

THIRTEENTH ANNUAL REPORT  
OF THE  
BUREAU OF ETHNOLOGY

TO THE  
SECRETARY OF THE SMITHSONIAN INSTITUTION

1891-'92

BY

J. W. POWELL  
DIRECTOR



WASHINGTON  
GOVERNMENT PRINTING OFFICE  
1896

E51  
1155

## ADVERTISEMENT

The work of the Bureau of American Ethnology is conducted under act of Congress "for continuing ethnologic researches among the American Indians under the direction of the Smithsonian Institution."

Two series of publications are issued by the Bureau under authority of Congress, viz, annual reports and bulletins. The annual reports are authorized by concurrent resolution from time to time and are published for the use of Congress and the Bureau; the publication of the series of bulletins was authorized by concurrent resolution first in 1886 and more definitely in 1888, and these also are issued for the use of Congress and the Bureau. In addition, the Bureau supervises the publication of a series of quarto volumes bearing the title, "Contributions to North American Ethnology," begun in 1877 by the United States Geographical Survey of the Rocky Mountain Region.

These publications are distributed primarily by Congress, and the portions of the editions printed for the Bureau are used for exchange with libraries and scientific and educational institutions and with special investigators in anthropology who send their own publications regularly to the Bureau.

The exchange list of the Bureau is large, and the product of the exchange forms a valuable ethnologic library independent of the general library of the Smithsonian Institution. This library is in constant use by the Bureau collaborators, as well as by other anthropologists resident in or visiting Washington.

The earlier volumes of the annual reports and the first seven volumes of the "Contributions to North American Ethnology" are out of print. The eighth volume of the latter series has not yet been published.

Exchanges and other contributions to the Bureau should be addressed,

The DIRECTOR,  
Bureau of American Ethnology,  
Washington, D. C.,  
U. S. A.

## LETTER OF TRANSMITTAL

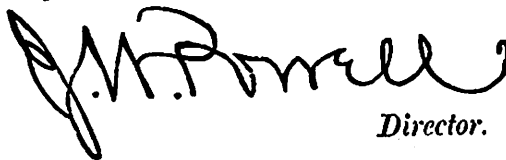
SMITHSONIAN INSTITUTION, BUREAU OF ETHNOLOGY,  
*Washington, D. C., July 1, 1892.*

SIR: I have the honor to submit my Thirteenth Annual Report as Director of the Bureau of Ethnology.

The first part consists of an explanation of the organization and operations of the Bureau; the second part consists of a series of papers, prepared chiefly by assistants, which illustrate the methods and results of the work of the Bureau.

It is a pleasure to express appreciation of your unfailing support in the work intrusted to me.

I am, with respect, your obedient servant,



*Director.*

Honorable S. P. LANGLEY,  
*Secretary of the Smithsonian Institution.*

# CONTENTS

## REPORT OF THE DIRECTOR

	Page
Introduction.....	XXI
Field operations .....	XXVI
Archeologic field work (under Mr W. H. Holmes).....	XXVI
General field studies .....	XXX
Work of Mr H. W. Henshaw.....	XXX
Work of Mrs M. C. Stevenson.....	XXXI
Work of Dr W. J. Hoffmau .....	XXXII
Work of Mr James Mooney.....	XXXIII
Work of Mr J. Owen Dorsey.....	XXXIV
Work of Mr Albert S. Gatschet.....	XXXIV
Office researches .....	XLII
Publications .....	XLIII
Financial statement.....	XLIV
Characterization of accompanying papers .....	XLIV
Subjects treated .....	XLV
Prehistoric textile art of eastern United States .....	XLIX
Stone art .....	LI
Aboriginal remains in Verde Valley, Arizona.....	LIV
Omaha dwellings, furniture, and implements .....	LV
Casa Grande ruin.....	LVII
Outlines of Zuni creation myths.....	LVII

## ACCOMPANYING PAPERS

PREHISTORIC TEXTILE ART OF EASTERN UNITED STATES, BY WILLIAM HENRY HOLMES	
Introductory .....	9
Scope of the work .....	9
Definition of the art.....	10
Materials and processes .....	10
Sources of information.....	11
Products of the art.....	13
Wattle work .....	13
Basketry .....	15
Types of basketry .....	15
Baskets.....	17
Sieves and strainers.....	18
Cradles.....	18
Shields .....	18
Matting .....	21
Pliable fabrics.....	21
Development of spinning and weaving .....	22
Cloths.....	26
Nets.....	27
Feather work.....	28
Embroidery .....	V

The valley of Rio Verde (the "green river" of the Spaniards) is a typical section of the middle zone of the great arid tract. Its waters gather among great volcanic mesas by which the southwestward slope of the sedimentary formations is broken; they flow southward in gradually shallowing canyons, chiefly of the bedded sedimentary rocks, falling into Rio Salado (the salted river), whose waters are so largely evaporated as to leave the residue brackish, and thence into the Gila. When swollen by storms, the Verde builds floodplains or overflows the plains of previous storms, and on these plains and terraces the hardy vegetation of the subarid regions greedily seizes and persistently maintains a preemption; so that the valley winds through the barren mesas, gray, pink, or black in tint, as a verdant ribbon. By this verdure the Spanish conquerors were attracted more than three centuries ago; but long before their coming the native peoples gathered along the fruitful riverbanks to alternately practice a primitive horticulture in the valley bottom and find refuge from predatory neighbors in the rugged valley sides.

Mr Cosmos Mindeleff (the younger of the two Mindeleff brothers, long associated in archeologic work) spent several months in making surveys of, and researches concerning, the ruined villages, lodges, and irrigating works, which remain as the sole record of the prehistoric population of Verde valley. He found a large number of ruins, of which many were so well preserved as to indicate not only the style of architecture but, in many cases, the purposes and customs of the builders. Through careful comparison of the ruins themselves, of the implements and utensils found in connection therewith, of the irrigation works, of the relation of the sites to natural features, etc, he has been able to restore at least the main lines of the picture representing this region during prehistoric times.

The principal villages were built of stones, sometimes rude, sometimes rough dressed. They were usually great clusters of houses, or of rooms united in a single structure. They were often located without regard to defense; but they were placed on or near broad stretches of tillable bottom land. The remains of irrigation works indicate that the artificial control of the waters was extensive and successful.

not so closely as the western, by a chain of mountains known as the Mazatzal range. The crest of this chain is generally over 10 miles from the river, and the intervening stretch, unlike the other side, which comes down to the river in practically a single slope, is broken into long promontories and foothills, and sometimes, where the larger tributaries come in, into well-defined terraces. Except at its head the principal tributaries of the Verde come from the east, those on the west, which are almost as numerous, being generally small and insignificant.

Most of the modern settlements of the Rio Verde are along the upper portion of its course. Prescott is situated on Granite creek, one of the sources of the river, and along other tributaries, as far down as the southern end of the great valley in whose center Verde is located, there are many scattered settlements; but from that point to McDowell there are hardly a dozen houses all told. This region is most rugged and forbidding. There are no roads and few trails, and the latter are feebly marked and little used. The few permanent inhabitants of the region are mostly "cow men," and the settlements, except at one point, are shanties known as "cow camps." There are hundreds of square miles of territory here which are never visited by white men, except by "cow-boys" during the spring and autumn round-ups.

Scattered at irregular intervals along both sides of the river are many benches and terraces of alluvium, varying in width from a few feet to several miles, and comprising all the cultivable land in the valley of the river. Since the Verde is a mountain stream with a great fall, its power of erosion is very great, and its channel changes frequently; in some places several times in a single winter season. Benches and terraces are often formed or cut away within a few days, and no portion of the river banks is free from these changes until continued erosion has lowered the bed to such a degree that that portion is beyond the reach of high water. When this occurs the bench or terrace, being formed of rich alluvium, soon becomes covered with grass, and later with mesquite and "cat-claw" bushes, interspersed with such cottonwood trees as may have survived the period when the terrace was but little above the river level. Cottonwoods, with an occasional willow, form the arborescent growth of the valley of the Verde proper, although on some of the principal tributaries and at a little distance from the river groves of other kinds of trees are found. All these trees, however, are confined to the immediate vicinity of the river and those of its tributaries which carry water during most of the year; and as the mountains which hem in the valley on the east and west are not high enough to support great pines such as characterize the plateau country on the north and east, the aspect of the country, even a short distance away from the river bottom, is arid and forbidding in the extreme.

With in the last few years the character of the river and of the country adjacent to it has materially changed, and inferences drawn from

present conditions may be erroneous. This change is the direct result of the recent stocking of the country with cattle. More cattle have been brought into the country than in its natural state it will support. One of the results of this overstocking is a very high death rate among the cattle; another and more important result is that the grasses and other vegetation have no chance to seed or mature, being cropped off close to the ground almost as soon as they appear. As a result of this, many of the river terraces and little valleys among the foothills, once celebrated for luxuriant grass, are now bare, and would hardly afford sustenance to a single cow for a week. In place of strong grasses these places are now covered for a few weeks in spring with a growth of a plant known as "filaree," which, owing to the rapid maturing of its seeds (in a month or less), seems to be the only plant not completely destroyed by the cattle, although the latter are very fond of it and eat it freely, both green and when dried on the ground. As a further effect of the abundance of cattle and the scarcity of food for them, the young willows, which, even so late as ten years ago, formed one of the characteristic features of the river and its banks, growing thickly in the bed of the stream, and often forming impenetrable jungles on its banks, are now rarely seen.

Owing to the character of the country it drains, the Rio Verde always must have been subject to freshets and overflows at the time of the spring rains, but until quite recently the obstructions to the rapid collection of water offered by thickly growing grass and bushes prevented destructive floods, except, perhaps, on exceptional occasions. Now, however, the flood of each year is more disastrous than that of the preceding year, and in the flood of February, 1891, the culminating point of intensity and destructiveness was reached. On this occasion the water rose in some places over 20 feet, with a corresponding broadening in other places, and flowed with such velocity that for several weeks it was impossible to cross the river. As a result of these floods, the grassy banks that once distinguished the river are now but little more than a tradition, while the older terraces, which under normal circumstances would now be safe, are being cut away more and more each year. In several localities near Verde, where there are cavate lodges, located originally with especial reference to an adjacent area of tillable land, the terraces have been completely cut away, and the cliffs in which the cavate lodges occur are washed by the river during high water.