

**SMITHSONIAN INSTITUTION. BULLETIN
87. CULTURE OF THE ANCIENT PUEBLOS
OF THE UPPER GILA RIVER REGION, NEW
MEXICO AND ARIZONA. SECOND
MUSEUM - GATES EXPEDITION**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649219735

Smithsonian Institution. Bulletin 87. Culture of the ancient pueblos of the upper gila river region, New Mexico and Arizona. Second Museum - Gates Expedition by Walter Hough

Except for use in any review, the reproduction or utilisation of this work in whole or in part in any form by any electronic, mechanical or other means, now known or hereafter invented, including xerography, photocopying and recording, or in any information storage or retrieval system, is forbidden without the permission of the publisher, Trieste Publishing Pty Ltd, PO Box 1576 Collingwood, Victoria 3066 Australia.

All rights reserved.

Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, re-sold, hired out, or otherwise circulated without the publisher's prior consent in any form or binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

www.triestepublishing.com

WALTER HOUGH

**SMITHSONIAN INSTITUTION. BULLETIN
87. CULTURE OF THE ANCIENT PUEBLOS
OF THE UPPER GILA RIVER REGION, NEW
MEXICO AND ARIZONA. SECOND
MUSEUM - GATES EXPEDITION**

SMITHSONIAN INSTITUTION
UNITED STATES NATIONAL MUSEUM

Bulletin 87

CULTURE OF THE ANCIENT PUEBLOS OF
THE UPPER GILA RIVER REGION,
NEW MEXICO AND ARIZONA

SECOND MUSEUM-GATES EXPEDITION

BY

WALTER HOUGH

Curator, Division of Ethnology, United States National Museum



WASHINGTON
GOVERNMENT PRINTING OFFICE
1914

BULLETIN OF THE UNITED STATES NATIONAL MUSEUM,
Issued March 21, 1914.

ADVERTISEMENT.

The scientific publications of the United States National Museum consist of two series—the *Proceedings* and the *Bulletins*.

The scientific publications of the United States National Museum are intended primarily as a medium for the publication of original, and usually brief, papers based on the collections of the National Museum, presenting newly acquired facts in zoology, geology, and anthropology, including descriptions of new forms of animals, and revisions of limited groups. One or two volumes are issued annually and distributed to libraries and scientific organizations. A limited number of copies of each paper, in pamphlet form, is distributed to specialists and others interested in the different subjects as soon as printed. The date of publication is printed on each paper, and these dates are also recorded in the tables of contents of the volumes.

The *Bulletins*, the first of which was issued in 1875, consist of a series of separate publications comprising chiefly monographs of large zoological groups and other general systematic treatises (occasionally in several volumes), faunal work, reports of expeditions, and catalogues of type-specimens, special collections, etc. The majority of the volumes are octavos, but a quarto size has been adopted in a few instances in which large plates were regarded as indispensable.

Since 1902 a series of octavo volumes containing papers relating to the botanical collections of the Museum, and known as the *Contributions from the National Herbarium*, has been published as bulletins.

The present work forms No. 87 of the *Bulletin* series.

RICHARD RATHBUN,
Assistant Secretary, Smithsonian Institution,
In charge of the United States National Museum.

WASHINGTON, D. C., February 13, 1914.

TABLE OF CONTENTS.

	Page.
Introduction	1
Itinerary	2
Tularosa Cave.....	2
Natural history	4
Mammals.....	4
Birds.....	5
Other animals.....	7
Corn.....	7
Cotton.....	9
Gourds and squashes.....	9
Beans.....	10
Fruits.....	10
Roots.....	10
Nuts.....	11
Parts of wild plants.....	11
Stone, bone, shell, and metal.....	11
Materials and general remarks.....	11
Domestic utensils of stone.....	13
Mortars and pestles.....	15
Stone vessels.....	16
Smoothing stones.....	17
Pottery-working stones.....	18
Arrowheads, throwsticks, and darts.....	19
Axes, hammers, and mauls.....	20
Chubheads, balls.....	21
Knife.....	21
Scrapers.....	22
Saws.....	22
Drills.....	23
Beads and ornaments.....	24
Process of bead making.....	26
Crystals and reflectors.....	30
Ceremonial mortars and tablets.....	30
Plaques.....	31
Sculptures.....	32
Pictographs.....	33
Paint stones.....	33
Salt.....	33
Bone.....	33
Shell.....	37
Metal work.....	37
Pottery.....	38
Coiled ware of the Blue River region.....	38
Brown ware of the Blue River region.....	40
Gray ware of the Blue River region.....	41
Gray ware of Spur Ranch.....	42
Gray ware of the Tularosa Valley.....	42
Gray ware of Apache Creek.....	43

	Page.
Pottery—Continued.	
Red ware of Blue River.....	43
Red ware of Apache Creek.....	44
Red ware of Tularosa River.....	44
Pottery of Upper Mimbres.....	45
Pottery of Bear Creek Cave.....	45
Pottery of Tularosa Cave.....	45
Pottery designs.....	46
White Line designs, Blue River.....	56
Wood.....	58
Arrow making.....	63
Fire-making implements.....	66
Textiles.....	66
Knots in yucca strips.....	67
Cord.....	68
Cord making series and products.....	69
Weaving tools.....	73
Braiding.....	75
Woven textiles.....	76
Dyes on cords.....	83
Sandals.....	83
Hair.....	86
Leather work.....	86
Basketry.....	87
Twined work.....	87
Wrapped work.....	87
Tied work.....	87
Twillled work.....	88
Diaper work.....	89
Coiled work.....	89
Religious objects.....	90
Deposit of offerings in caves.....	90
Psychology of the paho.....	91
Twig pahos.....	91
Stub pahos.....	92
Crook pahos.....	93
Roundel pahos.....	96
Bow pahos.....	97
Birds in religious observances.....	101
Bird circuit symbolism.....	103
Fire pahos.....	106
Ceremonial cigarettes.....	107
Firesticks and torch offerings.....	110
Cloud blowers.....	111
Costume pahos.....	114
Pottery figurines.....	115
Spring pahos.....	117
Mountain pahos.....	118
Basketry pahos.....	123
Designs on painted basket pahos.....	124
Flute pahos.....	125
Game pahos.....	127
Miscellaneous pahos.....	128
Ornamentation of offerings.....	130
Mortuary.....	132
Index.....	135

LIST OF ILLUSTRATIONS.

PLATES.	Facing page.
1. Desiccated turkey from Tularosa Cave.....	5
2. Corn ears, cobs and stems of ears that have been strung.....	8
3. Stone implements for grinding and abrading.....	13
4. Stone implements for cutting and pounding.....	20
5. Coiled and paste-ornamented pottery.....	40
6. Coiled and paste-ornamented pottery.....	40
7. Pottery vessels from Spur Ranch.....	40
8. Gray ware from Blue River and Apache Creek.....	42
9. Gray ware from Spur Ranch.....	42
10. Red ware from Blue River.....	44
11. Pottery vases and bowls from Fort Bayard, New Mexico.....	45
12. Bent wood rings and wooden hook.....	59
13. Digging sticks and fire-sharpened wooden implements.....	62
14. Worked wood and bark and basketry manikin.....	63
15. Fire-making apparatus and slow wood.....	66
16. Twilled basketry.....	89
17. Twilled and coiled basketry.....	90
18. Stub pahos from Bear Creek Cave.....	92
19. Crook pahos from Bear Creek and Johnson Caves.....	95
20. Roundel pahos from Bear Creek Cave.....	96
21. Painted bird offering from Bear Creek Cave.....	105
22. Painted wooden strips from Bear Creek Cave.....	106
23. Costume pahos from Bear Creek Cave.....	114
24. Coiled painted basket pahos from Bear Creek Cave.....	123
25. Game pahos and game set.....	128
26. Painted wood and pith offerings.....	129
27. Desiccated body of an infant buried in Tularosa Cave.....	132
28. Objects accompanying infant burial.....	132
29. Desiccated body of an infant.....	133

FIGURES.	Page.
1. Hair brush from Tularosa Cave.....	3
2. Pottery fire vessel from Tularosa Cave.....	3
3. Trade bundle of parrot feathers from Tularosa Cave.....	6
4. Jaybird plume from Tularosa Cave.....	7
5. Gourd seed vessel from Tularosa Cave.....	10
6. Brush of yucca from Tularosa Cave.....	11
7. Metate set on a foundation from Blue.....	14
8. Grinding stones from Blue.....	15
9. Stone mortar from Spur Ranch.....	15
10. Pestle from Spur Ranch.....	15
11. Carved stone vessel from Solomonsville.....	16