds, of Illinois, 187
- Ryan Mounds, Allamakee Co., Iowa, 27–31; Mound 1, 27, 142, 143; Mound 2, 27–30, 113, 117, 142–145; Mound 3, 29, 158; Mound 4, 29–31, 125, 142, 144, 145
- Sagers, Paul, 76–78, 83–85
- Scalp Creek Site, South Dakota, 169, 170
- Scapula, bison, 41, 42
- Scholtes, H. Wayne, 179, 180
- Schwert Mound 7, Wisconsin: Hopewellian remains, 19; pots, 18, 19
- Scrapers, 26, 35, 51, 53, 55, 64, 66, 76, 77, 82–84, 87, 118, 153, 160, 162, 164–169, 171–174, 188
- Shell: conch, 24, 124, 144, 156; deposits of, 17; freshwater mussel, 12, 14, 17, 21, 22, 24, 28, 29, 30, 33, 41, 42, 44, 46, 51, 55, 59, 64, 65, 75,

- 83, 123, 124, 156, 158, 160, 162, 164, 173-175, 166, 180; sea, 156; snail, 83
- Shell artifacts: conch columella beads, 24, 124, 144-146, 153; cut shell fragments, 124; cut shell gorgets, 144; pearl beads, 124, 147, 153, 166; shell cups, 153, 156; shell spoons, 83, 123, 145, 172-174, 175
- Sixteen Rock Shelter, Yellow River, Allamakee Co., Iowa, 75, 76, 111-114, 116, 118, 121-123, 174, 181
- Skeletons, 12, 14, 21-23, 32, 33, 36, 37, 40-43, 48, 49, 67, 154, 155, 159; adult, 51, 148; child, 51, 70, 148
- Skulls, 12, 17, 21, 23, 24, 33, 36, 37, 40, 43, 48, 51-53, 55, 155; adult, 33, 36; child, 25, 33, 70, 71; disc, 156; orientation, 49, 52
- Slinde Mound Group, Allamakee Co., Iowa 55, 56; Mound 5, 55; Mound 6, 55, 56, 113, 160, 162; Mound 7, 56, 116, 158; Mound 8, 56, 158; Mound 12, 160; Mound 13, 56, 120, 161
- Smoothed pebble, 82, 172
- Snake, copper, 51
- Sny-Magill Bird Effigy, 160
- Sny-Magill Mound Group, 11, 132; Mound 3, 117; Mound 43, 115, 117, 142-145, 176, 185
- Social organization, 185, 186, 188
- Soil: in mounds, 179; morphology, 179, 180; of Allamakee County, 179; under mounds, 180; weathering, 180
- Soils, 179; ash, 76, 77; black earth, 14, 24, 28, 31, 37, 39, 50, 53; clay, 25, 145, 150; clay (black), 32, 146; clay (yellow), 14, 22, 33; clay (mucky), 146; clay (purple), 14, 146; gravel, 29, 32, 52, 53; gray earth, 37, 70; loess, 37; red ocher, 27, 30-32; sand, 14, 28, 29, 32, 52, 53, 70, 145, 150, 188; sand (black), 31; sand (yellow), 28, 30, 32
- Southern Illinois quarries, 186
- Southern Minnesota Aspect, 177
- Southern Minnesota effigy mounds, 177
- Spear points, copper, 87, 156
- Spike Hollow Rock Shelter, 141; Oneota remains, 181
- Spokeshaves, 59, 60, 76, 118, 166
- Spoons, shell, 83, 123, 145, 172-174
- Spring Hollow Rock Shelters, Palisades-Kepler State Park, Linn Co., Iowa: No. 1, 58-61, 73, 91, 92, 98, 107, 108, 111, 117-119, 123, 129, 139-141, 165, 167; No. 2, 60, 61, 111, 112, 114-121, 123, 124, 165, 166; No. 3, 61, 62, 117-119, 165-167
- Staffelbach Mound, Iowa, 159
- Starr, Frederick, 2
- Starved Rock, Illinois, 112
- State Historical Society, Iowa, 2, 65
- Sterns Creek, 169
- Stone, altars, 17, 41, 158, 160-162, 164; ball 67, 82, 173; cone-shaped catlinite, 51; cubical black stone, 51; materials, 69, 70; ornaments, 152; pipes, 156; polished stones, 172; structures, 157, 161, 162; tools, 172, 175
- Stone, chipped. *See* Chipped Stone
- Stone, ground and pecked. *See* Ground and Pecked Stone
- Tablets, sandstone, 83, 120, 172, 173
- Teeth: bear canine, 21, 24, 35, 49, 52, 56, 57, 147, 152, 156, 165, 166, 191; rodent incisors, 156
- Terraces, *See* River terraces
- Thomas, Cyrus, 2, 86
- Tiffany, A. S., 2, 159
- Toolesboro Mounds, Toolesboro, Iowa, 156
- Tools: antler, 59-61, 64, 75-77, 83, 123, 165, 166, 174; 175; bone, 24, 53, 61, 75-77, 83, 120-123, 152, 153, 172-175, 180; copper, 29, 30, 32, 124, 152, 156, 175; stone, 23, 61, 65, 172, 173, 175, 188
- Trade relationships, 186, 188
- Trait comparisons: burial mounds, 141-165; conical mounds with few or no grave goods, 157-161; effigy mounds and related tumuli, 161-164; Hopewellian mounds with grave goods, 146-157; Lane Farm mounds, 162, 163; red ocher mounds, 142-146; rock shelters and village site, 165-175; simple conical mounds, 164, 165
- Trait correlations, mound/village, 175-177
- Trempealeau Focus, Wisconsin: coefficients of association with other foci, 148, 149, 154; comparison with Iowa mounds, 148, 149; comparison with other Middle Western burial complexes, 150-153; relation to Hopewellian classes, 157, 175, 176
- Tubes: bone, 122; copper, 51
- Turkey River, Clayton County, Iowa, 72
- Turtle plastron square, 166, 169
- Upper Iowa River Valley: ecology, 179; geo-

- graphic features, 179; mounds, 12, 48, 53, 55; Oneota, 183; sites, 65, 181, 183
- Upper Mississippi Phase, relation to Effigy Mound, 170
- Upper Mississippi River Valley: artifacts, 172; ceramic styles, 175; effigy mound dates, 176; mounds, 155, 176; Oneota, 183; population increments, 183; pottery decoration, 31; sites, 172, 183
- U. S., eastern: bead type, 144; chronology, 168, 186; earth enclosures in mounds, 39; populations in post-European contact times, 183; pottery decoration, 136; sequence of plant cultivation, 183; warfare, 185
- Valley Mound, Allamakee Co., Iowa, 27, 111, 158, 159
- Verne Hute Rock Shelter, 58, 85, 93, 107, 108
- Village complexes, partial, 71, 175; relation to effigy mounds, 6, 169
- Village/mound correlations and chronology, 175-177
- Village site features: copper artifacts, 87; pottery, 86, 87; projectile points, 86, 87; spear points, 87; tools, 86
- Village sites, 17, 57, 71, 163, 187; analysis of, 165-175; Allamakee Focus, 170; Hopewellian, 148; islands, 181; Oneota, 39; open river terraces, 58
- Washington County, Iowa, 91, 105
- Waterville Rock Shelter, Paint Creek, Allamakee Co., Iowa, 73-76, 111, 112, 113, 115, 117, 118, 121, 123, 134; artifact inventory, 75; description, 73, 75; occupation of, 174; Oneota remains, 181; pottery, 174; projectile points, 174, tools, 174
- Waukon Junction Mound Group, Allamakee Co., Iowa, 37-39; Mound 4, 37-39; 157, 158, 159
- Weaver Focus, Ill., 157, 159, 163, 162-164, 170, 177; coefficients of association, 154; compared with Boone Focus, 168; compared with Middle Western Complexes, 150; compared with Ralls Focus, 168
- Webster County, Iowa, 5, 105
- Wedel, Waldo R., 148, 149, 154
- Whetstone, 120, 156
- Wild Rice, 178, 182, 185, 188
- Winneshiek County, Iowa, 6, 87, 113, 115, 116, 170, 188
- Wire, copper, 53
- Wisconsin Effigy Mound: bundle burials in, 164; coefficients of association, 154; compared with Iowa effigy mounds, 164; compared with Middle Western burial complexes, 150-153; contemporaneity with Oneota Aspect, 188; relation to Highway Thirteen Rock Shelter, 169
- Wisconsin glaciation period, 180
- Wisconsin Hopewellian sites, 163
- Wisconsin mound sites, 1, 11, 39, 94, 119, 122, 159, 162, 163
- Wisconsin pottery, 73, 91, 97, 103, 109, 132, 164, 167, 169, 173, 175
- Wisconsin, southwestern, pottery associations and chronology, 177
- Wisconsin, western, culture correlated with Davenport mounds, 156
- Woodland Archeology: importance of large village sites on open terraces in, 58; importance of rock shelters in, 57, 58
- Woodland ceramic development trends, 170
- Woodland culture, 2, 178-189; complexes, 187, 189; divisions, 186-188; framework, 186, 187; Hopewellian phase, 2; span 188; theoretical reconstruction, 178-189
- Woodland peoples: burial practices, 185; gardening, 185; hunting and food collecting, 185; Mississippi River habitat, 185; mound builders, 185; religion, 185; rock shelter use, 186; terrace occupation, 185
- Woodland populations, 182, 183
- Woodland pottery types, 174, 175
- Woodland village complexes, 165-175
- Workshop debris, 62, 72, 81, 84, 86, 188
- Wray, Donald E., 154, 155, 159
- Wray's Hopewell Mound Class, 154, 155



I 29.59:
15

Logan, W. D.
Woodland complexes in north-
eastern Iowa.

I 29.59:
15

LUCY SCRIBNER LIBRARY
SKIDMORE COLLEGE
SARATOGA SPRINGS, N. Y.

