

AMERICAN ANTIQUITY

A Quarterly Review of American Archaeology

ROBERT E. BELL, *Editor*

FRANCIS A. RIDDELL, ARTHUR H. ROHN, AND DOUGLAS W. SCHWARTZ,
Associate Editors

BETTYE J. BROYLES, RIPLEY P. BULLEN, JOHN M. CAMPBELL, JOHN L. COT-
TER, WILBUR DAVIS, WOLFGANG HABERLAND, ALEXANDER J. LINDSAY, JR.,
GARETH W. LOWE, RONALD J. MASON, BETTY J. MEGGERS, ROBERT W.
NEUMAN, WILLIAM H. OLSEN, THOMAS C. PATTERSON, STUART D. SCOTT,
RODERICK SPRAGUE AND JAMES V. WRIGHT, *Assistant Editors for Current
Research*

VIRGINIA BELL, *Editorial Assistant*

VOLUME 34

Published by

THE SOCIETY FOR AMERICAN ARCHAEOLOGY

at the University of Utah Printing Service

Salt Lake City

1969

CONTENTS OF VOLUME 34

ARTICLES

	Page
Identification of the Sources of Hopewellian Obsidian in the Middle West	1
JAMES B. GRIFFIN, A. A. GORDUS, AND G. A. WRIGHT	
Testing Stratigraphy and Artifact Reuse Through Obsidian Hydration	
Dating	15
JOSEPH W. MICHELS	
Apache Archaeology in Northeastern New Mexico	23
JAMES W. GUNNERSON	
Red Mountain: An Early Pioneer Period Hohokam Site in the Salt River Valley of Central Arizona	40
DONALD H. MORRIS	
The Archaeological Record of Chili Peppers (<i>Capsicum</i> spp.) and the Sequence of Plant Domestication in Peru	54
BARBARA PICKERSGILL	
An Early Man Site in the San Joaquin Valley, California	121
FRANCIS A. RIDDELL AND WILLIAM H. OLSEN	
Ceramic Sequence and Settlement Location in Pre-Hispanic Tlaxacala	131
DEAN R. SNOW	
Approaches to Faunal Analysis in Archaeology	146
PATRICIA DALY	
Gyratory Crushers of the Sierra Pinacate, Sonora	154
JULIAN D. HAYDEN	
Change in Preceramic Twined Textiles from the Central Peruvian Coast .	
M. EDWARD MOSELEY AND LINDA K. BARRETT	162
Engineering Principles and the Study of Prehistoric Structures: A Substantive Example	166
JAMES A. MARSHALL	
Columbia Plateau Prehistory: Cultural Development and Impinging Influences	249
DAVID L. BROWMAN AND DAVID A. MUNSELL	
Close-Proximity Analysis: A Rapid Method for the Ordering of Archaeological Materials	265
COLIN RENFREW AND GENE STERUD	
The Importance of Both Analytic and Taxonomic Classification in the Type-Variety System	278
JEREMY A. SABLOFF AND ROBERT E. SMITH	
Ethnohistory and Archaeology: Post-Conquest Aztec Sites	286
THOMAS H. CHARLTON	
Laurel and North Bay: Diffusional Networks in the Upper Great Lakes	295
RONALD J. MASON	
A New Research Method for Economic Prehistorians ...	303
ANDREW SAXON AND CHARLES HIGHAM	
Photoarchaeological Analysis of Potomac River Fish Traps	312
CARL H. STRANDBERG AND RAY TOMLINSON	
The Sunken Gardens of the Peruvian Coast	320
JOHN HOWLAND ROWE	
Middle Mississippian Agriculture Fields	365
MELVIN L. FOWLER	
Science, Theory, and Reality in the "New Archaeology"	376
DONN T. BAYARD	
Ground Slates: East and West	385
WILLIAM A. RITCHIE	
Great Basin Hunting Patterns: A Quantitative Method for Treating Faunal Remains	392
DAVID H. THOMAS	
The Castanheira Site: New Evidence on the Antiquity and History of the Ananatuba Phase (Marajó Island, Brazil)	402
MARIO FERREIRA SIMÕES	
The Chronological Position of the Cambered Jar at Cahokia and Its Implications	411
PATRICIA J. O'BRIEN	
Canavalia Beans in American Prehistory	417
JONATHAN SAUER AND LAWRENCE KAPLAN	
Geology and Age of the Early Man Site at Taber, Alberta	425
A. MACS. STALKER	
A New Population Estimate for Tikal, Guatemala	429
WILLIAM A. HAVILAND	
Dzibilchaltún, Yucatán, Mexico: Structures 384, 385, and 386: A Preliminary Interpretation	434
W. J. FOLAN	

OBITUARIES

	Page
JAMES ALFRED FORD, 1911-1968 GORDON R. WILLEY AND STEPHEN WILLIAMS	62
STANLEY V. LONG, 1937-1967 CLEMENT W. MEIGHAN	72
CHARLES H. NASH, 1908-1968 CHARLES H. MCNUTT	172
ADÁN EDUARDO TREGANZA, 1916-1968 W. D. HOHENTHAL	462
RICHARD G. MORGAN, 1903-1968 JAMES B. GRIFFIN	467
JEAN MCWHIRT PINKLEY, 1910-1969 CHESTER A. THOMAS	471

FACTS AND COMMENTS

Texcoco Fabric-Marked Pottery, <i>Tlatales</i> , and Salt-Making THOMAS H. CHARLTON	73
Ridged Fields in the Río Guayas Valley, Ecuador JAMES J. PARSONS	76
Identity of Archaeological Grain Amaranths from the Valley of Tehuacán, Puebla, Mexico JONATHAN D. SAUER	80
Comments on the Associations of Archaeological Materials and Extinct Fauna in the Valsequillo Region, Puebla, Mexico CYNTHIA IRWIN-WILLIAMS	82
Comments on Binford's "Smudge Pits and Hide Smoking: The Use of Analogy in Archaeological Reasoning" PATRICK J. MUNSON	83
"Hit-and-Run" Archaeology: A Reply to Euler STEPHEN C. JETT	85
Preliminary Report of a Stratified Post-Folsom Sequence at Blackwater Draw Locality No. 1 GEORGE A. AGOGINO AND IRWIN ROVNER	175
On the Identification of Pre-Hispanic Obsidian Mines in Southern Hidalgo THOMAS H. CHARLTON	176
Pleistocene Faunal Remains Associated with Carbonaceous Material FRANCIS A. RIDDELL	177
Archaeological Use of the Universal Transverse Mercator Grid ROBERT L. EDWARDS	180
Sacalum, Yucatán: A Pre-Hispanic and Contemporary Source of Attapulgitite W. J. FOLAN	182
Human Bone Artifacts from Southern Texas THOMAS ROY HESTER	326
Plant Remains in Some Coprolites from Utah ERIC O. CALLEN AND PAUL S. MARTIN	329
Further Comments on Emery and Edwards' "Archaeological Potential of the Atlantic Shelf" RIPLEY P. BULLEN	331
Atlatl Spurs from California FRANCIS A. RIDDELL AND DONALD F. MCGEEIN	474
An Olmec Mask from the Maya Lowlands J. ERIC S. THOMPSON	478
Changing Site Designations: A Reply MARSHALL MCKUSICK	480
Matching Polychrome Sets from Acatlán, Puebla CHRISTOPHER L. MOSER	480
A Possible Non-Cultural Bias in Lithic Debris LESLIE LISCHKA	483
Assessing the Archaeological Significance of <i>Mahamaes</i> M. E. MOSELEY	485

REVIEWS

DIMBLEBY: Plants and Archaeology TOWLE	88
BLACK: Angel Site. An Archaeological, Historical, and Ethnological Study MCGREGOR	88
DIBBLE AND LORRAIN: Bonfire Shelter: A Stratified Bison Kill Site, Val Verde County, Texas FORBIS	90
LISTER AND LISTER: Earl Morris and Southwestern Archaeology JUDD	91
SMITH AND OTHERS: The Excavation of Hawikuh by Frederick Webb Hodge REED	92
MARTIN, LONGACRE, AND HILL: Chapters in the Prehistory of Eastern Arizona, III BEESON	94
TRIMBORN: Archäologische Studien in den Kordilleren Boliviens, III WALLACE	94
BULLOCK: The Restoration Manual, An illustrated guide to the preservation and restoration of old buildings LARRABEE	95

	Page
SHIPPEE: The Archaeology of Arnold Research Cave AND HENNING: Fabrics and Related Materials from Arnold- Research Cave	HEROLD 96
PARSONS: Bilbao, Guatemala: An Archaeological Study of the Pacific Coast Cotzumalhuapa Region	HAVILAND 96
DISSSELHOFF: Daily Life in Ancient Peru (translated by JAFFA)	EVANS 97
SILVERBERG: Mound Builders of Ancient America: The Archaeology of a Myth	SMITH 184
UBBELOHDE-DOERING: On the Royal Highways of the Inca	LATHRAP 184
DAY: Quipus and Witches' Knots: The Role of the Knot in Primitive and Ancient Cultures	MACKEY 185
LEE: Fort Chimo and Payne Lake, Ungava Archaeology, 1965	WALLACE 185
BROWN (EDITOR): Hopewell and Woodland Site Archaeology in Illinois	FITTING 187
WILLIAMS (EDITOR): The Waring Papers, The Collected Works of Antonio J. Waring, Jr.	SEARS 187
SMITH AND JOHNSON: The Two Teeth Site	LEHMER 190
DUNN: American Indian Painting of the Southwest and Plains Areas	HOWARD 191
SHARROCK: 1962 Excavations, Glen Canyon Area	WHEAT 192
RACKERBY: The Archaeological Salvage of Two San Francisco Bay Shellmounds AND WHELAN: A Partial Faunal Analysis of ALA-12 and 13, Two San Francisco Bay Shellmounds	WARREN 193
OSBORNE: Archaeological Tests in the Lower Grand Coulee	CALDWELL 193
GRAHAM: Archaeological Explorations in El Peten, Guatemala	ANDREWS 194
COE: The Maya	BERLIN 194
RILEY AND TAYLOR (EDITORS): American Historical Anthropology (Essays in Honor of Leslie Spier)	SPAULDING 195
WHITE: An Early Historic Niagara Frontier Iroquois Cemetery in Erie County, New York	DINCAUZE 196
MCNUTT AND GRAHAM: Archeological Investigations at Kentucky Lake Tennessee, 1965	ROLINGSON 197
Book Notices	ROHN 197
MAYER-OAKES (EDITOR): Life, Land and Water	WILMSEN 333
FITTING, HALSEY, AND WOBST: Contributions to Michigan Archaeology	MUNSON 334
NASH: Residence Mounds: An Intermediate Middle-Mississippian Settlement Pattern	MARSHALL 335
SMITH: Big Bend Historic Sites	SMITH 335
SWANSON (EDITOR): Utaztekan Prehistory	EZELL 336
BICE: An Early Basketmaker Campsite	LINDSAY 337
MORATTO AND KING: Archaeology of the Buchanan Reservoir Region, Madera County, California	GREENWOOD 337
OLSEN AND PAYEN: Archeology of the Little Panoche Reservoir, Fresno County, California	EBERHART 338
JOHNSON: The Archeology of the Camanche Reservoir Locality, California AND PALUMBO: The Archeology of Amador-23	KING 339
GEROW AND FORCE: An Analysis of the University Village Complex, With a Reappraisal of Central California Archaeology	WALLACE 340
LANNING: Peru Before the Incas	LATHRAP 341
Book Notices	ROHN 345
HUDDLESTON: Origins of the American Indians: European Concepts, 1492-1729 ..	WILMSEN 488
VANSTONE: Tikchik Village: A Nineteenth Century Riverine Community in Southwestern Alaska	ACKERMAN 488

	Page
MCPHERRON: The Juntunen Site and the Late Woodland Prehistory of the Upper Great Lakes Area	CHMURNY 489
PRUFER: Ohio Hopewell Ceramics, an Analysis of the Extant Collections	BROWN 490
PERINO: The Cherry Valley Mounds and Banks Mound 3	McNUTT 491
SHAFFER: Archaeological Investigations in the San Jacinto River Basin, Montgomery County, Texas	LORRAIN 492
McCLURKAN: Livingston Reservoir, 1965-66: Late Archaic and Neo-American Occupations	WOODALL 493
MILLER (EDITOR): Archaeological Survey Annual Report, 1966	SPANNE 493
COE: America's First Civilization: Discovering the Olmec	GROVE 495
PEREZ DE BARRADAS: Oftebrería Prehispanica de Colombia: Estilos Quimbaya y Otros	BOLIAN 496
BELL: Archaeological Investigations at the Site of El Inga, Ecuador	LANNING 497
VANSTAN: Textiles from Beneath the Temple of Pachacamac, Peru	GAYTON 497

CURRENT RESEARCH

Southwest	99
Lowland South America	103
Caribbean	104
Northeast	199
Northern Mississippi Valley	205
Plains	210
Great Basin	217
California	218
Boreal Forest	346
Southwest	347
Western Mesoamerica	351
Eastern Mesoamerica	353
Central America	357
Caribbean	360
Lowland South America	360

MISCELLANEOUS

Society for American Archaeology Annual Meeting, 1968	105
Report of the Secretary	110
Auditor's Statement	111
Report of the Editor	114
Report of the Committee for the Recovery of Archaeological Remains	115
Report of the Joint Committee for the Historic Preservation Act	116
Statement of Ownership, Management, and Circulation	117
Information for Authors	118
Announcement of 34th Annual Meeting	120
Announcement of Third International Congress for the Study of Pre-Columbian Cultures of the Lesser Antilles	145
Membership List	221
Archives of Archaeology	248

	Page
Archives of Archaeology	364
Society for American Archaeology	
Annual Meeting, 1969	499
Report of the Secretary	503
Report of the Treasurer	505
Auditor's Statement	506
Report of the Editor	511
Index for Vol. 34	515

PUBLICATIONS OF THE SOCIETY FOR AMERICAN ARCHAEOLOGY

Send orders for *American Antiquity* and *Archives of Archaeology* according to information given below. Send orders for *Memoirs* and *Abstracts of New World Archaeology* to Society for American Archaeology, 1703 New Hampshire Avenue, N.W., Washington, D.C. 20009. Remittance should accompany order. The publications of the Society are not available for exchange.

AMERICAN ANTIQUITY

A quarterly review of American Archaeology, edited by ROBERT E. BELL (University of Oklahoma).

Back issues are to be purchased from Kraus Reprint, 16 East 46th Street, New York, N.Y. 10017. Reprinted issues currently available are:

Vols. 1 to 20 (paperbound) — \$20 per volume.

Vols. 1 to 20 (paperbound) — \$400 complete.

Vols. 1 to 20 (clothbound) — \$460 complete.

Volumes 21 to 30 are also available from the remaining inventory of the original issue. Prices for these volumes are available on request from Kraus Reprint.

Volume 31, Nos. 1-6, and Vol. 32, Nos. 1-4, are available from the Society for American Archaeology, 1703 New Hampshire Avenue, N.W., Washington, D.C. 20009.

MEMOIRS OF THE SOCIETY FOR AMERICAN ARCHAEOLOGY

Occasional publications of monograph length, edited by DOUGLAS W. SCHWARTZ (The School of American Research, Santa Fe). *Memoirs* 1-15 are out of print. The following are available:

16. *The Belcher Mound: A Stratified Caddoan Site in Caddo Parish, Louisiana.* CLARENCE H. WEBB. xiv + 212 pages, 142 figures, 4 tables. 1959. \$4.00.
17. *Prehistoric Agriculture at Point of Pines, Arizona.* RICHARD B. WOODBURY. xiv + 48 pages, 16 figures, 4 tables. 1961. \$2.00.
18. *Issaquena: An Archaeological Phase in the Yazoo Basin of the Lower Mississippi Valley.* ROBERT E. GREENGO. xviii + 128 pages, 44 figures, 85 tables. 1964. \$4.50.
19. *Contributions of the Wetherill Mesa Archaeological Project*, assembled by DOUGLAS OSBORNE and edited by BERNARD S. KATZ. xviii + 230 pages, 154 figures, 28 tables. 1965. \$7.50.
20. *Preliminary Report on the Ruins of Ake, Yucatán.* LAWRENCE ROYS AND EDWIN M. SHOOK. x + 54 pages, frontis. 62 figures. 1966. \$2.00.
21. *Archaeological Survey of Northern Georgia With a Test of Some Cultural Hypotheses.* ROBERT WAUCHOPE. xxxii + 482 pages, 258 figures, 52 tables. 1966. \$12.50.
22. *The Arnapik and Tyara Sites: An Archaeological Study of Dorset Culture Origins.* WILLIAM E. TAYLOR, JR. xiii + 129 pages, 27 figures, 23 tables. 1968. \$4.50.

ABSTRACTS OF NEW WORLD ARCHAEOLOGY

This is an annual volume of abstracts of the literature of the preceding calendar year, edited of OLAF H. PRUFER (University of Massachusetts). The following are available:

Vol. 1, 1959. vi + 127 pages; 675 abstracts. 1960 \$5.00.

Vol. 2, 1960. viii + 184 pages, 1,125 abstracts 1961. \$5.00.

ARCHIVES OF ARCHAEOLOGY

This is an occasional publication on Microcard of Primary documentation of archaeological investigations and related materials pertaining to the New World, edited by DAVID A. BAERREIS (University of Wisconsin). The series is published jointly by the Society for American Archaeology and the University of Wisconsin Press. Order from the University of Wisconsin Press, 430 Sterling Court, Madison, Wisconsin 53701. Remittance should also accompany order. A list of available publications appears one or more times each year in AMERICAN ANTIQUITY (see section entitled: Society for American Archaeology).

CONTENTS

Middle Mississippian Agriculture Fields	MELVIN L. FOWLER	365
Science, Theory, and Reality in the "New Archaeology"	DONN T. BAYARD	376
Ground Slates: East and West	WILLIAM A. RITCHIE	385
Great Basin Hunting Patterns: A Quantitative Method for Treating Faunal Remains	DAVID H. THOMAS	392
The Castanheira Site: New Evidence on the Antiquity and History of the Ananatuba Phase (Marajó Island, Brazil)	MARIO FERRERIA SIMÕES	402
The Chronological Position of the Cambered Jar at Cahokia and Its Implications	PATRICIA J. O'BRIEN	411
Canavalia Beans in American Prehistory	JONATHAN SAUER AND LAWRENCE KAPLAN	417
Geology and Age of the Early Man Site at Taber, Alberta	A. MACS. STALKER	425
A New Population Estimate for Tikal, Guatemala	WILLIAM A. HAVILAND	429
Dzibilchaltún, Yucatán, Mexico: Structures 384, 385, and 386: A Preliminary Interpretation	W. J. FOLAN	434
ADÁN EDUARDO TREGANZA, 1916-1968	W. D. HOHENTHAL	462
RICHARD G. MORGAN, 1903-1968	JAMES B. GRIFFIN	467
JEAN McWHIRT PINKLEY, 1910-1969	CHESTER A. THOMAS	471

FACTS AND COMMENTS

Atlatl Spurs from California	FRANCIS A. RIDDELL AND DONALD F. MCGEEIN	474
An Olmec Mask from the Maya Lowlands	J. ERIC S. THOMPSON	478
Changing Site Designations: A Reply	MARSHALL MCKUSICK	480
Matching Polychrome Sets from Acatlán, Puebla	CHRISTOPHER L. MOSER	480
A Possible Non-Cultural Bias in Lithic Debris	LESLIE LISCHKA	483
Assessing the Archaeological Significance of <i>Mahamaes</i>	M. E. MOSELEY	485

REVIEWS

HUDDLESTON: <i>Origins of the American Indians: European Concepts, 1492-1729</i>	WILMSEN	488
VANSTONE: <i>Tikchik Village: A Nineteenth Century Riverine Community in Southwestern Alaska</i>	ACKERMAN	488
MCPHERRON: <i>The Juntunen Site and the Late Woodland Prehistory of the Upper Great Lakes Area</i>	CHMURNY	489
PRUFER: <i>Ohio Hopewell Ceramics, An Analysis of the Extant Collections</i>	BROWN	490
PERINO: <i>The Cherry Valley Mounds and Banks Mound 3</i>	McNUTT	491
SHAFFER: <i>Archaeological Investigations in the San Jacinto River Basin, Montgomery County, Texas</i>	LORRAIN	492
McCLURKAN: <i>Livingston Reservoir, 1965-66: Late Archaic and Neo-American Occupations</i>	WOODALL	493
MILLER (EDITOR): <i>Archaeological Survey Annual Report, 1966</i>	SPANNE	493
COE: <i>America's First Civilization: Discovering the Olmec</i>	GROVE	495
PEREZ DE BARRADAS: <i>Orfebrería Prehispanica de Colombia: Estilos Quimbaya y Otros</i>	BOLIAN	496
BELL: <i>Archaeological Investigations at the Site of El Inga, Ecuador</i>	LANNING	497
VANSTAN: <i>Textiles from Beneath the Temple of Pachacamac, Peru</i>	GAYTON	497
Society for American Archaeology		499
Index of Volume 34		515

AMERICAN ANTIQUITY IS INDEXED IN THE SOCIAL SCIENCES
AND HUMANITIES INDEX

UNIVERSITY OF UTAH PRINTING SERVICE, SALT LAKE CITY, UTAH