

AMERICAN ANTIQUITY

A *Quarterly Review of American Archaeology*

RAYMOND H. THOMPSON, *Editor*

DONALD COLLIER AND NATHALIE F. S. WOODBURY, *Associate Editors*

CHARLES E. BORDEN, E. MOTT DAVIS, CHARLES H. FAIRBANKS, PATRICK GALLAGHER, ALFRED K. GUTHE, ELMER HARP, JR., BETTY J. MEGGERS, H. B. NICHOLSON, GERARDO REICHEL-DOLMATOFF, FRANCIS A. RIDDELL, JOHN H. ROWE, ROBERT L. STEPHENSON, WILLIAM J. WALLACE, WILLIAM W. WASLEY, AND WARREN L. WITTRY, *Assistant Editors*

MOLLY K. THOMPSON, *Editorial Assistant*

VOLUME 25

Published by

THE SOCIETY FOR AMERICAN ARCHAEOLOGY

at the University of Utah Press

Salt Lake City

1959-60

CONTENTS OF VOLUME 25

ARTICLES	Page
Editorial	1
The Lehner Mammoth Site, Southeastern Arizona	EMIL W. HAURY, E. B. SAYLES, AND WILLIAM W. WASLEY 2
Geological Age of the Lehner Mammoth Site	ERNST ANTEVS 31
Faunal Remains from the Lehner Mammoth Site	JOHN F. LANCE 35
The Eastern Dispersal of Adena	WILLIAM A. RITCHIE AND DON W. DRAGOON 43
The Composite or "Assemble-it-yourself" Censer: A New Lowland Maya Variety of the Three-Pronged Incense Burner	STEPHAN F. BORHEGYI 51
The Smelting of Sulfide Ores of Copper in Preconquest Peru	EARLE R. CALEY AND DUDLEY T. EASBY, JR. 59
New Light on the Midland Discovery	FRED WENDORF AND ALEX D. KRIEGER 66
Notes on the Archaic of the Appalachian Region	JOHN WITTHOFT 79
A Decorated Bone Rattle from Culhuacan, Mexico	HASSO VON WINNING 86
The Kayuk Complex of Arctic Alaska	JOHN M. CAMPBELL 94
The Archaic Culture in the Middle South	T. M. N. LEWIS AND MADELINE KNEBERG 161
Ceramic Profiles in the Western Mound at Awatovi, Northeastern Arizona	ROBERT F. BURGH 184
A New Method for the Seriation of Archaeological Collections	CLEMENT W. MEIGHAN 203
A Mathematical Rationale for Graphical Seriation	MARCIA ASCHER 212
Archaeological Evidence for the Use of Atlatl Weights in the Northwest	B. ROBERT BUTLER AND DOUGLAS OSBORNE 215
The Incensario Complex of Palenque, Chiapas.....	ROBERT L. RANDS AND BARBARA C. RANDS 225
Ceramic Affiliations in the Northwestern Plains	ALICE B. KEHOE 237
New Traces of an Inland Neolithic Culture in the Chukotk (Chukchi) Peninsula	A. P. OKLADNIKOV AND I. A. NEKRASOV 247
The Classification of Artifacts in Archaeology	IRVING ROUSE 313
Ceramic Systems and Eastern Archaeology	WILLIAM H. SEARS 324
The Type-Variety Concept As a Basis for the Analysis of Maya Pottery	ROBERT E. SMITH, GORDON R. WILLEY, AND JAMES C. GIFFORD 330
The Type-Variety Method of Ceramic Classification As an Indicator of Cultural Phenomena	JAMES C. GIFFORD 341
Underwater Archaeology: Its Nature and Limitations	JOHN M. GOGGIN 348
Maya Settlement Pattern in Northeastern Petén, Guatemala	WILLIAM R. BULLARD, JR. 355
The Fremont Culture: Internal Dimensions and External Relationships...	JAMES H. GUNNERSON 373
A Preliminary Report on Petroglyphs in Puerto Rico.....	MONICA FLAHERTY FRASSETTO 381
Modern Cuicatec Use of Prehistoric Sacrificial Knives	WILLIAM R. HOLLAND AND ROBERT J. WEITLANER 392
Editorial: The First Quarter Century	449
Historical Implications of a Pattern of Dates at Piedras Negras, Guatemala	TATIANA PROSKOURIAKOFF 454
A New Dating Method Using Obsidian: Part I, The Development of the Method	ROBERT L. SMITH AND IRVING FRIEDMAN 476
Table of Obsidian Dates	494
A New Dating Method Using Obsidian: Part II, An Archaeological Evaluation of the Method.....	CLIFFORD EVANS AND BETTY J. MEGGERS 523
Mogollon Settlement Patterns in Pine Lawn Valley, New Mexico	ELAINE BLUHM 538
A Revision of the Archaeological Sequence in Sinaloa, Mexico	J. CHARLES KELLEY AND HOWARD D. WINTERS 547
Chronology and Culture Change in the San Juan Islands, Washington	ROY L. CARLSON 562

OBITUARIES

Page

JESSE ERWIN WRENCH — 1882–1958	HENRY W. HAMILTON	106
EDWARD WINSLOW GIFFORD — 1887–1959	ROBERT F. HEIZER	257
JUAN MARTÍNEZ HERNÁNDEZ — 1866–1959	J. ERIC S. THOMPSON	397
STANLEY A. STUBBS — 1906–1959	BRUCE T. ELLIS	587

FACTS AND COMMENTS

A Mississippian Headdress from Etowah, Georgia	LEWIS H. LARSON, JR.	109
The James Allen Site, Near Laramie, Wyoming	WILLIAM MULLOY	112
Bison Bones from the Allen Site, Wyoming	JACK E. BERMAN	116
Ancient Mesoamerican Mortars, Plasters, and Stuccos: Las Flores, Tampico..	EDWIN R. LITTMANN	117
Coiled Sherds from the High Plains	GEORGE METCALF	119
Another Maya Falsification	CÉSAR LIZARDI RAMOS	120
The Whiskey Dick Shellmound, Washington	EARL H. SWANSON	122
Two Woodland Vessels from North Dakota	W. RAYMOND WOOD	123
Dating the Ulua Polychrome Complex	JEREMIAH F. EPSTEIN	125
Ecological Interpretations and Plant Domestication	HAROLD C. CONKLIN	260
Ceremonial Bird Burials in		
San Francisco Bay Shellmounds	WILLIAM J. WALLACE AND DONALD W. LATHRAP	262
Ancient Mesoamerican Mortars, Plasters, and Stuccos: Palenque, Chiapas..	EDWIN R. LITTMANN	264
The Bahia-Goa Route in the Dispersal of Brazilian Plants to Asia	PETER HAGGETT	267
Comment on the Supposed Evidence for Goiter		
in Pre-Columbian Guatemala	ISIDOR GREENWALD	268
Navajo and Anglo Reconstruction of Prehistoric Sites		
in Southeastern Utah	WILLIAM Y. ADAMS	269
Nels C. Nelson and Chronological Archaeology	RICHARD B. WOODBURY	400
Archaeology and the Public Image	ROBERT ASCHER	402
The Vehicular Slip	JAMES B. SCHAEFFER	403
Blade Manufacture in Southern California	B. K. SWARTZ, JR.	405
Ancient Mesoamerican Mortars, Plasters, and Stuccos: The Puuc Area	EDWIN R. LITTMANN	407
A Fluted Point from Highland Guatemala	MICHAEL D. COE	412
Comments on Alibates Flint	F. EARL GREEN AND JANE HOLDEN KELLEY	413
A Paleo-Indian Bison-Kill in Northwestern Iowa..	GEORGE A. AGOGINO AND W. D. FRANKFORTER	414
The Use of the Binocular Microscope in the Identification of Flints	O. F. EVANS	415
Rates of Culture Change in Archaeology	GEORGE I. QUIMBY	416
A Dugout Canoe from Ontario	KENNETH E. KIDD	418
The Rape of Wayland	D. S. BYERS	420
Observations on the Butchering Technique at a Prehistoric		
Bison-Kill in Montana	THOMAS F. KEHOE AND ALICE B. KEHOE	421
Rejoinder to Taylor	RICHARD S. MACNEISH	591
Ancient Mesoamerican Mortars, Plasters, and Stuccos: The Use of		
Bark Extracts in Lime Plasters	EDWIN R. LITTMANN	593
Additional Ronquin Sites in the		
Middle Orinoco Valley	CARROLL L. RILEY AND CHARLES W. OLVEY	597
Temporal Placement of Alma Neck Banded	WILLIAM W. WASLEY	599
A Possible Andean Influence in		
Central Mexico	CHARLES R. WICKE AND MAUDIE BULLINGTON	603
Reliability of Identification of Fossil Pollen		
as Corn	EDWIN B. KURTZ, JR., HENRY TUCKER, AND JAMES L. LIVERMAN	605
Life-Expectancy of Utilitarian Pottery in Tzintzuntzan, Michoacán, Mexico..		
GEORGE M. FOSTER	606	
Association of Fossil Fauna and Artifacts of the Sulphur Spring Stage,		
Cochise Culture	EMIL W. HAURY	609

REVIEWS

Page

SINGER AND OTHERS (EDITORS): <i>A History of Technology</i> , Volumes I and II	GOGGIN	130
BOWEN: <i>The Exploration of Time</i>	SHUTLER	132
WAHLGREN: <i>The Kensington Stone</i>	GODFREY	132
LEWIS AND KNEBERG: <i>Tribes That Slumber</i>	SEARS	134
RITCHIE: <i>An Introduction to Hudson Valley Prehistory</i>	MAYER-OAKES	134
MCINTIRE: <i>Prehistoric Indian Settlements of the Changing Mississippi River Delta</i>	WEBB	135
JAMESON: <i>Archeological Notes on Stansbury Island</i>	GROSSCUP	137
TREGANZA AND BIERMAN: <i>The Topanga Culture</i>	JOHNSON	137
REED: <i>Excavations in Mancos Canyon, Colorado</i>	WHEAT	138
DI PESO: <i>The Reeve Ruin of Southeasterñ Arizona</i>	DANSON	139
HAYDEN: <i>Excavations, 1940, at University Indian Ruin</i>	DI PESO	140
WILLEY AND OTHERS (ASSEMBLERS): <i>Middle American Anthropology</i>	BERNAL	141
CASO: <i>The Aztecs, People of the Sun</i>	KUBLER	142
VON HAGEN: <i>The Aztec: Man and Tribe</i>	NICHOLSON	142
TOLSTOY: <i>Surface of the Northern Valley of Mexico</i>	PORTER	143
THOMPSON (EDITOR): <i>Migrations in New World Culture History</i>	VOGT	273
CALDWELL: <i>Trend and Tradition in the Prehistory of the Eastern United States</i>	SEARS	274
GRIFFIN: <i>The Chronological Position of the Hopewellian Culture</i>	GREENGO	276
HOUGH: <i>Geology of the Great Lakes</i>	STANLEY AND QUIMBY	277
BULLEN: <i>The Bolen Bluff Site</i>	SMITH	279
HURT: <i>Report of the Investigation of the Spotted Bear Site and the Cottonwood Site and Report of the Investigation of the Swan Creek Site</i>	WHEELER	280
KIDDER: <i>Pecos, New Mexico: Archaeological Notes</i>	HAURY	281
MARTIN: <i>Digging into History</i>	WORMINGTON	282
Reports of the University of California Archaeological Survey, Numbers 1-45	SHUTLER	282
DARK: <i>Mixtec Ethnohistory</i>	DIBBLE	283
BRAINERD: <i>The Archaeological Ceramics of Yucatan</i>	RUZ LHUILIER	284
THOMPSON: <i>Modern Yucatecan Maya Pottery Making</i>	ROUSE AND FOSTER	286
SHOOK AND OTHERS: <i>Tikal Reports, Numbers 1-4</i>	WOODBURY	288
THOMPSON (EDITOR): <i>Thomas Gage's Travels in the New World</i>	ROY	288
STONE: <i>Introduction to the Archaeology of Costa Rica and STONE AND BALSER: The Aboriginal Metalwork in the Isthmian Region of America</i>	MASON	289
FERGUSON: <i>One Fold and One Shepherd</i>	COE	290
COULBORN: <i>The Origin of Civilized Societies</i>	ADAMS	424
BIRRELL: <i>The Textile Arts</i>	EMORY AND KING	425
STRUNK AND WHITE: <i>The Elements of Style</i>	BYERS	426
SWANSON (EDITOR): <i>Tebiwa</i>	GARNER	426
CURTIS: <i>Arroyo Sequit</i>	ELSSASER	427
RINALDO: <i>Foote Canyon Pueblo</i>	DUTTON	427
ADAMS AND ADAMS: <i>An Inventory of Prehistoric Sites on the Lower San Juan River</i> ..PECKHAM	428	
TAYLOR: <i>Two Archaeological Studies in Northern Arizona</i>	SCHWARTZ	429
BELL: <i>Guide to the Identification of Certain American Indian Projectile Points</i>KRIEGER	429	
TOWNSEND: <i>Birdstones of the North American Indian</i>	QUIMBY	430
FUNDABURK (EDITOR): <i>Southeastern Indians, Life Portraits</i>	GOGGIN	431
ROBERTS (EDITOR): <i>River Basin Surveys Papers, Numbers 9-11</i>	CHAMPE	431
ROBERTS (EDITOR): <i>River Basin Surveys Papers, Numbers 12-14</i>	CALDWELL	432
MACNEISH: <i>Preliminary Archaeological Investigations in the Sierra de Tamaulipas</i>TAYLOR	434	
ANDERSON AND DIBBLE (TRANSLATORS): <i>Florentine Codex, Book IX—The Merchants</i>	NICHOLSON	436
LEHMANN AND KUTSCHER (TRANSLATORS): <i>Das Memorial Breve Acerca de la Fundación de la Ciudad de Culhuacán</i>	VON WINNING	437

	<i>Page</i>
HVIDTFELDT: Teotlal and Ixiptatl	KIRCHHOFF 438
STRONG: Paracas, Nazca, and Tiahuanacoid Cultural Relationships in South Coastal Peru	LOTHROP 439
HEIZER (EDITOR): The Archaeologist at Work	GRIFFIN 611
MAYR AND OTHERS: Evolution and Anthropology	HEIZER 611
WOLSTENHOLME AND O'CONNOR: Ciba Foundation Symposium on Medical Biology and Etruscan Origins	ANGEL 612
TRENT: Terms Used in Archaeology: A Short Dictionary	GABEL 613
CERAM: The March of Archaeology	WOODBURY 613
PALMER: Man's Journey Through Time	HOWELL 614
LEHMANN: Les Céramiques Pre-Colombiennes	LOTHROP 614
KIDDER II AND SAMAYOA CHINCHILLA: The Art of the Ancient Maya	RANDS 615
COLLIER: Indian Art of the Americas	KROEBER 615
PÉREZ DE BARRADAS: Orfebrería prehispánica de Colombia	EASBY 616
SWANSON AND OTHERS: Archeological Explorations in Central and South Idaho — 1958	CALDWELL 617
UHLE: Wesen und Ordnung der altperuanischen Kulturen	ROWE 618
COWLES: Cougar Mountain Cave in South Central Oregon	STEPHENSON 618
STRONG: Stone Age on the Columbia River	OSBORNE 619
COLTON: Pottery Types of the Southwest	MC.GREGOR 619
LISTER: The Coombs Site	EULER 620
KNEBERG: Engraved Shell Gourds and Their Associations	WARING 620
WEBB: The Belcher Mound	McGIMSEY 621
DEUEL: American Indian Ways of Life	KNEBERG 621

MISCELLANEOUS

Notes and News	145
Some Recent Publications	152
Annual Meeting of the Society for American Archaeology, 1959	291
Constitution and By-Laws of the Society for American Archaeology	298
Notes and News	303
<i>Abstracts of New World Archaeology</i>	310
Information for Authors	311
Notes and News	441
Viking Fund Medals and Awards	589
The Alfred Vincent Kidder Award	590
<i>Archives of Archaeology: A New Publication Series</i> on Microcard	DAVID A. BAERREIS AND JOHN J. SOLON 623
Notes and News	626
Index	638

PUBLICATIONS OF THE SOCIETY FOR AMERICAN ARCHAEOLOGY

Send orders for all publications (except Memoir 14 and *Archives of Archaeology*) to Executive Secretary, American Anthropological Association, 1530 P. Street, N.W., Washington 5, D.C. Remittance should accompany order.

AMERICAN ANTIQUITY A Quarterly Review of American Archaeology

The following issues are out of print: Vol. 3, Nos. 2, 3, 4; Vol. 4, Nos. 1, 2, 3; Vol. 5; Vol. 6; Vol. 7, Nos. 1, 2; Vol. 8, Nos. 1, 2; Vol. 9, No. 1; Vol. 11, Nos. 1, 2; Vol. 12; Vol. 13, No. 1; Vol. 21, No. 2; Vol. 23, No. 1. Prices for back issues are: Vols. 1-8, whole volume, \$3.00, single number, \$1.00; Vols. 9-12, whole volume, \$4.00, single number, \$1.25; Vols. 13-22, whole volume, \$6.00, single number, \$1.75; Vols. 23-25, whole volume, \$8.00, single number, \$2.50.

MEMOIRS OF THE SOCIETY FOR AMERICAN ARCHAEOLOGY

Occasional publications of monograph length. Each number is bound and sold separately, except for Numbers 6 and 7, which are bound together and sold as a unit. The following numbers are out of print: 2, 3, 9, 10.

1. *Big Bead Mesa: An Archaeological Study of Navaho Acculturation, 1745-1812*. DOROTHY LOUISE KEUR. vi+90 pages, 4 plates, 5 figures. 1941. \$1.00
4. *A Reappraisal of Peruvian Archaeology*. Assembled by WENDELL C. BENNETT. x+128 pages, 72 figures, 6 tables. 1948. \$2.00
5. *The George C. Davis Site, Cherokee County, Texas*. H. PERRY NEWELL and ALEX D. KRIEGER. xvi+255 pages, 66 figures, 20 tables. 1949. \$3.50.
6. *Archaeology of the Columbia-Frazer Region*. MARIAN W. SMITH. viii+46 pages, 4 figures, 3 tables. 1950. Bound and sold with No. 7, \$2.50.
7. *Cattle Point: A Stratified Site in the Southern Northwest Coast Region*. ARDEN R. KING. xii+94 pages, 25 figures, 13 tables. 1950. Bound and sold with No. 6, \$2.50.
8. *Radiocarbon Dating*. Assembled by FREDERICK JOHNSON. vi+65 pages, 2 figures, 2 tables. 1951. \$1.50.
11. *Seminars in Archaeology: 1955*. Edited by ROBERT WAUCHOPE. x+160 pages, 6 figures, 5 tables. 1956. \$2.00
12. *Archaeological Evidence of Pre-Spanish Visits to the Galápagos Islands*. THOR HEYERDAHL and ARNE SKJÖLSEVOLD. viii+71 pages, 48 figures, 2 tables. 1956. \$1.00.
13. *Paracas, Nazca, and Tiahuanacoid Cultural Relationships in South Coastal Peru*. WILLIAM DUNCAN STRONG. vi+48 pages, 18 figures, 4 tables. 1957. \$1.00
14. *Danger Cave*. JESSE D. JENNINGS. xii+328 pages, 247 figures, 31 tables. 1957. Available only as *University of Utah Anthropological Papers*, No. 27, from University of Utah Press, Salt Lake City 12, Utah. \$6.00.
15. *Modern Yucatecan Maya Pottery Making*. RAYMOND H. THOMPSON. x+157 pages, 48 figures. 1958. \$2.50.
16. *The Belcher Mound: A Stratified Caddoan Site in Caddo Parish, Louisiana*. CLARENCE H. WEBB. xiv+212 pages, 142 figures, 4 tables. 1959. \$3.00

CUMULATIVE INDEX

A cumulative index of *AMERICAN ANTIQUITY*, Vols. 1-25, *Memoirs* 1-16, and the *Notebook* is in preparation.

ABSTRACTS OF NEW WORLD ARCHAEOLOGY

An annual volume of abstracts summarizing the literature of the preceding calendar year. The first volume, which covers the literature dated 1959, is scheduled to appear in 1960.

ARCHIVES OF ARCHAEOLOGY

Occasional publication on Microcard of primary documentation of archaeological material. Order from the University of Wisconsin Press, 430 Sterling Court, Madison 6, Wisconsin. Remittance should accompany order.

1. *A Report on a Bluff Shelter in Northeastern Oklahoma (D1-47)*. DAVID A. BAERREIS and JOAN E. FREEMAN. 334 pages on 5 double-sided cards. \$1.50
2. *An Archaeological Report on a Cave Deposit (D1-30) in Northeastern Oklahoma*. JOAN E. FREEMAN. 104 pages on 2 double-sided cards. \$0.75.

CONTENTS

Editorial: The First Quarter Century.....	449
Historical Implications of a Pattern of Dates at Piedras Negras, Guatemala	TATIANA PROSKOURIAKOFF 454
A New Dating Method Using Obsidian Part I, The Development of the Method	IRVING FRIEDMAN AND ROBERT L. SMITH 476
Table of Obsidian Dates	494
Part II, An Archaeological Evaluation of the Method	CLIFFORD EVANS AND BETTY J. MEGGERS 523
Mogollon Settlement Patterns in Pine Lawn Valley, New Mexico	ELAINE BLUHM 538
A Revision of the Archaeological Sequence in Sinaloa, Mexico	J. CHARLES KELLEY AND HOWARD D. WINTERS 547
Chronology and Culture Change in the San Juan Islands, Washington	ROY L. CARLSON 562
Stanley A. Stubbs—1906–1959	587
Viking Fund Medals and Awards	589
The Alfred Vincent Kidder Award	590

FACTS AND COMMENTS

Rejoinder to Taylor	RICHARD S. MACNEISH 591
Ancient Mesoamerican Mortars, Plasters, and Stuccos: The Use of Bark Extracts in Lime Plasters	EDWIN R. LITTMANN 593
Additional Ronquín Sites in the Middle Orinoco Valley	CARROLL L. RILEY AND CHARLES W. OLVEY 597
Temporal Placement of Alma Neck Banded	WILLIAM W. WASLEY 599
A Possible Andean Influence in Central Mexico	CHARLES R. WICKE AND MAUDIE BULLINGTON 603
Reliability of Identification of Fossil Pollen as Corn	EDWIN B. KURTZ, JR., HENRY TUCKER, AND JAMES L. LIVERMAN 605
Life-Expectancy of Utilitarian Pottery in Tzintzuntzan, Michoacán, Mexico..	GEORGE M. FOSTER 606
Association of Fossil Fauna and Artifacts of the Sulphur Spring Stage, Cochise Culture	EMIL W. HAURY 609

REVIEWS

HEIZER (EDITOR): The Archaeologist at Work	GRIFFIN 611
MAVR AND OTHERS: Evolution and Anthropology	HEIZER 611
WOLSTENHOLME AND O'CONNOR: Ciba Foundation Symposium on Medical Biology and Etruscan Origins	ANGEL 612
TRENT: Terms Used in Archaeology: A Short Dictionary	GABEL 613
CERAM: The March of Archaeology	WOODBURY 613
PALMER: Man's Journey Through Time	HOWELL 614
LEHMANN: Les Céramiques Pre-Colombiennes	LOTHROP 614
KIDDER II AND SAMAYOA CHINCHILLA: The Art of the Ancient Maya	RANDS 615
COLLIER: Indian Art of the Americas	KROEBER 615
PÉREZ DE BARRADAS: Orfebrería prehispánica de Colombia	EASBY 616
SWANSON AND OTHERS: Archeological Explorations in Central and South Idaho — 1958	CALDWELL 617
UHLE: Wesen und Ordnung der altperuanischen Kulturen	ROWE 618
COWLES: Cougar Mountain Cave in South Central Oregon	STEPHENSON 618
STRONG: Stone Age on the Columbia River	OSBORNE 619
COLTON: Pottery Types of the Southwest	MC.GREGOR 619
LISTER: The Coombs Site	EULER 620
KNEBERG: Engraved Shell Gorgets and Their Associations	WARING 620
WEBB: The Belcher Mound	McGIMSEY 621
DEUEL: American Indian Ways of Life	KNEBERG 621
Archives of Archaeology: A New Publication Series on Microcard	DAVID A. BAERREIS AND JOHN J. SOLON 623
NOTES AND NEWS	626
INDEX OF VOLUME 25	638

AMERICAN ANTIQUITY IS INDEXED IN THE INTERNATIONAL INDEX

UNIVERSITY OF UTAH PRESS, SALT LAKE CITY, UTAH