THE NORTH AMERICANS OF YESTERDAY



FREDERICK·S·DELLENBAUGH

F·S·D Del.

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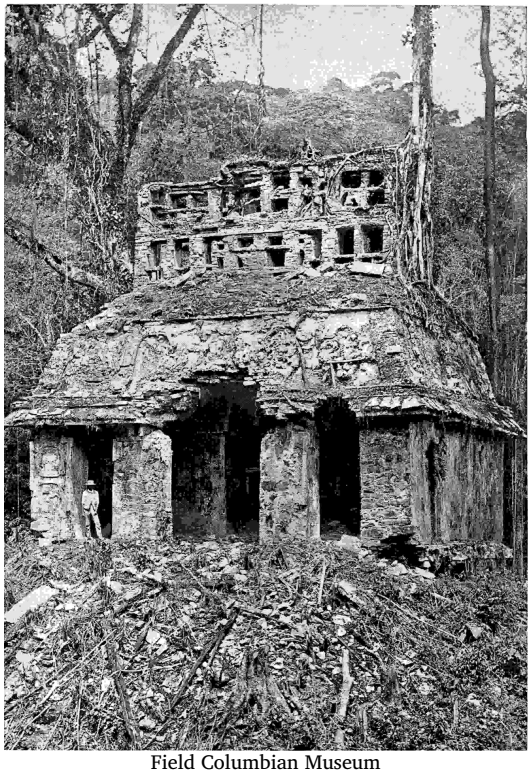
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*** START OF THE PROJECT GUTENBERG EBOOK THE NORTH-AMERICANS OF YESTERDAY ***



Field Columbian Museum
From a photograph by Maudsley
TEOCALLI OF THE SUN, PALENQUE, YUCATAN

Discovered about 1750; 28 × 38 feet on the ground, about 25 feet high without the "roof-comb," a feature of the Palenque buildings here particularly well preserved. Like all the structures of the group, this crowns a mound of considerable height. The construction is

stone; ornamentation, stucco. Charnay calls attention to the resemblance to a Japanese temple. On pages 210, 235, and 237 constructive features are shown, on page 185 is a reproduction of a tablet from it, and on page 238, second figure, is the ground plan. Page 404 gives another of the group, and page 436 shows geographical location.

The North-Americans of Yesterday

A Comparative Study of North-American Indian Life Customs, and Products, on the Theory of the Ethnic Unity of the Race

By

Frederick S. Dellenbaugh

"But their name is on your waters,
Ye may not wash it out."—*Mrs. Sigourney*.



With over 350 Illustrations. And an Appendix giving list of stocks, sub-stocks and tribes

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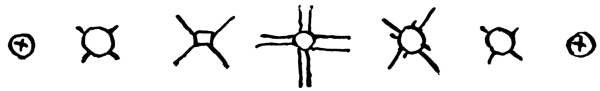
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To
MAJOR POWELL
WHOSE COURAGE SOLVED THE PROBLEM
OF THE
COLORADO RIVER
AND WHOSE FORESIGHT ESTABLISHED
THE BUREAU OF AMERICAN ETHNOLOGY

THIS BOOK
IS AFFECTIONATELY DEDICATED
IN MEMORY OF DAYS
AFLOAT AND AFIELD

NOTE

The author suggests the reading in conjunction with this volume of the first four chapters of his *Breaking the Wilderness*: Also the article in the *Atlantic Monthly* for March 1906, by Charles M. Harvey: *The Red Man's Last Roll Call*.



MOKI DRAWINGS OF STARS

PREFACE

THE basis of this volume is eight lectures given before the Lowell Institute in Boston in 1894. They have been expanded by the addition of further matter relating to the various subjects, but even with these additions there is but a brief *résumé* of the vast store of material extant.

The “Indian” has never seemed to me an abnormal factor, but rather a natural part of our society, for it is now nearly thirty years since I first associated with him in the Far West, and before that the Iroquois were familiar to me as a small boy. When I first went among the Western tribes, it was with the second Colorado River expedition of that gallant explorer and foremost student of Amerindian affairs, John Wesley Powell. His own works and the reports of the United States Bureau of Ethnology, of which he has so long been the head, and where he has gathered together so many eminent ethnologists and archæologists, have furnished me with much material. These reports form a fine library on Amerindian matters, and reflect great honour on Professor Powell who conceived the idea, and on Congress which has ungrudgingly supported it. A great and timely work has become established, which to private enterprise would have been next to impossible. Add to these the invaluable reports of the

Smithsonian Institution and the memoirs and reports of the Peabody Museum and American Museum, and the student has before him a large fund of material without seeking farther. Then there are the brilliant works of Parkman, Brinton, Winsor, Bandelier, Putnam, Morgan, Schoolcraft, Prescott, Maudsley, Goodman, Wilson, Keane, and many others, with the huge production of H. H. Bancroft filling an important place. To all of these and to others I owe much, and I have intended in every case to give credit and references. Where these, in some cases, may not have been properly awarded, it is due to oversight and not to intention. My especial thanks are due to the Bureau of Ethnology for copies of all the reports, and for permission to utilise the illustrations contained in them, and to the American Museum, Archæological Institute, Field Columbian Museum, Peabody Museum, and Smithsonian Institution for similar generosity. I take pleasure also in acknowledging favours from Professor Putnam, Professor Powell, Professor Mason, Dr. McGee, Mr. Saville, Professor Seymour, Professor Langley, Mr. Bancroft, Professor Holmes, Dr. Baum, and others, and from Mr. E. H. Harriman the opportunity of visiting Alaska under the most favourable circumstances.

The title, *The North Americans of Yesterday*, seems to me appropriate, because while there are still some Amerinds extant, and a few are even yet apparently leading the old-time life, nevertheless they are merely remnants of a people whose sun has set, and who therefore properly belong to yesterday. For this reason I have mainly treated them as a bygone race. Between the so-called “Red Indian” of the United States and northern regions and the so-called “Civilised Tribes” of Mexico and southern regions I

have made no race differentiation, because the differences, whatever they may be, are discovered to be not of kind, but of degree. Confusion was formerly caused by misconceptions and by romantic ideas which have been dispelled by the more scientific methods of later days. Some confusion has been caused also by the persistent efforts to classify the progress of mankind as a whole into distinct world-epochs or time periods. It seems to me that no such universal epochs of even progress could have existed in past time any more than in present time. Tribes of men are differentiated now, always will be, and, I believe, always have been. Common world-planes of culture in time periods are an impossibility. Such schedules as Morgan's may apply to tribes and stocks as indicating their special, individual advance, but not to the whole world, except in a very general way. That is, they may be *culture* but never *time* classifications. The closer we approach the beginnings of man's existence, the less marked, perhaps, the differences in tribes, but differences certainly began at the moment when one group of men left another group of men to live apart. The environment and necessities of each group would cause differences and varying rates of progress. One group would gain the bow a thousand years before another.

Long before the beginning of the glacial period, therefore, some groups must have been far ahead of others, and in the manufacture of stone implements some tribes excelled others; some making ruder ones than others, and some perhaps making well-finished, polished tools. There are a good many arrow- and spear-head shapes, and it is possible that each form originated at a different time or in a different locality. And in our present state of knowledge of

these matters, no time position can be assigned to many American stone tools, polished or not. They may have been used over and over again by various tribes for centuries, or for a thousand years, or they may have been made by tribes of our own day. Some of these tribes made no smoothed or polished implements, though otherwise of advanced type, and polished implements have been found that may be many thousand years old. This is no indication that tribes do not change, but that development began and continues unevenly, and that tribes existed ten thousand or more years ago that were in advance of some that are extant to-day. Nobody can say whether the stone implements, rough or smooth, that have been found in Chiriqui belong to comparatively modern or to very ancient times. The whole subject of stone implements appears to be in a chaotic state, mummified and petrified by a slavish respect and devotion to European patterns. It is a case of cart before the horse. It will be apparent that I do not consider the finish of stone tools, in the present state of our understanding of them, any guide for a world-classification of peoples in a time-scale, especially in North America. This has been admitted by others back to a certain point, but beyond that point they have continued to play follow-the-leader with their world-classifications of “Paleolithic” and “Neolithic,” two of the most confusing, misleading, and useless terms ever invented. Below the limit of the ice action there is nothing to fix the age of stone tools when found on the surface or near it. “Paleoliths” and “neoliths” might therefore be picked up side by side, and the paleolith might not be as old as the neolith, or both might be of the same age. And if a well-made tool, or one resembling some of to-day, is found in an ancient gravel, it does not necessarily mean an

intrusion, but that men lived in that far past who were more skilful than some of their neighbours, and more skilful than we have heretofore been willing to admit. That very ancient men made very rude tools is doubtless true, but that *all* ancient men made rough tools of the same style down to a certain fixed time, and then all began on an improved or a smoothed type, is undoubtedly wrong.

How the Amerinds came here I explain by a theory that there was before, or perhaps during the early part of the glacial period, a wider distribution of land surfaces on latitudinal lines, which invited latitudinal migrations.[1] These land surfaces may have been no more than groups of larger or smaller islands which have been since wholly submerged or have left only their highest parts above the sea. Before the beginning of the glacial cold, a mild climate extended to the North Pole, facilitating migrations also in that region. Changes in the ocean's bottom were probably greater in pre-glacial time than now, but they have not altogether ceased. It is little more than fifteen years since a new island appeared off the Aleutian chain, and I think it is doubtful if any of that group existed above water six or eight hundred years ago. I am also of the opinion that no human life was in Alaska or in Northeast Siberia five hundred years back.

Races not being all of an even grade of culture before the beginning of the cold period any more than now, the tribes that found themselves isolated on this continent by changes in the land levels and by the southward extension of the glaciation, were unevenly developed, some being in advance of others in various ways, though none, of course, had passed beyond the use of stone tools, a condition in which

they practically continued down to the Discovery. In this respect the term, “Stone Age,” as indicating a condition, is applicable, but it would not be possible to differentiate it into “Paleolithic” and “Neolithic” periods. The cold pushed them all southward, whether they came by northlands or by latitudinal lands, or both, towards the narrow funnel-like part of the continent, and also to the lower levels, as there was no chance for latitudinal expansion as in the Eastern Hemisphere, the most advanced tribes being the most southerly, if not from original position, because they were able to choose. Eventually communication with Asia and Europe by the north was by the glaciation severed completely, as it had previously been latitudinally by the disappearance of favourable land surfaces, and communication by the north remained closed till within three or four hundred years. The most crowded tribes developed most rapidly, because such development was imperative for self-preservation, and their culture filtered through in diminishing ratio, according to distance, to the less crowded regions—that is, to the climatically less favourable regions; but all who were closely crowded into the “funnel” progressed along similar lines and in much the same degree, *without regard to relationships*, so that we find in the narrow part of the continent, where the largest number found refuge from the cold, many different stocks in almost parallel stages of culture. There were no isolated “areas of characterisation” as in the latitudinally broader lands of the Eastern Hemisphere, though in some cases there were slight barriers tending to produce or maintain slight variations. The long longitudinal chain of the Sierra Nevada abounding in glaciers to a late date, and to a less extent that of the Rocky Mountains, brought

about a partial isolation of the stocks in the great north-and-south migrations, maintaining previous differences and originating others, so that now we distinguish differences between what is called the Atlantic and what is called the Pacific group, while they are yet practically the same.[2] The tribes farthest advanced at the beginning of the isolation on this continent would not necessarily continue at the front of progress, for a change of conditions that might cripple such tribes might at the same time be beneficial to others previously inferior. For instance, as the heat gradually returned, the highly developed lowland tribes began to find themselves at a disadvantage, which grew with the intensity of the heat, while others, inured to harsher conditions, found warmth stimulating, and they began to develop germs received from the superior but now declining stocks. “The American Indians,” says Brinton, “cannot bear the heat of the tropics even as well as the European.” The heat, which at first seems to have been intense in the daytime, then caused a decline of the highest stocks, and a corresponding progression of lower stocks existing on, or migrating to, higher levels. The Yucatec tribes declined, while the Nahuatls, at higher altitudes, began to develop. The finest monuments of North American antiquity, for these reasons, are generally found on comparatively low levels and below a certain latitude, where conditions during the greatest cold were most favourable; conditions that may have continued fairly favourable down to within, say, a thousand years.

Long before the dawn of the Columbian era, therefore, the Amerind peoples had become, through the influences indicated, a world-race by themselves, existing in various stages of the same general culture,

and with a rising and a declining of tribes and stocks directed by environment and circumstances. The great stocks surviving at the beginning of the Columbian era may be approximately traced by their languages, in layers, from Panama northward, about as they expanded mainly eastward of the Sierra Nevada in response to the gradual relief from the pressure of the cold. The Yucatec tribes had held the region south of the Tehuantepec isthmus, and owing to this slight barrier, and perhaps to another barrier of a strait through the land about on the line of the proposed Nicaragua canal, had developed somewhat differently from tribes to the north, and may also have preserved more of their original character. Thence stretching north far into the United States was the great composite Shoshone, or Uto-Aztecan family, in all its variations, with what appears to be an "island" of Athapascans or Boreal men preserved in its midst by glacial conditions lingering in the high regions near the Mexico-United States line; then follows the Siouan; then the widespread Algonquian stock; next the Athapascan; and finally the Eskimauan, which had always been held against the edge of the glaciers by the back pressure of the southern stocks, and being most remote was less affected by filtration from the development centre, and thus remains to-day a more differentiated stock than any other.[3] The western arm of these stocks was generally farther north than the eastern because the climate was and is milder in the west, the trend of the ice front being now, and apparently always having been, N.W. to S.E. Distribution of skill in pottery follows about the same lines, "petering" out with stocks farthest from the Yucatec centre. The Algonquins crowded the Athapascans off to the N.W., and together they crowded the Eskimo to the limits

of human subsistence. In California many stocks found refuge in a climate kept comparatively mild by the ocean currents, where they secured subsistence on fish, and went no farther south. Along the Gulf coast were other tribes resting somewhat aside from the great continental ebb and flow, while in Florida and in the islands of the Caribbean region there was sufficient separation to produce a slight differentiation from the surging continental stocks. Remnants of other stocks were scattered here and there through the regions below the glaciated area. Mingled with all these developments there were probably certain traits and “tinges” derived from earlier ancestry, and these, with the similarity of development of all races under like conditions prevailing wherever human beings can live, fully account for resemblances to other-world tribes and peoples that have caused so much speculation.

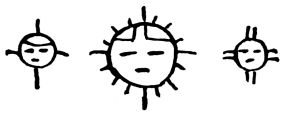
There has been an error, I believe, in considering the glacial period as of the remote past. It does not seem to have yet closed. It influences our climate now, and probably a thousand years ago its meteorological effects were marked as far south as Yucatan. The glaciers of the Northern Hemisphere everywhere appear to be slowly disappearing, and not so slowly either, if the Muir can be taken as a gauge, for it has been for twenty years receding at the rate of 500 feet per annum, and probably at the same rate before that. However this may be, it is probably less than 5000 years since the ice front was at Lake Erie. Eminent geologists have estimated it at less than 7000, based on the erosion at Niagara; but as the erosion immediately following the disappearance of the ice is extremely rapid, it seems safe to cut down the estimate. The subtleties of meteorology are far from being understood also, and

the theories as to the causes of the cold seem mere guesses. Considerable heat there must have been during the glacial period, or there would have been no glaciers.

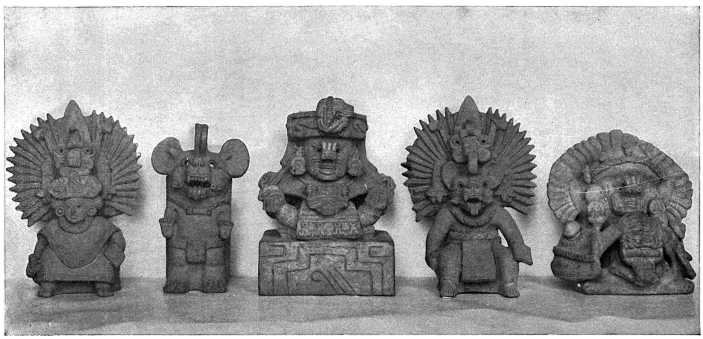
On the theory of the ethnic unity of the Amerind people, I have briefly brought together in chapters notes on their chief habits, products, languages, etc., so that the reader may be able to compare. In collecting material that is now obtainable, but which will shortly be gone forever, much remains to be done, and to be done quickly. If this book helps to arouse a deeper public interest in the gathering of this material, and in the general study of the subject, I shall feel it needs no apology.

F. S. DELLENBAUGH

NEW YORK, January 31, 1900.



MOKI DRAWINGS OF THE SUN



TERRA-COTTA FUNERAL URNS FROM A MOUND, VALLEY OF OAXACA, MEXICO.

Average height, 15 inches. This is a complete series preserved in the order in which they were found. The usual number of these urns

in a series was five. Nothing was put in them and they were not placed inside the burial chambers but in front of the door, on the roof, fastened into the façade, or in niches over the door. See *Funeral Urns from Oaxaca*, Marshall H. Saville, *American Museum Journal*, vol. iv. pp. 49–60, and *Explorations in Zapotecan Tombs*; same author, *American Anthropologist*, N. S., vol. i. April, 1899.



MOKI DRAWINGS OF SQUASH-BLOSSOMS

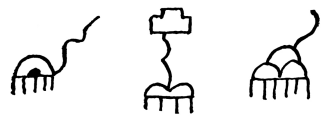
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NOTE

Particular attention is called to the appendix by means of which the linguistic stock to which a tribe belongs may be readily found. First refer to the *list of tribes* where the abbreviation following the tribal name, will indicate the family or stock to which that tribe belongs in the *list of stocks*. Example: "Navajo. *Ath.*" refers to "*Ath.* ATHAPASCAN," in the stock list, Athapascan being the linguistic family to which the Navajo belong. The geographical range of the stock follows.



MOKI DRAWINGS OF RAIN CLOUDS AND LIGHTNING

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NOTE

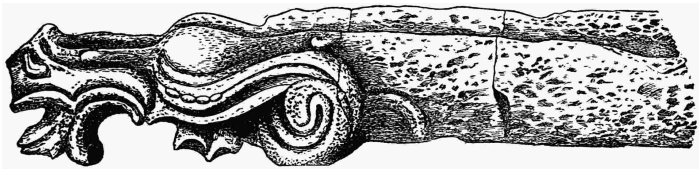
The cover, designed and drawn by the author, has for its central feature a sketch of a stone animal head removed from one of the buildings at Copan and brought to the Peabody Museum by Saville. The sacred butterfly of the Mokis fills the four corners of the space around this, and above and below an arrangement of Puebloan scrollwork completes the composition. On the back is a figure representing the terra-cotta statue shown more exactly on page 113, with a further arrangement of scrollwork and some minor Moki symbols.

THE NORTH-AMERICANS OF YESTERDAY



American Museum
Marshall H. Saville

TERRA-COTTA FUNERAL URN FOUND IN FRONT OF A TOMB AT CUILAPA, MEXICO
Height: 2 feet 3¾ inches. Shows traces of four colours: white, yellow, red, and blue



GARGOYLE—SERPENT HEAD
From débris of temple, Copan

THE NORTH-AMERICANS OF YESTERDAY

CHAPTER I

INTRODUCTORY

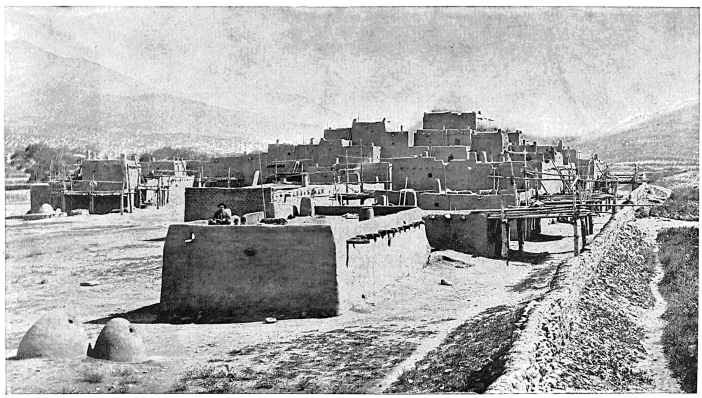
WHEN those rapacious enthusiasts, the Spaniards of the sixteenth century, had unfolded some of the mysteries of the great half-world that the resolution and daring of Columbus had opened to them, they found it everywhere already peopled, though often sparsely, by a race strange to the other half, with totally different ideas and customs, existing in various degrees of sylvan felicity, or in the budding promise of a civilisation. They also found imposing ruins that told of the long previous departure of some of the occupants of this land into the vaster unknown, and indeed evidences of still earlier hosts that had travelled the dim pathway through the outer darkness. These new lands were believed to be some part of India, and because of this first error the inappropriate title of “Indians” was bestowed on the

natives, and this name continued to cling after the mistake was discovered, growing more and more confusing as intercourse increased with the real Indians, till now in our day it is exceedingly troublesome, and we are compelled to differentiate, when accuracy is desirable, by saying “East Indian,” “Red Indian,” or “American Indian,” etc. To add further to this confusion, many persons persist in considering the Algonquin and Iroquois as the type specimens of “Indians,” and exclude all who do not accord with this limited and erroneous standard. The natives of the Western Hemisphere appear all to have been of one race, for there are only minor differences, which will be shown in following pages, and there is therefore a necessity for a broad designation for all these people. When these words were first written I had determined to adopt the term “Redskin” for use in this book, but learning that Amerind, compounded of the first syllables of American and Indian, had been suggested by the Anthropological Society of Washington, I gave it the preference over Redskin, and on full examination was convinced that it is a satisfactory and useful substitute for “Indian,” and, in order to avoid the latter, have used it exclusively in these pages, except where another writer is quoted.

This Amerind people were indeed more remarkable than has been popularly appreciated.[4] They possessed, as a rule, strong personality, great physical vigour, quick intelligence, and dauntless courage. Their brain power was of a high order and the cerebral quality extremely fine; capable through the processes of time of a development second to none. They had their trials, their wars, their sicknesses, and their various tribulations before the Europeans fell down upon them; but had the cargo of

misery, disease, and death for them which freighted the bold caravels of Columbus possessed tangible weight in proportion to its magnitude, those vessels would have plunged to the depths of the unknown sea. But Destiny had traced another course for events, and thus the gay banners, glowing on one side with Hope for one race and black on the reverse with Despair for another, flaunted at length their ominous folds in the sunshine of the Amerind continent. Great good fortune it was for the Europeans, especially for the Spaniards, but the latter failed to read their star aright. Upon the conquered tribes, an easy prey before the superior weapons of the invaders, they lavished a cruelty which eclipsed that of savages, and settled like a blight over the country, to finally stifle by just retribution the haughty power of Spain herself, and wrench forever from her the last foot of the domain which the unfaltering courage of the Adelantados had bequeathed to her. To attempt to gloss over the oppression of the Spanish rule of the Amerind people would be fruitless. There is no excuse for it. Fresh from the methods of the Inquisition, the Spaniards themselves perhaps were not wholly aware of the horror of their acts. Unfortunately, they do not stand alone as sinners in this respect, and the contemplation of the early intercourse of Europeans and Amerinds is not likely to give a candid person an agreeable sensation, as it is frequently difficult, if not impossible, to decide which race is the one to whom rightfully belongs the description, “treacherous, bloodthirsty, and savage.” Certain it is that the Amerinds from the very beginning had numerous vivid lessons from the whites in murder, treachery, and kindred crimes.[5] They were frequently slain without cause or mercy; they were enslaved when

possible; their records were destroyed; and, most terrible of all, they were burned alive at the stake. But this latter diversion had been practised in Europe, where St. Ferdinand with his own hands heaped the fagots on the blazing pile. The Conquistadores of the sixteenth century were versed in as much cruelty as the Amerinds had ever dreamed of; yet in the midst of it all there were men like Las Casas and Viceroy Mendoza, who had no sympathy with the barbarities practised, and whose characters bring relief in the broad and hideous blackness. Ship-loads of slaves were carried off each year, and the system of *repartimientos* placed every Amerind in bondage.



SOUTH PORTION OF THE TEWA PUEBLO OF TAOS, NEW MEXICO
Adobé construction

Opposition was punished in the most terrible ways possible to devise. In one instance the offenders, seventeen or eighteen caciques, were strangled and mangled by dogs kept for the purpose, the execution taking place in the public square, so that the struggles of the unfortunates might make a spectacle. Again the Spaniards invited some chiefs to a conference, as told by Brinton, in a large wooden building, which was then burned up with the chiefs

in it. But it is not necessary to go back so far for examples of the treacherous brutality with which the whites have treated the Amerinds. Were it so, the cruelty and injustice might perhaps be regarded as merely circumstances of the period, but Beckwourth, in his *Narrative*,[6] relates an incident, also referred to by Washington Irving, quite as horrible as any that occurred in the sixteenth century. Beckwourth came upon some white trappers who had captured two Amerinds from a party of Arikarees who had stolen their horses. The Arikarees offered to return some, but not all, of the horses in exchange for the prisoners, but the trappers declared they would burn their captives alive if all the horses were not returned. The threat was disregarded. Thereupon the logs on the top of a huge fire were separated, the two helpless, chain-bound prisoners were dropped into the red furnace, and the flaming logs replaced. “There was a terrible struggle for a moment,” says Beckwourth, “then all was still.” And thus was another lesson of the mercy and justice of the White rendered unto the Red.

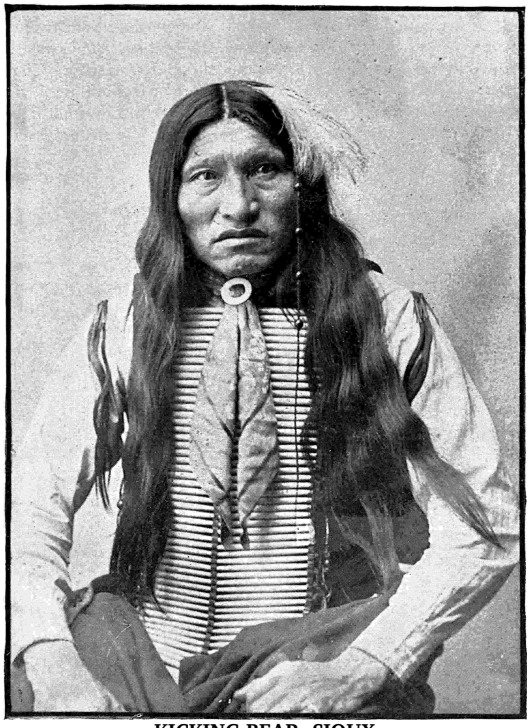


SEATED FIGURE CARVED IN TRACHYTE
From débris of hieroglyphic steps, Copan. Slightly larger than life size

Nearer to us than this we have an incident even more diabolical, because without the provocation the trappers had. Horse stealing down to recent times in the West has always been liable to punishment by death, so the trappers might be somewhat excused on that ground in the minds of some, but in the year 1898, in the Indian Territory, two Amerinds were burned alive at the stake by a mob of whites. The accusation, too, was a mere suspicion, and it was later established that the Amerinds were perfectly innocent. After such deeds we may well pause when our inclination is to vaunt the superiority of the white men over the red.

Notwithstanding the popular idea that the Amerinds were devils incarnate, many tribes when first encountered were kindly, and trusted the newcomers till the moment came, as it soon did, when they were basely deceived. That all tribes were trusting is not claimed, but it is well known that many explorers found the Amerinds ready to receive them fairly and honestly. Neither Cartier nor Roberval met with hostility from natives, and the success of the straightforwardness of Penn in his dealings with them is unquestioned.[7] It has been stated that the European is no more than a whitewashed savage, and his intercourse with the Amerind people bears out this description. There was often provocation on both sides, augmented by the complete ignorance of each other's ways and customs. Actions which were correct according to the manners of the Amerinds were offensive to the whites, and *vice versa*, and, to add to the ever-increasing hostility, the whites resented upon all Amerinds the crime or indiscretion of one or a few members of a particular tribe. If an Amerind committed a crime, the next one met with suffered for it. When Walker, in 1833, treacherously abandoned the line of work Bonneville had laid out for him and struck down the Humboldt for California, one of the men had his traps carried off by some of the Shoshokoes. He swore to kill the first one he should meet, and so their trail was one of blood. At one place they murdered no less than twenty-five unsuspecting red people without provocation. This was the manner in which these pioneers exhibited their superiority. There have always, too, been certain whites, more or less outlawed, like one Rose, who have struck up a friendship with the worst tribes for the purpose of

inciting them against the whites to advance their own profit.

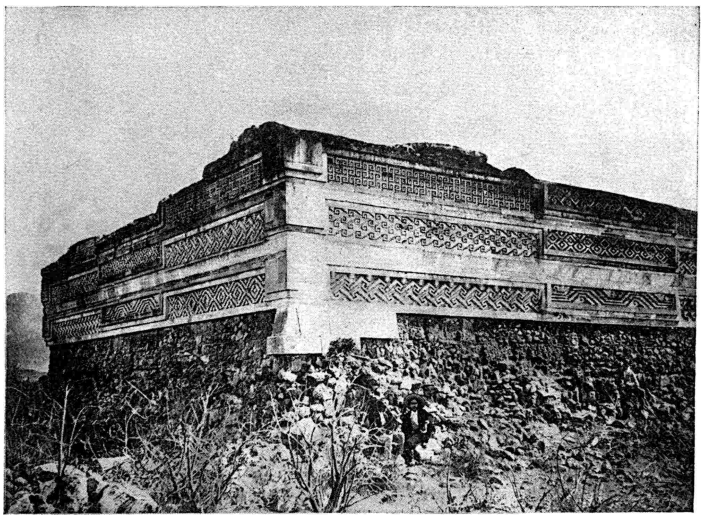


KICKING BEAR, SIOUX

Previous to the European invasion the Amerind was not always at war, though many seem to think that he was. His territorial lines were generally well defined, and, as a rule, he stayed within them. Their villages, for the Amerind was always a village dweller, were far apart north of Mexico, and as long as there was no contention over property or water rights, things went smoothly, and even during hostilities intercourse was not always entirely broken off. So that there was frequently a large measure of security and periods of uninterrupted peace. He *worked* at hunting, fishing, and, in all the tribes east

of the Mississippi, in Mexico, and many tribes west, at agriculture. The arrival and the westward movement of the Europeans crowded back the tribes across boundaries and upon lands they had no right to, and frequent wars were the inevitable result. Finally the acquisition of the horse gave facility of movement never before possessed, and made quick journeys and night attacks feasible, while the desire to secure as many of the valuable animals as possible added a new and great incentive to theft and consequent warfare. The Amerind began to change, in fact, the moment he acquired the horse and the gun, adapting both to his needs and using them with consummate skill. The whites did not try to understand him, nor were they superior to him in the matter of patience or forgiveness. One thing was well understood by the whites, however, and continues to this day, and that was that an Amerind has no rights that a white man is bound to respect, or even to consider. The natives north of the Aztec country were regarded as vagabonds and vagrants who had no right to anything, while those of Mexico, whom the Spaniards had meanwhile reduced everywhere to abject slaves, were believed to be a different race, with former qualities that were greatly exaggerated by the Europeans. And then, later, in the effort to counteract the extravagant notions entertained of the Aztecs, their remarkable growth, and that of the Mayas, was by some writers reduced to the level of that of the Pueblo tribes of New Mexico and Arizona, which is undoubtedly a serious error in the other direction. Montezuma was probably not a king nor an emperor as those terms are understood by us, but it is difficult to accept him as little more than a Moki war-chief, especially as one can readily see that a few steps farther, even in the line of Moki

development, might have produced a form of government partaking of the monarchical, but different from anything that we know about.[8] Ever since I saw one of our Arizona Pai Ute guides, a chief of his band, command a follower to take off his shoes as he reclined by the fire, I have suspected the existence among the Amerinds of a latent germ of aristocracy.



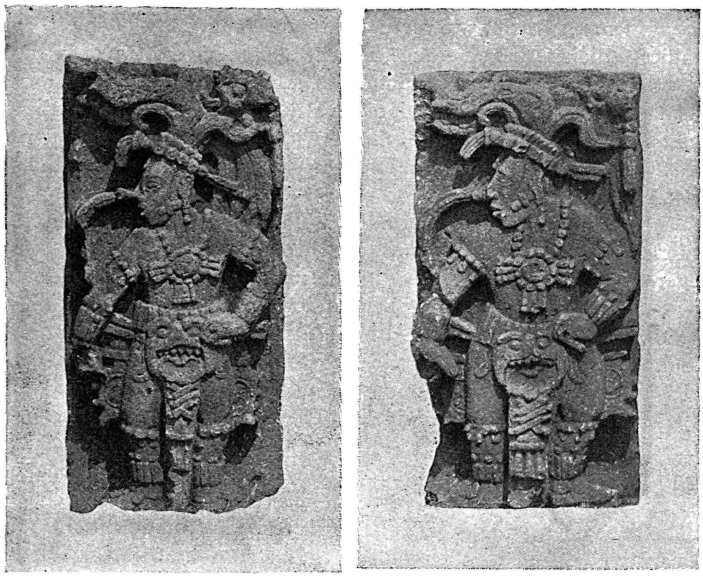
A CORNER OF A MITLA RUIN, MEXICO

In the first flush of the discovery of America, Europe was wild with the romance of it, and mystery was the order of the day. More wonderful things still were expected. Fables that had done good service for centuries were transported to the new lands, and there blazed up with the mysterious uncertainty of the *ignis fatuus*, luring and deceiving, till the gold-thirsting Europeans struggled in the pursuit of such phantoms as the "Seven Cities." The most extraordinary tales appeared tame in that atmosphere of dazzling imagination. Exaggeration of one kind or another has ever since been the

inheritance of the Amerind people, and it is only within a comparatively few years that these "Americans of Yesterday" have been scientifically studied and their real character and attainments given proper places. The whole matter of American ethnology and archæology is new; so new that it is impossible to speak with decision on a great many points. In the United States we have usually regarded the Amerind as the incarnation of evil; a treacherous demon with a bloody knife in one hand and a scalp-lock in the other, and we have generally refused to consider the finer traits of his character. So callous have we become to his good points that Cooper is ridiculed for his delineation of Amerinds that have instincts or principles above the brute, and yet Cooper's chief models were the Iroquois who established a remarkable political organisation.

It is not necessary to be what has been scornfully called "an Indian lover" to be interested in this extraordinarily homogeneous race that was scattered from Alaska to Patagonia. Such interest should be a matter apart from sentiment. We are interested in the primitive man of Europe; few would have been pleased to live with him. So the question whether we "like" the Amerind people and would enjoy social intercourse with them is not to the point. It is a matter of education; a matter, in fact, of the study of ourselves as others saw us some thousands of years ago, for the Amerind people were passing through phases of human existence which, in all probability, our remote ancestors also passed through; so that by examining this kind of life we are holding up the mirror to ourselves. Till recently the apathy shown on this subject was surprising. People generally were not aware that there were differences in "Indians," or that they spoke different languages. The idea that

there was any profit in studying them was popularly considered ridiculous. He was a “good-for-nothing,” and that was all that there was about it. But we can no more find fault with the Amerind for not being a European than we can with a stage-coach for not being a locomotive. We must accept him as he was, and as he is, and wherever possible study him and write him down so minutely that generations of ethnologists to come will shower blessings on our heads. We must constantly remember that the Amerind point of view is different from ours, and that we too are only in a transitional stage.



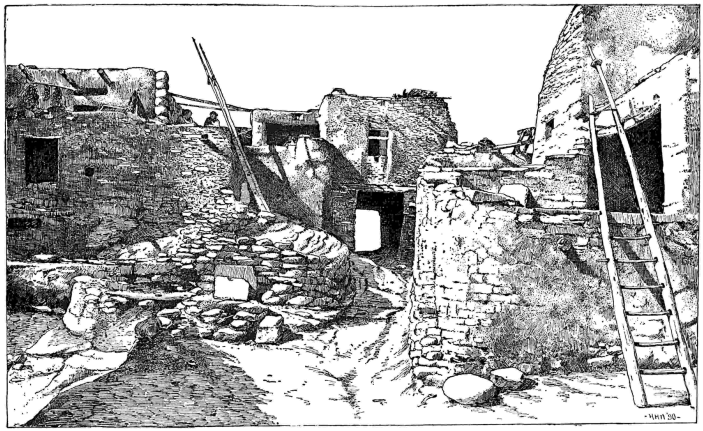
SCULPTURES FROM TERRACE EAST OF THE GREAT PLAZA, COPAN

The Amerind people, like ourselves, represent merely a stage of human progress. Our stage is in advance of theirs, but it is by no means perfection. We do not scalp, but the revolver is quite as active as their scalping-knife, and we require a great number of policemen to keep us civilised. As for war, the

European race has certainly not been backward in that respect. In Europe to-day vast bodies of men are withdrawn from every other service and trained for war with a completeness that the Amerind never dreamed of; and in the United States we have probably already killed more men in wars than ever at one time peopled it in aboriginal days. For in those days the various groups of Amerinds were separated by tracts of unoccupied territory; unoccupied except as the hunters roamed over it in search of their food, and the population outside of the Aztec country and Central America was generally sparse. Nor was the distribution of this population always the same as it was revealed to us by the Discovery. Tribes developed, rose to power, declined and passed away, leaving little, where their art development was slight, to indicate their former presence, no matter what may have been the degrees of their political attainments. Had not our own history come in to rescue the confederacy of the Iroquois, their remains, assuming them to have declined without further art development, would have conveyed no suspicion of their political organisation.

Back and forth the Amerind race moved, up and down, across the face of the American continent through the forgotten ages in ever shifting waves impelled, in the main, by climatic conditions and food quest, some leaving behind no record, others bequeathing to the future monuments and edifices that astonished the world and gave birth to elaborate and far-fetched theories to account for a development that seems to have required no more than time and the circumstances which existed. All the remains on this continent appear to be palpably American; the work of the Amerinds in their various

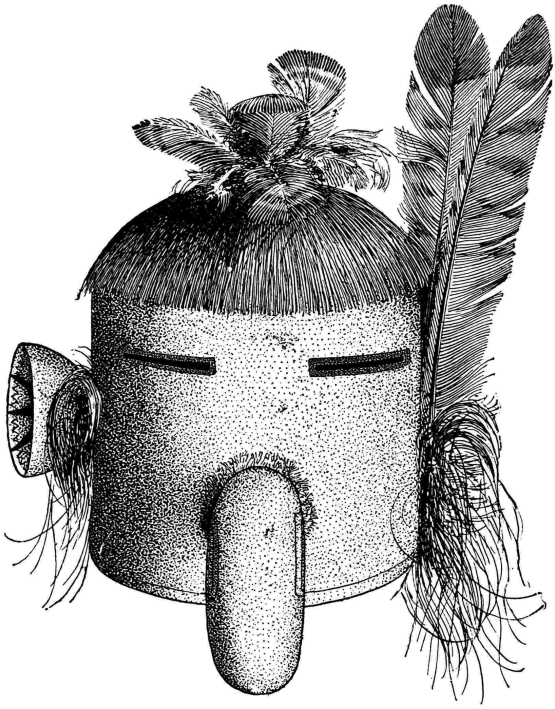
degrees of progress. Whether they came from one source or several, they have been long enough here to become homogeneous from one end of the hemisphere to the other, and this, it is evident, would require a great stretch of time.[9] They clearly separated from the other inhabitants of the world, in any case, at a period before those inhabitants had developed present characteristics. From the time the human race was born, whether as an ape or as it now stands, there was differentiation of habits, customs, and knowledge which has never ceased and which never will cease. But as light, air, and natural conditions are similar or the same the world round, and as cerebral matter seems to be practically the same in all peoples, humanity has passed everywhere through about the same stages of development, and each stock or tribe in time has arrived at about the same place on the road of progress because they could not help it. Conditions might force one people ahead while other conditions might be retarding another, but whatever progression there has ever been was made on practically the same lines. The same race, however, does not throughout always develop evenly. Sir John Lubbock has said that "different races in similar stages of development often present more features of resemblance to one another than the same race does to itself in different stages of its history," and to-day in Arizona there exist near to each other two branches of the widespread Shoshonean[10] stock, the Pai Utes and the Mokis, who exhibit the most marked differences of customs, the latter living in substantial houses of stone while the former occupy the rudest kind of brush wikiups.



A KIESKABI, OR COVERED PASSAGE, AT WALPI, ARIZONA

The Amerind people were living in various stages of progress at the time of the Discovery. The Mexicans, according to Lewis Morgan, were “one stage higher than the Mohawks and one stage lower than the warriors of the *Iliad*.” Accepting this as correct, we would be able to trace human development back of the Greeks through the Amerinds of North America. Morgan suggested the classification of mankind in three broad ethnic stages: Savagery, Barbarism, and Civilisation,[11] the first ending with the acquisition of the bow and arrow, represented here by the Pai Utes; the second ending with the smelting of iron ore, represented by the early Greeks; and the third beginning with a phonetic alphabet, and represented by ourselves. In this scheme the Mexicans would fall in the middle period of Barbarism. This is a fairly good working basis, but, like all generalisations, it is only general. It must not be rigidly adhered to. The conditions on this continent were quite different from those in Europe, and consequently the line of development could not be precisely the same. There seems to be no good argument yet advanced and no

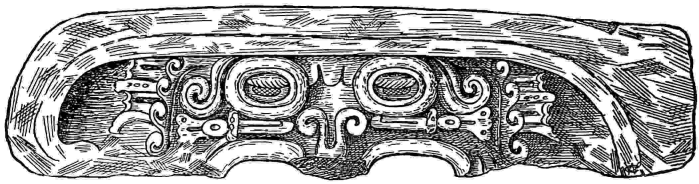
archæological data yet exhibited that compel us to seek an outside derivation for the Amerind race; and this being so, it is about as reasonable to search this continent for the original home of the yellow race as to go to Asia for that of the red. That they may have come from there is possible, and so also it is possible that they came from Europe. Nor should we at present exclude even the lost Atlantis,[12] for the geography of the world was not always as it is now, and the elevation and subsidence of lands are still in progress. This, of course, is admitted, as also that there was a land connection across the Atlantic before man appeared in the world; but man may have appeared earlier than we suspect, and this lost land may have been in sunshine later than we believe.[13]



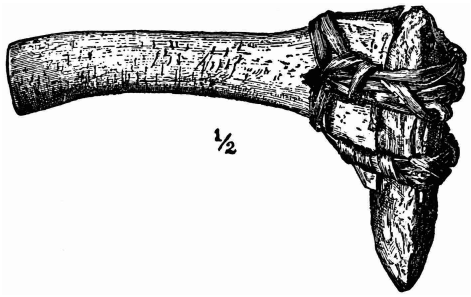
MOKI MASK OF PAWIKKATCINA

The Amerinds of North America were practically a people of stone culture, because while some had developed an ability to employ copper to a limited extent, they used stone tools for most of their work; their highest government appears to have been the confederacy, with in some cases perhaps a monarchical tendency; they were without domestic animals; without beasts of burden; without fireplaces or chimneys; without inside stairs; and without wheeled vehicles. There was no mystery about them. They ranged the continent, as has been noted, impelled by food quest and climate. They lived bravely and they died without fear. The following chapters will tell some of the things they did, with the hope that readers may arrive at a better

understanding of the people that so long had a half-world to themselves.



SPECIMEN OF SCULPTURE ON HIEROGLYPHIC STAIRWAY, COPAN



ESKIMO JADE ADZE

CHAPTER II

LANGUAGES AND DIALECTS

THERE were many tribes and many tribe-groups, or, as the latter are usually designated, “stocks,” among the Amerinds. These various stocks differed considerably from each other in manners, customs, possibly in origin, and in languages, the last often being widely different.[14] Yet there was a homogeneity binding them all together as one distinct race while at the same time separating them completely from other races of the world as now constituted. The subdivisions of the Amerind stocks were not always contiguously distributed on the continent, but, as in the case of the Navajo-Apache branch of the Athapascan, sometimes separated from their kindred by wide stretches of territory peopled by other stocks, and also, as in the case of the Navajos, somewhat altered by absorption of people of another stock. Various methods of arranging the distribution and classification of these stocks have been attempted, but the basis of language appears to

offer the most advantages and the greatest accuracy. There are some who dispute the correctness of the present analysis of the Amerind languages, and deprecate the classifications obtained by this means, [15] but foremost students, like Brinton, Gatschet, Powell, Steinthal, and others, have pronounced unequivocally in favour of its value when applied with judgment.

"Nothing is so indelible as speech," wrote George Bancroft; "sounds that in ages of unknown antiquity were spoken among the nations of Hindostan still live in their significancy in the language which we daily utter." And this fact has been the corner-stone of the modern science of linguistics, which maintains accordingly that the possession of similar *language roots* and grammatical construction by two otherwise distinct tribes proves a relationship or a common descent. In this way, as is well understood, the Indo-Germanic—that is, our European stock—has been traced back toward its origin. The accuracy of this has been questioned, but it doubtless affords the best method attainable.[16] The same principle is applicable to the American languages, which afford an immense field for linguistic study in their great diversity. This diversity is not popularly understood, the majority of our people believing that if a person can speak "Indian" he could converse with every tribe on the continent. Yet within a limited area in Arizona he would find useless in four different tribes the language he had learned, say, in California; and in California itself some twenty or thirty tribes would listen to his words, as well as to those of each other, without a gleam of understanding. And not one of the languages of any of these tribes would serve him in the Mississippi or in the Atlantic region any better than English, for the Iroquois and the Algonquin and

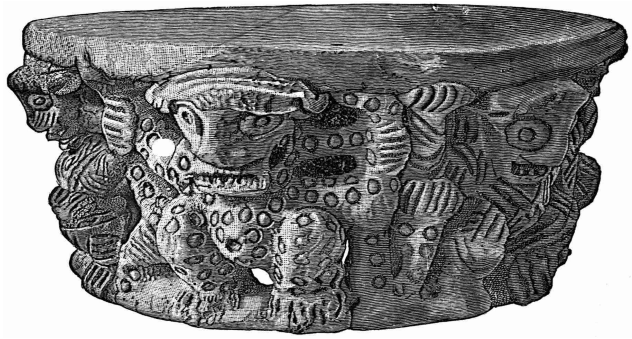
other Eastern tongues are as widely different from those of California as they are from each other, while every one contains numerous dialects, or what may be called sub-languages, also exhibiting great variations. The early missionaries were slow to discover these facts, and it was a source of discouragement for them to learn that, after long study to acquire a language, it was spoken by only a single group of the natives, while adjacent to them dwelt others who spoke a totally different one.[17]



"SINGING-GIRL" SCULPTURED IN TRACHYTE
From débris of Temple 22, Copan. Slightly larger than life

Even where a group of Amerinds speak related languages, or dialects, there are, and were, such wide variations that the one is not understood by those speaking the other. Therefore we have in North America not only a large number of distinct languages, but within these separate languages an immense number of dialects or sub-languages, sometimes as many as twenty in one stock varying from each other as much as, say, English and German. At least sixty-five of the separate stock languages are distinguished in North America which appear so radically separated from each other that it is believed impossible that they ever should have sprung from the same parent, unless it may have been at a time so remote as to be beyond the scope of present investigation. In the classification according to these languages it has been necessary to have a general designation for each stock, and in selecting the names to be thus used, Powell and others have observed the law of priority of mention, as far as possible, and have derived the stock name from the author first mentioning it in print since 1836, the date of Gallatin's great work, which is taken as the foundation. The termination "an," or "ian," is added to distinguish the family or stock name from a tribal name, for often a tribe bears the name given to the whole stock. As examples, Algonquian may be mentioned as a stock name taken from the tribal name of Algonquin, and Mayan from the tribal name, Maya. This is not always strictly adhered to outside of the Bureau of Ethnology because of its frequent inconvenience, and in the case of Mayan the term Maya is preferably used by some investigators and writers as being simpler, and

Brinton gives it as the stock name.[18] Following the distribution of tribes as closely as possible at the time of the first contact with white men, Powell and his able associates of the U. S. Bureau of Ethnology in Washington have produced a map, based on Gallatin's.[19] The separate stocks north of Mexico are each represented by a different colour, every colour standing for a variation in language as great as that between Hebrew and English, not related as English and Spanish. Fifty-eight are thus shown, but south of the Mexican border are perhaps a dozen more. Continuous study may succeed in bringing some of the stocks into relationship or in dividing them still further. In their beginning, languages probably changed rapidly; memory was deficient, intercourse slight, and comparatively short separations of tribes speaking originally the same tongue were sufficient to establish entire new sets of words. These separations were apt to occur frequently when methods of subsistence were crude and difficult, migrations frequent, and population sparse. As races developed memory grew to better proportions, and after the introduction among the Amerinds of mnemonic records and other memory devices their languages became more crystallised, till within the later centuries changes have come about slowly. That many more languages once existed on the American continents than we have any trace of is, therefore, probable. By intercourse, by intermingling, by the crossing and absorbing of stocks was finally produced what we find to-day, or did find yesterday, a reduced number of different stocks, but still so many that the archæologist views the field with amazement, and the layman looks upon it with incredulity.



TERRA COTTA STOOL, CHIRIQUI



ALTAR Q, COPAN, HONDURAS
From photograph by M. H. Saville, Museum of Natural History

And these Amerind languages are as remarkable for their separation in a body from the Old World languages as they are in their separation from each other. This in itself seems to bestow upon the Amerind people a vast antiquity in their isolation from other peoples, and adding to it the testimony of their art works, their implements, and their pictographs and hieroglyphs, there seems to be no escape from granting them to be a division of mankind by themselves.

Not only does the differentiation of the stock languages indicate antiquity, but that of the dialects adds strong testimony. Brinton cites Dr. Stohl's opinion that "the difference which is presented between the Cakchiquel and the Maya dialects could not have arisen in less than 2000 years."[20]

It may be urged that the Amerind languages are loose and shifting and that a few centuries would be sufficient to bring about on this continent a complete and total difference in a language from its mother tongue in, we will say, Siberia; but the more closely the matter is studied the more apparent is the tenacity with which each stock retains its special form. Of this tenacity a modern example exists in the village of Tewa (or Hano) now forming one of the seven villages of the Moki, and situated on what is known as the "First or East Mesa." The people of this village are not Hopi (Moki) stock, Hopi being the Moki name for themselves,[21] but belong to a Rio Grande stock, the Tañoan of Powell, and the Tehua of Brinton, having come from the Rio Grande country to their present location somewhere about 1680. The Moki, who are believed to belong to the Shoshonean stock (though they are probably composite), permitted them to repair and occupy old houses which stood on the site of the present village and there they have lived amicably ever since, to all appearances completely amalgamated with the Moki. The ordinary observer sees little to distinguish them from the other Amerinds of the locality, and they speak the Moki language like Mokis, but within their own village and by their own firesides they largely use the speech of their forefathers, and to all appearances will go on speaking it till the end. Here, then, is this little community separated for a long period and by many miles from their immediate

kindred, mingling daily with people of another stock and another language, yet preserving their own language intact.[22] And if this has happened once within historical times it may have happened before any number of times, and goes to prove that these various languages have in them elements of stability greater than has heretofore been admitted. Powell says that in his long study of savage tongues he has everywhere been "impressed with the fact that they are singularly persistent, and that a language which is dependent for its existence upon oral tradition is not easily modified." On the other hand John Fiske expresses the opinion that "barbaric languages are neither widespread nor durable. In the course of two or three generations a dialect gets so strangely altered as virtually to lose its identity." The Algonquian languages were spread over an immense area, and the Shoshonean had an even greater range.



SOUTH-WEST CORNER OF THE TEMPLE OF XOCHICALCO, STATE OF MORELOS, MEXICO

Brinton contradicts the assertion of Waldeck "that the language (of the Mayas) has undergone such extensive changes that what was written a century

ago is unintelligible to a native of to-day. So far is this from the truth that, except for a few obsolete words, the narrative of the Conquest, written more than three hundred years ago by the chief, Pech, could be read without difficulty by any educated native." Thus it seems probable that the Amerind languages extant have been spoken nearly as we know them to-day for a great many centuries, and that modifications crept in slowly; so slowly that the language roots and grammatical construction of the various stocks are so distinct that they form the safest guide now available in the classification of the various branches of the Amerind race; and furthermore that, judged by these tests, these languages have no relationship to any other group. Powell places more reliance, as a test, in the lexical elements,—that is, in the *language roots*,—than in the grammatical structure, as the latter is constantly changing. "The roots of a language," he maintains, "are its most permanent characteristics, and while the words which are formed from them may change so as to obscure their elements or in some cases even to lose them, it seems that they are never lost from all, but can be recovered in large part." If there should be advanced the criticism that these Amerind languages had little or no literature, and therefore are not equal to languages so recorded, as a test of affinity, it may be noted that the largest number of languages throughout the world have produced no literature. Max Müller says: "It is a mere accident that languages should ever have been reduced to writing." However this may be, such an accident appears to be in the line of regular human development, and when a people arrive at the right point in their mental evolution they invent a means of recording their thought. It seems, therefore, to be

rather a state of mind than an accident. The Mayas of this continent had reached the point for speech recording and, following the natural order, they invented a system and made books of record.

Because of certain similarities of physique, of words, or of myths, or of customs, however slight, the Amerinds have been identified with almost every people under the sun.[23] These similarities are only such as might occur where similar organisms are continuously subjected to similar conditions, and the really remarkable fact is that there are not more and even closer resemblances. Some of the arguments advanced to uphold the so-called identifications are extraordinary. In language the Amerinds have been found to speak—or at least have been claimed to speak—Irish, Welsh, Norse, Chinese, and many other independent or interrelated tongues, yet with the exception of the Basque, the structure of all the Old World languages has little in common with the Amerind. Brinton has shown[24] that a number of Maya words resemble our English words of the same meanings, as, bateel and battle, hol and hole, hun and one, lum and loam, pol and poll (head), potum and pot, pul and pull, and so on, but nobody has yet ventured to deduce from this that the Mayas are first cousins of the English.[25] The Maya language certainly does differ from almost all others on the continent in its construction. Before Gallatin's time, the wildest statements flourished because the few linguists who had paid attention to Amerind languages had worked in rather a desultory manner and had made no determined effort to systematise them and group them under their stock names. Gallatin was the first to bring order out of what appeared to be an almost hopeless tangle, and Powell, Brinton, and others, supplementing and

developing these labours of Gallatin, have been able to present the subject in definite shape with a promise of greater accuracy in the near future. Many languages which are known to have existed at the beginning of European acquaintance with America have disappeared with the tribes which used them. Some of these were spoken by mere handfuls of people, while others were wider spread.

With so many distinct languages on the continent, and with many tribes totally ignorant of the speech of their neighbours, there became necessary a means for the interchange of ideas which should not entirely rely on spoken words, and this means was found in a “sign-language” assisted by a few words of each spoken language which were simple and commonly known, or by words which belonged to no spoken language but which through accident were attributed by each side to the other. This sign-language was of extensive development and existed not only among the Amerinds but all over the world, and bore a resemblance to the sign-language now used in some of our deaf-mute schools. This peculiar sign-language possessed varieties like spoken language corresponding to dialects. For a time its existence was disputed, but the work of Mallery and others has established it beyond question.

Besides the gesture language, tribes not understanding each other’s speech had recourse to a medley of corrupted words from each language, from other languages, and from no language at all but springing into being through misunderstandings and necessities. When white men came upon the scene they often thought they were talking “Indian,” while the Amerinds thought it was the white man’s tongue, and neither was talking the language of the other at

all or of any other people in existence. It was a jargon. If the whites had previously learned something of another Amerind tongue, for example Algonquin, and they were trying to talk to Dakotas, they would use Algonquin terms, supposing them to be intelligible to the Dakotas, and the latter would suppose them to be English words. These would gradually accumulate through usage, together with nondescript terms, until a working jargon was formed. In this may perhaps be discovered one of the causes that led to the former belief that Amerind languages were loose and changeable.



POLISHED BLACK WARE, SANTA CLARA, NEW MEXICO

One of the most important and most interesting of the jargon languages is that known as the Chinook, [26] in the north-western United States, along the

Columbia River, which grew into such proportions that it formed at length the principal language in a wide district. It is made up of words from Chinook, Chehali, Selish, Nootka, English, French, and other languages, with a large number of words that belong nowhere else. This same process in earlier times going on between several different tribes doubtless gave birth to permanent languages, which in their turn were again modified. Even in our own every-day English we use hundreds of borrowed words and also some that, like “skedaddle,” “mugwump,” etc., were coined for special occasions. We hardly give a thought to the origin of these words which are seen side by side with others that have come to us through a thousand years and still others that were only yesterday the gift of the Amerind. How few realise when they say chocolate, squash, mush, hominy, pone, succotash, or other terms equally familiar from Amerind sources, that they are talking “Indian”! Tobacco, of course, all understand came from the native language, but it is generally supposed to have been the name of the plant, when in reality it was the name of the roll of leaves from the plant, which was called “a tobacco,” as we now call it a cigar.

Sometimes words appear similar when they have no shadow of relationship, the resemblance being purely accidental. Powell cites the word “tia,” meaning deer in some of the Shoshonean languages. This was at first supposed to be an attempt on the part of the Shoshones to pronounce our own word “deer,” but further investigation has shown it to be the original Shoshone name for deer, and that in some dialects it was called “tiats” and in others “tiav.” Brinton, as already mentioned, calls attention to similar resemblances between Maya and English

words.

A tribe would often possess two languages, one known only to the priesthood and the other the language of the people, the priest language being the older, just as to-day we find the priests of the Roman Catholic Church using a dead language in their sacred functions while the parishioners use the ordinary one. Bourke believed that the Zuñis and the Mokis each have a language of this kind,[27] and it is thought that the Central-American tribes also had. Such hieratic languages would necessarily be far older than the languages in common use, therefore if the latter tend to indicate a great antiquity for the Amerind race, we should be carried still farther back by the hieratic languages. Occasionally tribes have spoken two languages, both familiar to the common people, as in the case of the Tewas speaking Moki as well as their own language, already referred to. The Tubares of Mexico, nearly extinct, are said to have spoken two different languages among themselves, one a dialect of the Nahuatl.[28]

Gatschet, the eminent student of Amerind languages, declares that “the majority suppose that an Indian language is simply a gibberish not worth bothering about, but languages that can preserve identity for centuries are certainly something more than gibberish.” He further points out that while “the Indian neglects to express with accuracy some relations which seem of permanent importance to us, as tense and sex, his language is largely superior to ours in the variety of its personal pronouns, in many forms expressing the mode of action, or the idea of property and possession, and the relations of the persons addressed to the subject of the sentence.”

Again it is said by some persons, “Why study

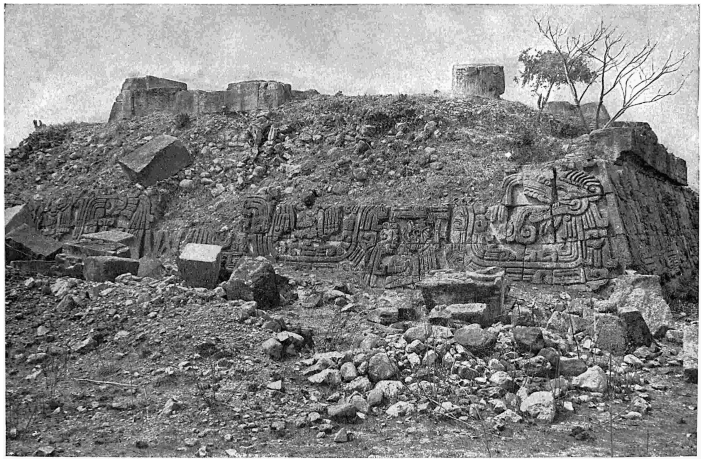
languages which have no literature, and dialects that are known only to savages?" but Max Müller insists that "dialects which never produced any literature at all, the jargons of savage tribes, the clicks of Hottentots, and the vocal modulations of the Indo-Chinese, are as important, nay, for the solution of some of our problems, more important, than the poetry of Homer or the prose of Cicero. We do not want to know languages; we want to know language, what language is, how it can form a vehicle or organ of thought; we want to know its origin, its nature, its laws."

Here in North America exists a splendid field for this study, but until recently it has been sadly neglected. This neglect has been largely due to the attitude of the people at large, an attitude of apathy and contempt for anything "Indian." Opportunities that can never come again have been allowed to pass heedlessly away. We have not half realised the importance of collecting the linguistic treasures that are scattered across the length and breadth of the country, partly because of the foolish and narrow estimate of the Amerind which for so long a time dominated the public mind. We have despised his languages because we thought he did not bathe with sufficient frequency! "To draw conclusions from the exterior appearance of a people on their language," exclaims Gatschet, "and to suppose that a man not worth looking at cannot speak a language worth studying, would be the acme of superficiality." Remnants of tribes have died out and their language unrecorded has died with them even within a comparatively few years.[29]

As an example of the necessity for prompt investigation, an incident mentioned by Putnam may

be cited. In a conversation with a gentleman whom he had recently met, he learned of Mrs. Oliver's acquaintance with the Karankawas of Texas, and her knowledge of their language. Now it happened that Gatschet had made a fruitless search in Texas for some trustworthy information regarding the language of this extinct tribe, and when Putnam sent him Mrs. Oliver's vocabulary he was delighted and immediately paid a visit to the old lady, obtaining much additional information about these Amerinds, among whom Mrs. Oliver had spent her early life. Within three months afterward she died.

That the Amerind has no literature is true if by literature we mean only written books, for outside of Yucatan and Mexico there were no native books, and the Spaniards burned all they could find of these, but if we accept the enormous number of legends, myths, songs, and ceremonial lore mnemonically recorded, as literature, and they surely become literature when we write them down, then the Amerind is not so poor in this respect as has been generally considered.



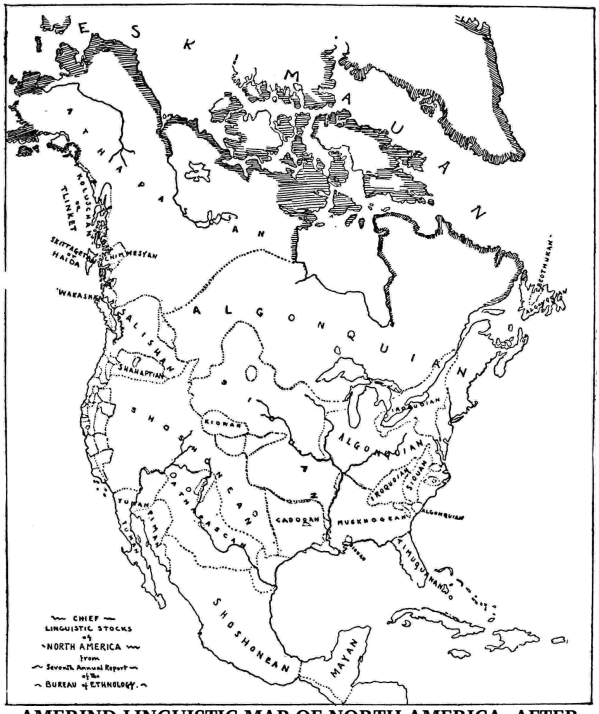
EASTERN FAÇADE OF THE TEMPLE OF XOCHICALCO, STATE OF MORELOS, MEXICO

In North America, as in other parts of the world, the various language stocks occupy areas differing enormously in proportions. Some are confined to small tracts, while others, as mentioned above, are spread over wide territory. The Algonquian stock, for instance, occupied an immense area while the Zuñian is a mere spot in the expanse of New Mexico. More than thirty of the stocks lie within the Pacific region, six on the banks of the Klamath River alone.

The Amerind languages, with the exception of the Maya and possibly one or two others, are polysynthetic, and no other languages of the world have exactly this construction, though, as has previously been stated, that of the Basques has a construction somewhat similar. By polysynthetic is meant a language that permits the incorporation of a great many words in one sentence, till all are fused into one "bunch-word" of from ten to fifteen or more syllables. Examples are often quoted from Eskimo[30] which in our eyes appear ridiculous in their cumbersome length, but they are as intelligible and valuable to the Eskimo as our words are to us. While the Basque more nearly resembles the Amerind languages than does any other Old World tongue, it stops short of the incorporating power of that of the Amerinds. In Basque this is restricted to the verb and some pronominal elements, but in the Amerind it embraces all parts of speech. It is specially interesting to note also that Basque in the Old World is an isolated language, the only one there of its kind. The Amerinds who look alike are not always the ones who speak the same language. Quite different-looking Amerinds will sometimes speak the same tongue, while others who look the same will speak different ones. The Pueblos of New Mexico and Arizona, while apparently of one race, speak several

different stock languages, while some of the natives of Labrador, who are of apparently different stocks, speak dialects of one language. Nor, as has been mentioned, is the area occupied by one stock always continuous.[31] The Athapascan, next to the Eskimo, is the most northerly stock, yet three small branches are found south, on the Pacific coast of the United States, while two large branches, the Navajos and the Apaches, extend through Arizona and New Mexico, the latter far into the country of Mexico proper. In the same way the Siouan[32] lies in the middle region of the United States, but a small band still lingered, at the beginning of the Columbian era, on the Gulf coast in Mexico, and another smaller band in eastern North Carolina, having for a near neighbour still another, which spread itself over three States. These detached bands indicate great movements on the part of the various stocks. One Amerind language, the Eskimo, has been traced across Bering Strait into Asia, but thus far no language has been traced from Asia into America. When the Asiatic and North-west Coast investigations instituted by the American Museum of Natural History, under the auspices of Mr. Jesup, are completed, something more definite will be known on the subject of possible affinities. In addition to the great difference in their formation, some of the Amerind languages do not possess sounds common to European languages, and on the other hand they sometimes have sounds rarely heard elsewhere. The Pai Utes have no “f,” and when they try to pronounce “fire” they can only say “piah.” The Moki cannot say “s” before “k” or hard “c.” In trying to pronounce “school” they say “cool.” There is no “r” in Huron, Mexican, Otomi, and some other languages, and several have no “i.” The Iroquois have no labials, and do not articulate with their lips.

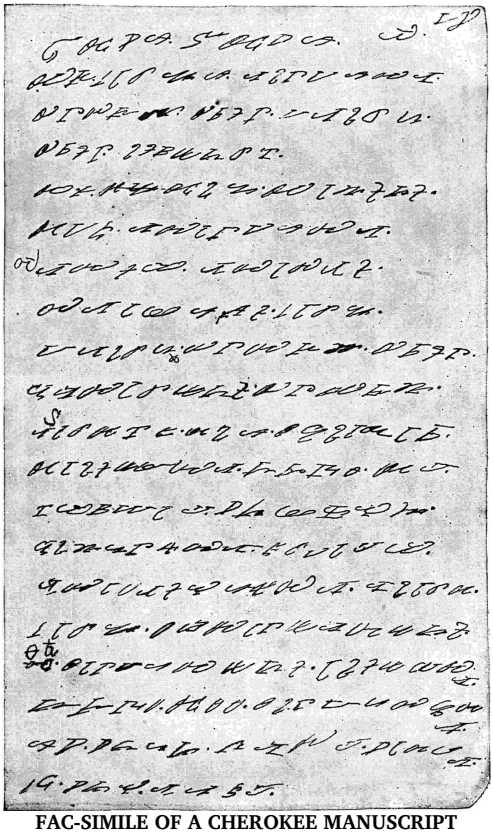
Cherokee has the same peculiarity, as it is an Iroquoian language. The Karankawa contains sounds rarely heard in European languages, while other sounds common to the latter are absent altogether from the Karankawa, so that in this language is found not only a complete difference from European tongues in grammatic structure and lexical elements, but a complete difference in phonetics as well, and in the last respect it differs also from other Amerind languages. Altogether the Karankawa shows many peculiarities, and it is unfortunate that the authentic material relating to it is so limited. In the Navajo there is a common combination of “tl” with a peculiar explosive click.[33] The tongue is placed with the tip against the roof of the mouth and pressure as for “t” made against it, the “l” sound immediately following by an explosion at the side. It is a peculiar sound, and the Navajo language is filled with it.[34]



AMERIND LINGUISTIC MAP OF NORTH AMERICA, AFTER THE ONE PREPARED BY THE U. S. BUREAU OF ETHNOLOGY

In recording these Amerind languages and their peculiar sounds, no definite system was employed till recently. Travellers wrote the Amerind words down with ordinary letters as they understood them, thus producing great diversity in method and results. Differences are due sometimes to a lack of perception on the part of the recorder, and also sometimes to a difference in pronunciation on the part of the Amerinds themselves, and again to differences of methods of recording. To catch the exact sounds of a new language requires a musical ear. I do not mean a knowledge of music, but an ear that follows a tune easily. Without such an ear a person is not fit to record language sounds that are novel no matter how

good a linguist he may be. Investigators ought to have their ears tested for sound-perception as the eyes of locomotive engineers are tested for colour.



FAC-SIMILE OF A CHEROKEE MANUSCRIPT
Written in Sequoyah's Syllabary. See cut on page 52.

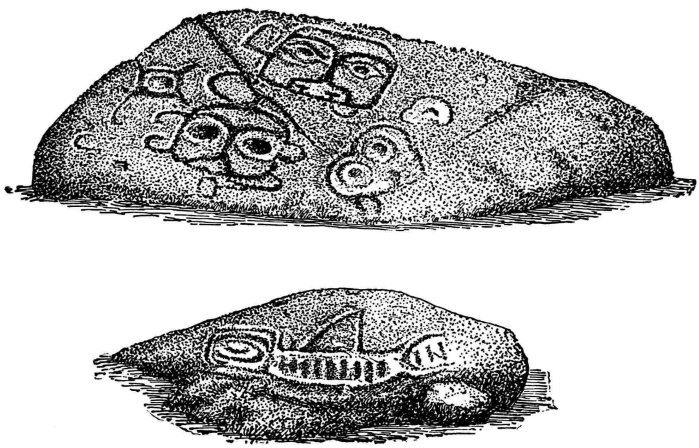
Recognising the importance of a system in the recording of the Amerind languages—the importance of systematising the orthography of these languages —the U. S. Bureau of Ethnology published an *Introduction to the Study of Indian Languages*, in which an alphabet was advocated that was adapted to recording harmoniously the Amerind languages. In

this over sixty separate sounds are given by signs following as closely as possible our own alphabet. This is complicated and many investigators use their own systems and translate afterwards into the more general one. The great difference in the Amerind sounds necessitates many different characters and inverted letters standing for peculiar sounds.

Of all the Amerind languages of North America, that of the Eskimo is probably the most homogeneous. Its dialects are alike from one side of the continent to the other, following similarity in other respects. Dall states there is a saying “that a man understanding thoroughly the dialect of either extreme, could pass from village to village, from Greenland to Labrador, from Labrador to Bering Strait, and thence southward to the Copper River, staying five days in each halting place, and that in all that journey he would encounter no greater differences of speech and customs than he could master in the few days devoted to each settlement. Probably there is no other race in the world distributed over an equal territory, which exhibits such solidarity.” They do not take to new languages. Though the Eskimo of Alaska have had long intercourse with English-speaking men, their English is very limited. Like most of the Amerinds, they prefer to invent their own terms for articles that are new to them. The Aleutian Islanders are of Eskimo stock, but their language is different from the main body of the family, and would not be understood by them.

The writings of the Cherokees in the syllabary of Sequoyah are of sacred formulas. These were written out by the shamans and are thoroughly Amerind. “They are not disjointed fragments,” says Mooney,

who made a careful study of the subject, “of a system long since extinct, but are the revelation of a living faith which still has its priests and devoted adherents.” The language used is full of archaic forms and figurative expressions, some of which even the shamans cannot now understand. Some of these are highly poetical, especially the prayers “used to win the love of a woman or to destroy the life of an enemy, in which we find such expressions as: ‘Now your soul fades away—your spirit shall grow less and dwindle away never to reappear.’ ‘Let her be completely veiled in loneliness,—O Black Spider, may you hold her soul in your web, so that it may never get through the meshes!’ ‘Your soul has come into the very centre of my soul, never to turn away.’”[35]



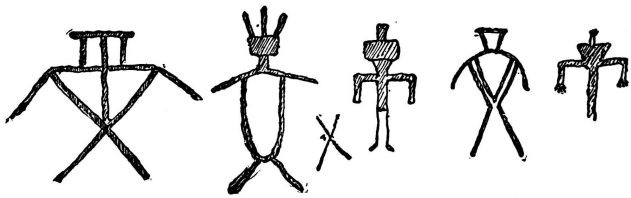
PETROGLYPHS NEAR WRANGELL, ALASKA, PROBABLY TLINKIT

In nearly all the Amerind languages there was a poetical touch. But what seems to be poetry to us arose partly from the inability of the Amerind to express himself in a spiritual way. As his religion was chiefly zoötheistic, and the heavenly bodies and natural forces were personified as animals, his

comparisons and references were not intended for metaphor, but were merely the ordinary workings of his mind on the material at his command.

NOTE

As it is sometimes useful to have at hand an orderly geographical and cultural classification of tribes, this one used by Livingston Farrand is here given: I, Eskimo; II, North Pacific; III, Mackenzie Basin and High Plateaus; IV, Columbia River and California; V, Plains; VI, Eastern Woodlands; VII, The South-west and Mexico.



HUMAN FORMS, MOKI



OMAHA WAR CLUB

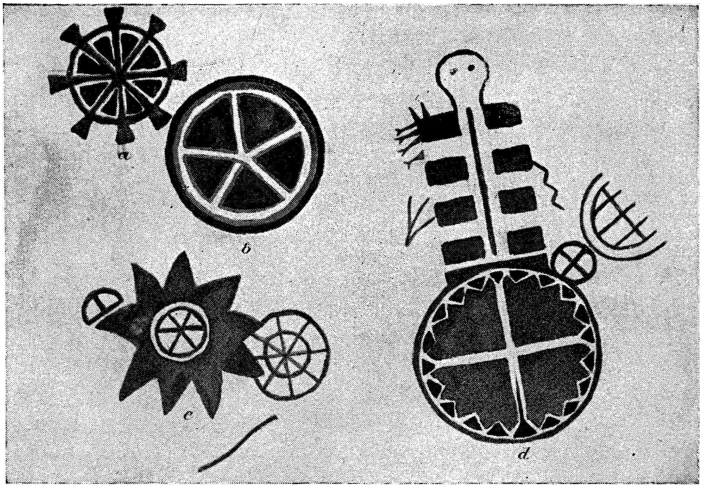
CHAPTER III

PICTURE-WRITING—SIGN-LANGUAGE—WAMPUM—CUPPED-STONES[36]

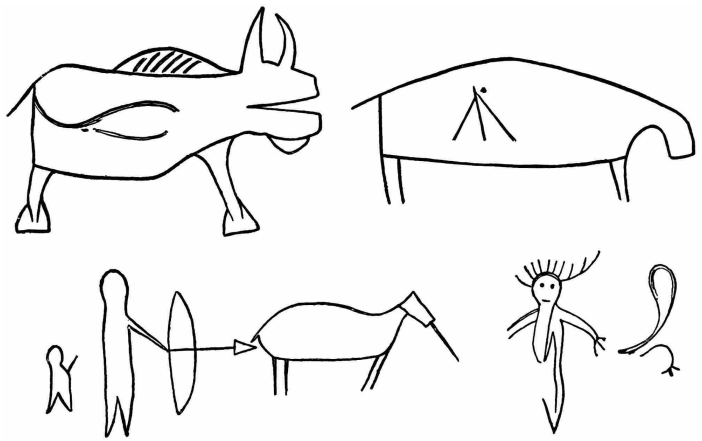
OUR pre-columbian knowledge of the Amerind people is at present meagre. The majority of the different stocks had not arrived at the point where they understood how to record their thoughts and their doings. Outside of the Maya and Nahuatl stocks, and others in that region, there is nothing but rude picture-writing to refer to besides an abundance of traditions, legends, and other oral matter. All the Amerind languages are capable of being readily written, being possessed of grammars and of copious vocabularies, but none of the tribes north of Mexico had made the discovery that marks can represent sounds. We trace our alphabet back to the Romans, still farther to the Greeks, and yet farther back to the Phœnicians, and then another stage back to even ruder characters connecting the chain of its development with the end links of such writing as that of the Mayas, and exhibiting writing in all stages, from rock scratching or picture-writing, through all phases down to the work of the writing

and printing machines of to-day.

Mankind are all alike, merely exhibiting different degrees of culture. As the rills in the mountains born of the rains and the snows are all the same and reach the ocean by various devious and complicated courses, so the races of men, emerging from the darkness of the past, follow, because of the immutability of natural law, practically the same lines of development through savagery, barbarism, civilisation, toward a common goal of unification and enlightenment. The progress of humanity from earliest times to now appears to be divided, in each race evolution, into several epochs by certain great inventions or discoveries which seemed to spread themselves over the world either from one centre or from several. Of these the most important are, first, fire; second, the bow; third, smelting; fourth, phonetic writing; and fifth, printing. This progression is not even, but a people may stand still for a long time and then suddenly become active in one particular line, or in many lines.[37] Ours is the age of mechanical development; the Greeks made a stride in art. When development reaches a certain point and conditions are favourable for an invention, it springs into being not in one individual alone but usually in several widely separated ones, as if the seed of it had been sprinkled over the earth. It may have germinated before when conditions were not ripe, but it then died before even sprouting. Environment cultivates the mind, and the mind feeds on environment. Only a small portion of those to whom an idea occurs endeavour to carry it out, and often other subsequent inventions are necessary to success.



PAINTED PETROGLYPHS, SANTA BARBARA COUNTY, CALIFORNIA



PETROGLYPHS IN BROWN'S CAVE, WISCONSIN

On the Amerind continent before the advent of the European the various stocks and tribes were rising and falling under the influence of the moulding conditions, and rising again or giving place to more highly vitalised stock which might succeed in fertilising in the brain of a Hiawatha or a Quetzalcohuatl great ideas that should lift them

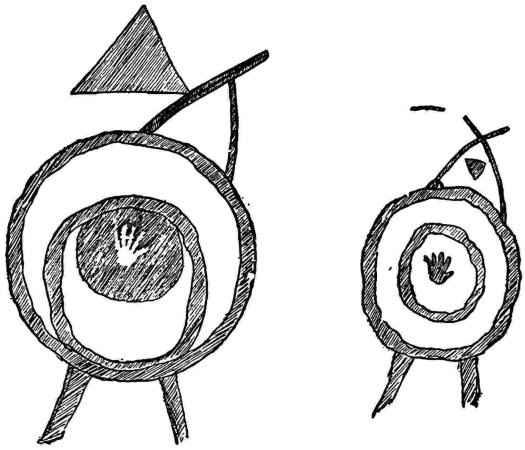
onward.

In the matter of writing, these races were moving toward success, and had their isolation been maintained they would in time have come to the full measure. As it was, the Mayas[38] had reached a considerable degree of efficiency, and the Aztecs were following close. The more northern stocks, however, had not passed beyond the elementary stage. In the sense in which artists now use the word "drawing," it hardly existed anywhere on this continent; that is, there was little exactness and delicacy of delineation, but it was mainly an offhand representation of objects in a barbaric fashion. There was considerable merit in some of the work executed by the sculptors, but it was nevertheless as a whole aboriginal and primitive. In the middle region the drawings and rock peckings[39] have no artistic merit whatever, and are like the work of little children; nor are the Eskimo efforts much better. The Eastern States do not afford the same abundance of characters pecked and scratched, and sometimes painted on the rocks, that exists in the Rocky Mountain region, and particularly in the South-west, where they are found everywhere.[40] This may be due to the more verdant nature of the eastern part of the country, and also to the fact that the broad, smooth surfaces of sandstone exposed so universally in the South-west are generally absent in the East. Another reason may be that the Amerinds of the various Pueblo stocks and allied tribes were more given to inscribing the rocks in this manner. Certain it is that wherever evidences exist of the former occupation of a locality by Amerinds of the Pueblo kind, there rocks will be found covered with markings and paintings. These people went everywhere in their region, and they generally left

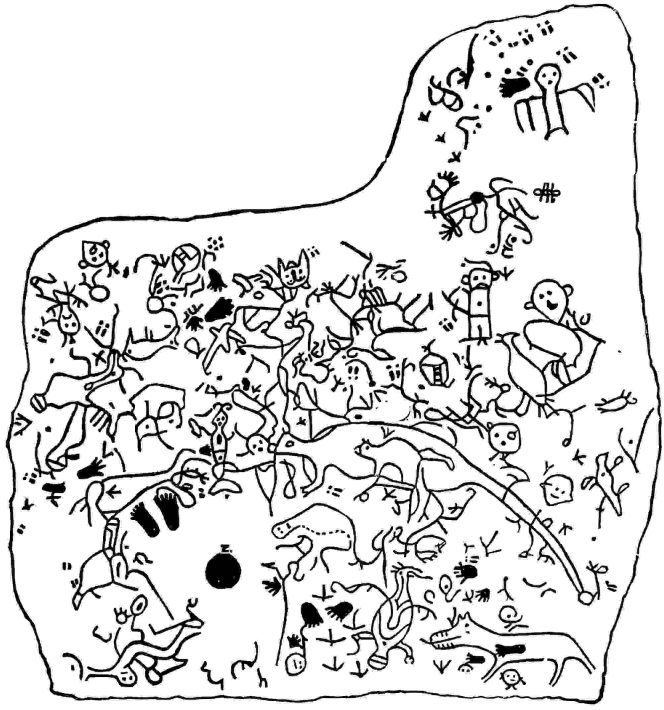
some record on the rocks, as they do to-day. If one thinks he has found a place where they did not arrive in that vast land of cliffs and canyons, he is sure soon to be undeceived. Once I reached a little platform on the face of a cliff in Arizona by hard scrambling, part of the way through a narrow crevice, and as I stood viewing the valley a thousand feet below, I thought, "Now, at last, I am on a spot where the Shinumo[41] never stood." As I turned to make my way down again I was confronted by a lot of pictographs spread across the whole of the smooth wall behind. Thus it was almost everywhere: in the deep gorges of the Colorado River, in its side canyons, in the cliffs above and around, and all along Green River, at least as far north as the lower end of Split-Mountain canyon, these pictures occur. The climate is dry, and there is little change from one century's end to another.[42] Some are comparatively recent, while others, even some of the painted ones, are old; how old it is impossible to estimate, but many of them are found in regions where no Amerinds of the Pueblo type[43] have lived within historical times, or within the memory of those Amerinds who now occupy the region. Some of the painted figures in sheltered places appeared fresh, but they must have been at least a century or two old. The other Amerinds, while they also executed picture-writings of various kinds, did not so often decorate rock surfaces with them. They were more inclined to drawing and painting on buffalo robes and other skins, on bark, on trees, shell, pottery; even the human form in some regions not being exempt. The Puebloans, while utilising most of these methods, also used the rocks a great deal, the country they occupied abounding in broad, smooth faces attractive for this purpose. In the settled East the perishable substances have long

ago disappeared, except those fortunately preserved in museums or private collections. Comparatively few rock inscriptions are found there, and these have created considerable discussion and the usual number of theories. The markings, undoubtedly Algonquian, on the now widely known Dighton Rock in Massachusetts were for a long time ascribed to the Northmen, and were copied in a great many different ways.[44] The trouble arose from the same reason that has led to so many mistaken theories regarding the Amerind race—that is, an underestimate of their intellectual side, so far as those north of Mexico are concerned, and an overestimate of those in the latter region. Brinton asserts that the Algonquins had developed the picture-writing *farther than any other stock north of the Aztecs*. "It had passed," he says, "from the representative to the symbolic stage, and was extensively employed to preserve the national history and rites of the secret societies. The figures were scratched or painted on pieces of bark or slabs of wood, and as the colour of the paint was red, these were sometimes called 'red sticks.'" Some of these slabs, or "red sticks," like the *Walam Olum* (*walam* = painted, and *olum* = scores or notches on a stick) of the Lenapés,[45] have been preserved. Many of the figures executed by the Amerinds, not excepting the Aztecs and the Mayas, were grotesque, and even childish. Their strangeness is frequently due to our unfamiliarity with the originals, figures with queer hair-dressing, masks, or complete ceremonial costume, which, if we could see them to-day, would resemble nothing we had ever imagined or viewed before. The extraordinary make-up of these people for their ceremonials is beyond anything our race can imagine. Those who have witnessed Pueblo ceremonials will understand how

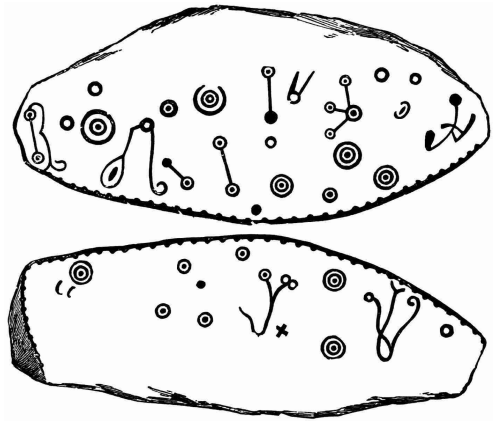
unlike any human being the wearer of the strange costumes can become. The *katcina*[46] is fearfully and wonderfully made, and, especially if represented with the half-skill of the Amerind, would baffle classification by anyone not familiar with the actual object. Among the early tribes there were undoubtedly many of these ceremonial dresses and costumes that we can now have no conception of, and where we see them represented in sculpture or drawing they have a most uncanny and diabolical appearance. Even to-day were we to see a representation in their crude way of a simple little Moki girl, with the singular arrangement of her hair in flat, circular puffs, like huge wheels, one on each side of the head, and had never seen or heard of this fashion of hair-dressing, we should be puzzled as to what it meant.



PAINTED PETROGLYPHS, SOUTHERN UTAH



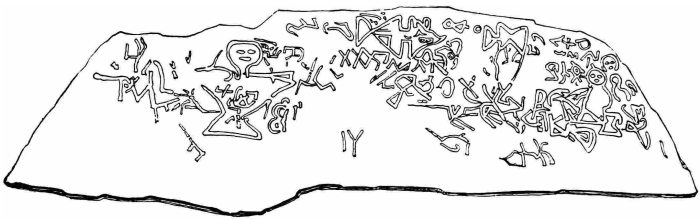
PETROGLYPH AT MILLSBORO, PENNSYLVANIA



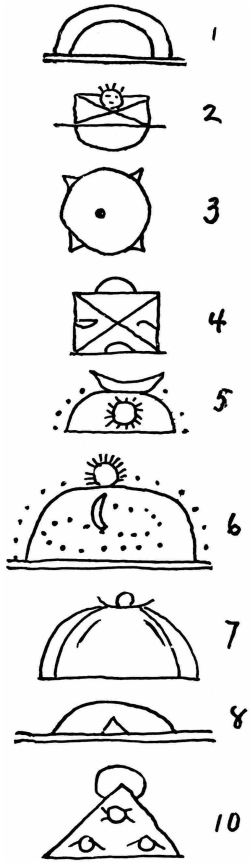
PETROGLYPHS IN GEORGIA



RUNIC INSCRIPTION ON STONE FOUND AT IGALIKKO, GREENLAND, Introduced here to show contrast to the Amerind writings or pictographs. Translation: "Vigdis, Mars' daughter, rests here. May God gladden her soul."



DIGHTON ROCK, MASSACHUSETTS



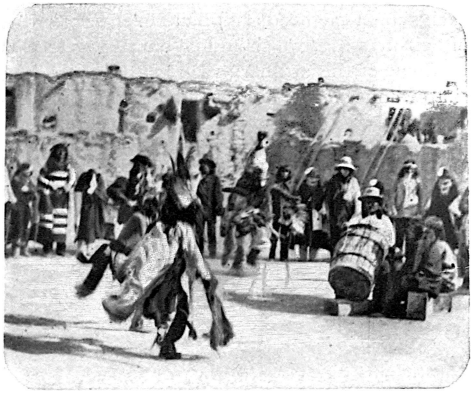
1. Sayewitalli wemiguma wokgetaki.—At first, in that place, at all times, above the earth. 2. Hackung kwelik owanaku wak yutali kitanitowitessop.—On the earth (was) an extended fog, and there the great Manito was. 3. Sayewis hallemiwis nolemiwi elemamik, kitanitowitessop.—At first, forever, lost in space, everywhere, the great Manito was. 4. Sohalawak kwelik hakik owak awasagamak.—He made the extended land and the sky. 5. Sohalawak gishuk nipahum alankwak.—He made the sun, the moon, and the stars. 6. Wemi-sohalawak yulik yuchaan.—He made them all to move evenly. 7. Wich-owagan

kshakan moshakwat kwelik kshipe helep.—Then the wind blew violently, and it cleared, and the water flowed off far and strong. 8. Opeleken mani-menak delsin-epit.—And groups of islands grew newly, and there remained. 10. Owiniwak angelatawiwak chichankwak wemiwak.—To beings, mortals, souls and all (spoke the Manito).

ILLUSTRATION OF THE "WALAM OLUM" OF THE LENAPÉ

There are sixty of these figures painted on the sticks. Each one recalls to the memory of those who have become acquainted with the associated idea, that special idea, and as an example nine of the signs are given here in connection with the associated idea, and also with the translation into English.

There is seen here at once the resemblance to Genesis, and it is difficult to believe that this portion of the *Walam Olum* was not inspired by the teachings of the missionaries. But Brinton says: "This similarity is due wholly to the identity of psychological action, the same ideas and fancies arising from similar impressions in New as well as Old World tribes.



KATCINAS IN THE SOMAIKOLI CEREMONY, CICHUMOVI, ARIZONA, NOVEMBER, 1884



KILLED TWO ARIKAREES

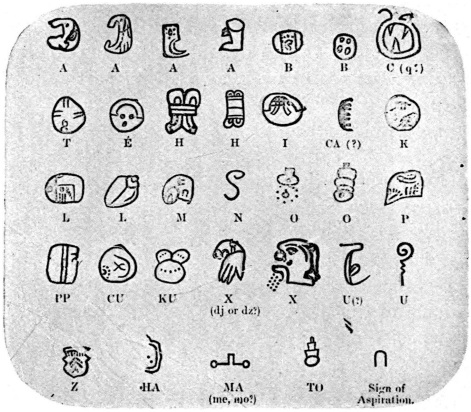
Some of the ordinary rock pictures may have been carved for simple amusement, but the majority were made with a purpose, and this was usually the communication or record of an idea. The Amerind records may be divided into two and perhaps three general classes: first, the mnemonic; second, the ideographic; and, third, the phonetic. Brinton suggests for the writings of the Aztecs, which were partly ideographic and partly phonetic, the term *ikonomatic*,[47] and used it in his own works. The ideographic class are those which represent an idea, as a man striking another, like the accompanying illustration from the autobiography of Running Antelope, who thus records his killing of two Arikarees. The mnemonic class do not represent an idea, but simply are memory helps, like a string tied around one's finger, a good example being any numeral, say the figure "9." The phonetic class represent sounds, like the letters of our alphabet, say the letter "e." It is believed that the Maya writings were largely phonetic, but the phonetic quality is not well established.



PETROGLYPHS ON PAINT ROCK, NORTH CAROLINA

It is supposed that the mnemonic symbols originated in sign-language. One of the most striking examples of the universality of the sign-language is the case, cited by Mallery, of a professor in a deaf-mute college, who, visiting several wild tribes, was able to communicate freely with them though he knew nothing of their spoken languages. It was a natural thing that races should attempt to record these signs, and some early hieroglyphs in Egyptian can clearly be traced to them. These same efforts occurred amongst the Amerind stocks in varying degree. Picture-writing, the world over, as well as particularly in North America, probably grew out of sign-language, giving, as the first stage in the development, sign-language, second pictographs, third alphabet. These merge into each other, as there was not a series of jumps, but a slow and gradual progression. Many pictographs are merely representations of natural objects and had no special significance, others were guide marks to springs, others recorded visits to certain localities. Mallery states a particularly interesting fact, that within "each particular system ... every Indian draws in precisely the same manner." Therefore, if a perfect understanding of each tribal system is obtained, the various rock markings and other pictographs can be classified. Sometimes frauds[48] have been attempted

by white men, one well-known case being where an Illinois blacksmith copied on six copper plates designs from a Chinese tea-box, and then claimed that the plates had been found in a mound. Recently a most ingenious counterfeiter of stone implements was discovered in Dane County, Wis. He had been selling the spurious implements for years. They are usually of bizarre patterns.[49] Bandelier says that "it is certain that some of them [pictographs in Mexico] were manufactured after the Conquest, not with the intention of fraud, but with a view to a compromise between the new method of recording and the old one, which the new teachers were loath to comprehend and which they refused to adopt." Powell classifies all the picture-writings as: (1) Mnemonic—songs, traditions, treaties, war, and time; (2) Notification—departure, direction, condition, warning, guidance, geographic features, claim or demand messages, and communications and record of expeditions; (3) Totemic—tribal, gentile, clan, and personal designations, insignia, tokens of authority, personal names, property marks, status of individuals, signs of particular achievements; (4) Religious—mythic personages, shamanism, dances, ceremonies, mortuary practices, grave-posts, charms, fetiches; (5) Customs, habits; (6) Tribal history; (7) Biographic.



LANDA'S MAYA ALPHABET AFTER BRASSEUR

On this continent no true alphabet, so far as now known, was produced, unless we accept that recorded by Bishop Landa, and ascribed to the Mayas. Landa was the second bishop of Yucatan, and he did his best to destroy the Maya records and everything else that in his estimation linked them with the devil. But he did construct an alphabet after theirs, for the purpose, no doubt, of putting before them the Holy Gospel, and it is this alphabet that has been preserved. It has been the basis of many vain attempts to decipher the few ancient Maya documents that are known, and the failure of these attempts has caused some investigators to consider the alphabet a pure fabrication, but the identity of the characters with many of those in the ancient writing completely disproves this charge. Besides the alphabet, Landa left some other information concerning the Mayas, and Goodman thus presents his respects to his memory[50]: "It is a signal instance of the irony of fate that this bigoted destroyer of the fruits of Maya science and art—the pietist whose zeal rendered him avid of the obliteration of every vestige of their impious learning—should have been the only one to leave a clue by which the mysterious codices

and inscriptions will yet be deciphered. Nevertheless he left such a clue—slight and vague, it is true; but, when carefully followed up, it broadens and leads into an open way where everything will presently become self-evident." The alphabet was probably modified by a desire to make it conform to the Spanish, and it is this foreign element possibly that has led to the unfavourable opinion expressed in some quarters concerning it.



FAC-SIMILE OF THE LORD'S PRAYER IN MICMAC HIEROGLYPHS



SEQUOYAH'S CHEROKEE SYLLABARY

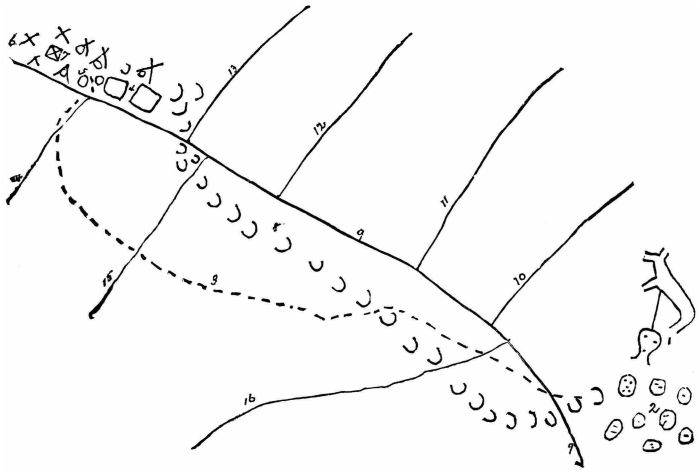
North of the Mexican country certain alphabets were invented by the European priests for the purpose of furthering the introduction of Christianity among the Amerinds. Of these the Micmac is a good example.[51] They were not drawn from pictographs, and were used only for teaching the Bible. In that field they did not serve to preserve Amerind history, traditions, and legends. After long contact with Europeans there was invented but one alphabet, and he who accomplished this was a half-breed. In 1821, George Gist (or Guess), whose native name was Sequoyah, a Cherokee, who spoke little if any English, but whose father was a Dutch peddler and whose mother was of mixed blood, produced an

alphabet, or, more correctly speaking, a syllabary, which was immediately adopted by his tribe, and enabled them to record their traditions, sacred formulæ, prayers, etc., which to-day form a valuable portion of the information we possess of these Amerind people. Many of the symbols were adapted from our alphabet, an old spelling-book having found its way into Sequoyah's hands, but it was the forms which were utilised, the sounds they represented being usually different. By means of this syllabary the members of the Cherokee tribe were able to learn in a few hours to write words, and the system is used to this day.

The endeavour to prove the descent of the Amerinds from one of the numerous foreign sources that have from time to time been advocated has at least resulted sometimes in the accumulation or reproduction of some interesting material. Lord Kingsborough became so infatuated with the idea that the Amerinds were the Lost Tribes of Israel that he attempted to prove it in a number of splendid volumes, which also contain admirable fac-similes of some old Amerind manuscripts.[52] He spent his fortune on this work, and through a business dispute with the merchants who furnished the paper he was thrown into Dublin Jail, where, unfortunately, he died.

To explain the methods employed in the ruder attempts at recording, the map made by Lean Wolf, a Hidatsa, who once made a trip from Fort Berthold to Fort Buford, Dakota, with the ambition of stealing a horse, is a good example. In the illustration the returning horse-tracks indicate that he was successful and rode home. 1 is Lean Wolf himself; 2, the Hidatsa lodges; 3, Lean Wolfs tracks on his outward

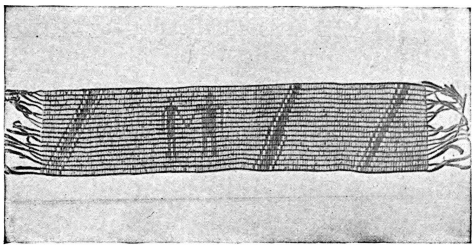
course; 4, government buildings at Fort Buford; 5, several Hidatsa lodges whose occupants intermarried with Dakotas; 6, Dakota tipis; 7, small square, a white man's home, with a cross indicating that he had married a Dakota woman; 8, horse-tracks; 9, the Missouri River and tributaries.



LEAN WOLF'S MAP, HIDATSA

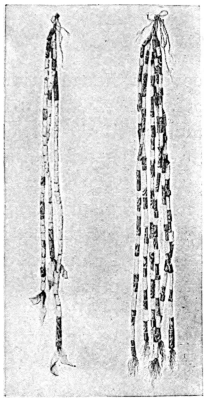
Frequently the marks on the rocks merely record the visit of someone to the place, exactly as when we visit the birthplace of Shakespeare we write our names in a large book kept there for that purpose; or, perhaps, as some persons carve their names on public buildings and in other conspicuous places. Gilbert found a number of such records at Oakley Springs, Arizona, and old Tuba, a Moki, explained them to him. Tuba said that the Mokis go to a place in the canyon of the Little Colorado for salt, and they stop on the return trip at this spring, where each draws his totem mark, or crest, on the record rocks once, and once only, for each trip. There are many repetitions of the same sign, showing that the owner of that particular sign, or totem, had made that many

journeys to the salt mine. Tuba gave the name of the totems, and they were all animals.



THE "PENN" WAMPUM BELT

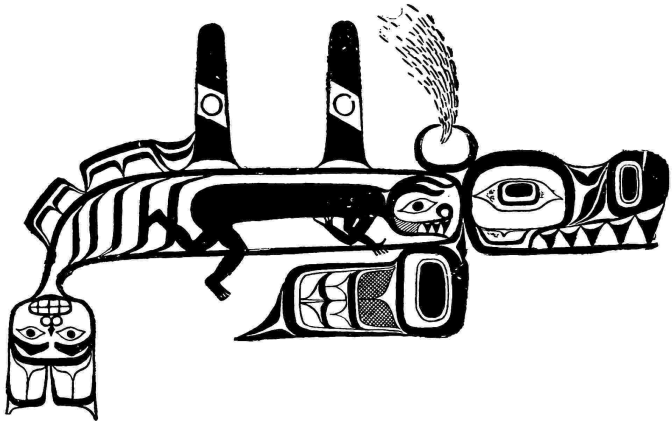
One cannot be too careful in taking statements from Amerinds, for, like some of their white brethren, many of them will lie for the fun of it, or just to experiment as to the probable result. Sometimes, too, when they are telling the truth they tell only part of it. This is particularly the case with regard to springs, sacred rites, and other matters which are specially cherished. Some objects in the custody of the heads of the secret orders are never shown in public, or are only shown on special occasions. Pictographs representing them, therefore, should any happen to be made, would not be intelligible to any persons but the initiated.



STRINGS OF

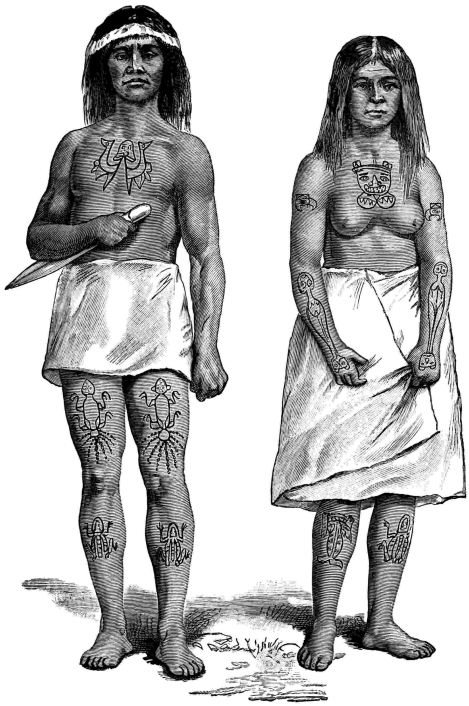
WAMPUM

Another class of symbols was worked out in wampum. The popular idea of wampum seems to be that it was a kind of Amerind money, but the money function was only one of its uses. There was another, a mnemonic use, of more importance—that is, it was a means of recording and of communicating mnemonically among the tribes of the North-east. The Iroquois used it chiefly in the form of belts. The beads were generally white, and were used in strings as well as belts, other colours being mingled with the white, as purple and white, or black and white. These strings had important functions in summoning officers, in representing persons, and in conferring authority. But all wampum had a meaning only to those who remembered the particular association of particular forms of it, and the knowledge once entirely forgotten could never be regained. Consequently the ideas with which the belts, etc., were associated had to be regularly brought to mind. Once a year, therefore, they were exhibited in public, and the story connected with each carefully rehearsed so that it should not be lost through forgetfulness. This custom is still kept up among the remnants of the wampum-using tribes. In other tribes, formulæ and drawings were often preserved by certain orders who rehearsed them in the privacy of the kiva. The wampum beads were generally ⅛ inch by ¼ inch diameter—that is, flat discs of shell. They were sometimes also ¼ to ½ inch thick, with the same diameter. When the white men discovered the valuation the Amerinds placed on these beads an attempt was made to introduce some of European manufacture, but it met with only partial success.[53] The average width of a belt is three inches and the length three feet.



ORCA OR KILLER-WHALE DECORATION, HAIDA

By some tribes the human body was also used as a surface for the display of pictographs. Among all primitive people the body has been often decorated to a greater or less extent by means of pigments or by tattooing, and even to-day the practice lingers among civilised races, in their sailors and soldiers especially. The primitive totem or tattoo marks are frequently highly elaborate, but the work is not all accomplished at one time. Years sometimes pass before the drawings are complete. The Haidas of the North-west coast are specially given to this form of decoration, and their bodies bear carefully prepared symbols. They are heraldic signs, or the family totem, of the clan to which the person belongs.

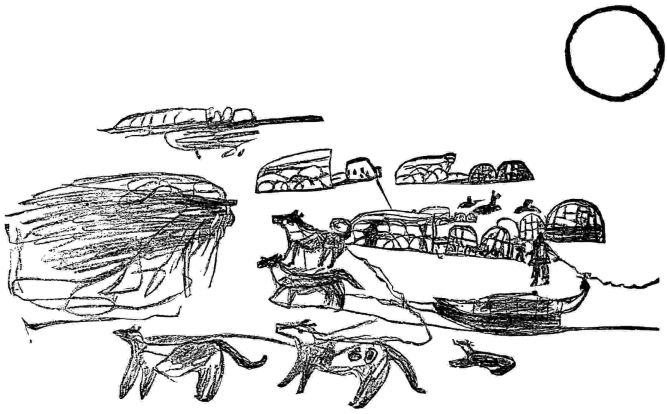


HAIDA TATTOOING

Pottery was also a medium, and some of the designs contained upon earthenware unfold a whole legend to the knowing eye of the native. The designs that are woven into blankets, baskets, and scarfs of Amerind manufacture are also, to a certain extent, symbolic. The Navajos, who weave a superior kind of blanket, put into it a variety of designs, that are carried entirely in their memory. It is asserted that the majority of these designs are Pueblo. The Navajos no doubt absorbed many of the Pueblos, who must have been in the country they now occupy when they arrived. There is some intermarriage of Navajos and Mokis in these latter days.[54]

Everything the Amerind does pertains to his religious belief, and these symbols, totems, and

pictures play an important part in his life. Some sign or token occurs on almost every article of his manufacture.



ESKIMO DRAWING—"THE MAN IN THE MOON COMES DOWN"

Excellent examples of Algonquin mnemonic records are found in the songs of the Midē society, which have been preserved for many generations by means of their picture-writing, and some of the records are exceedingly elaborate. The method is to associate certain devices with songs or with parts of songs to recall the words to the memory of the singer when he beholds the pictures, and in this way they have been handed along through the centuries. There is reason to believe that almost all important legends are recorded in this mnemonic way among the tribes of North America. Of course the memory is likely to fail in some details and so the songs become more or less changed as time goes on, but it is not probable that the changes are of much importance, for where the memory is trained in this way it grows remarkably accurate. There was much practising of the various songs at each particular season, under the guidance of some veteran singer.

The Eskimo, in their picture-writing, seem now to be rather a class by themselves. Whether the suggestion of perspective found in some pictures was a result of contact with the whites I am unable to state, but it seems probable. In the above illustration the suggestion of perspective is clear. There is a landscape with houses, with the moon in the sky, and with a perfectly evident effort to make the foreground and middle and background take their proper places. Such a thing is not to be found throughout all the other Amerind stocks.

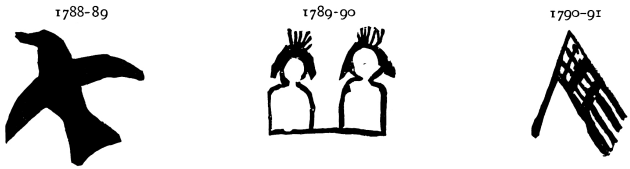
From Alaska come some good examples of the ideographic, by way of San Francisco, where one Naumoff, an Alaskan native, made them. They are written on strips of wood and placed in conspicuous places as notifications.



The irregular line indicates the contour of the country. The traveller is seen starting out at the left. He presently leaves a stick with a bunch of grass to show direction, and stops with a friend at night—the division of days represented by a line upright. Next morning, on the second hill, he discovers game, etc.

Some tribes have a system of enumerating the members of it and keeping a kind of clan roll. Chief Big Road, a Dakota, was one day brought to the agency and required to give an account of his followers. He submitted a roster, made on common foolscap paper with black and coloured pencils. The names, represented by pictures, were Big Bear, Bear-looking-behind, Brings-back-Plenty, White Buffalo, and so on. This is also an example of the ideographic. Red Cloud had a similar census of his warriors. It was prepared under his supervision at the Pine Ridge Agency. Owing to some disagreement,

the agent had refused to recognise Red Cloud's leadership and named another man as chief. Thereupon the adherents of Red Cloud prepared this document, and sent it to Washington to establish his claim. The names pictorially represented are Shield-Bear, Sees-the-Enemy, Biting-Bear, Cut-through, Red Owl, etc.



SPECIMENS OF THE DAKOTA WINTER COUNTS
Dates determined by counting back from great events
The left: 1788–89. Very severe winter. Crows were frozen to death. "Many-crows-died-winter"
Middle: 1789–90. Two Mandans killed by the Minneconjous
Right: 1790–91. "All-the-Indians-see-the-flag-winter"

In this same line are the Dakota winter counts collected by Dr. Corbusier. The years are counted by winters, as the winter among the Dakotas makes the deepest impression. These records have been kept for many years and are used in computing time and to aid the memory in recalling names and events of different years. The enumeration is begun at the winter last recorded and carried backward. There are at least five of these counts kept among the Oglalas and Brules by different men.[55]

From the manuscript drawing-book of an Amerind prisoner at St. Augustine we have a "conversation" about the lassooing, shooting, and final killing of a bison which had wandered into camp. "The dotted lines indicate footprints. The Indian drawn under the animal having secured it by the forefeet, so informs his companions, as indicated by the line drawn from his mouth to the object mentioned. The left-hand figure, having secured the buffalo by the horns, gives

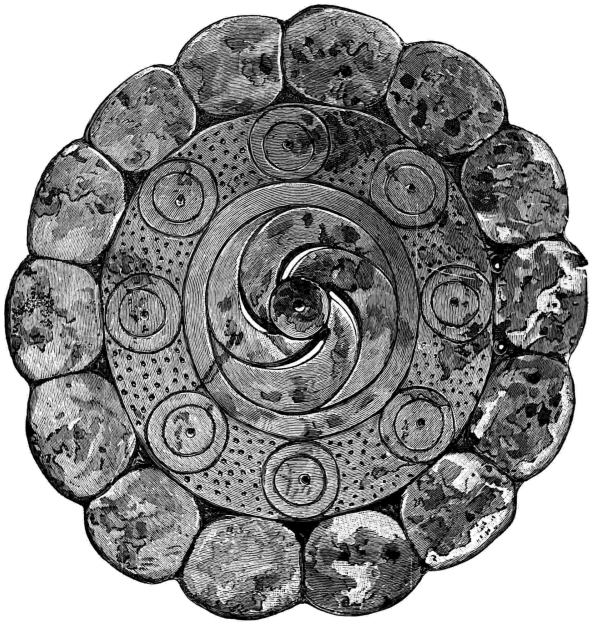
his nearest comrade an opportunity to strike it with an axe, which he no doubt announces that he will do, as the line from his mouth to the head of the animal indicates. The Indian in the upper left-hand corner is told by a squaw to take an arrow and join his companions, when he turns his head to inform her that he has one already, which fact he demonstrates by holding up the weapon."[56]



KILLING A BISON

The Navajos have a singular kind of picture-writing which has been called "dry-painting." These dry-paintings are made on the ground with dry sand of various colours.[57] All the designs are made with the utmost care and precision, being drawn according to an exact system, except in minor points, where the artist is left to his imagination. So far as known this system is not recorded in any way, but

depends entirely on the memory of those in charge. Changes must therefore occur in the course of time. The sand is trailed out of the hand between the thumb and forefinger, and when a mistake is made it is corrected by renewing at that point the surface of the sand which forms the general ground for the work. No less than seventeen ceremonies are illustrated by drawings of this kind. Sand enters into some of the kiva ceremonies of the Moki, but in a different way. It is used more to maintain in position certain objects that belong to the ritual.



After Dr. Jones
SHELL DISC, TENNESSEE
Diameter, 4.4 inches

The mounds of the Mississippi valley have yielded antiquities of great interest, but thus far nothing that is beyond the ability of the ordinary Amerind to execute. Some shell discs, which Holmes suggests

may have been time symbols, attract special attention. There are generally thirteen small outer circles on the discs, and thirteen is a number that occurs frequently in Amerind chronology. On other discs various objects are drawn, the one first to fix the attention of the white race being the figure of the cross because of its connection with the Christian religion. But it had no similar significance with the Christian cross. Crosses were found among almost all the tribes of North America, because a cross is an easy and a most natural figure to construct. Another emblem found throughout the world, and next to the cross the simplest figure to make, is that called the swastika, merely a cross 卐 with the arms broken at right angles. The Mormons firmly believe, along with Kingsborough, that the Amerinds are the Lost Tribes of Israel, and one of their elders has succeeded in translating some picture-writing thus: "*I, Mahanti, the 2nd king of the Lamanites in five valleys in the mountains, make this record in the twelve hundredth year since we came out of Jerusalem. And I have three sons gone to the south country to live by hunting antelope and deer.*" Like the power to divine the future, the power to translate picture-writings is rare.

In some of the Moundbuilder work there is a suggestion of a position for the makers intermediate between, say, the Algonquin and the Nahuatl or Aztec tribes. Their serpent symbols strongly resemble those of more southern tribes, and also some of the figures in shell and copper.

The fact that the serpent was a prominent object with them as with the Nahuatl tribes tends to link the tribes who made these symbols with the Nahuatl tribes. The serpent symbol, especially the feathered kind,[58] belongs mainly to the tribes of the Mexican

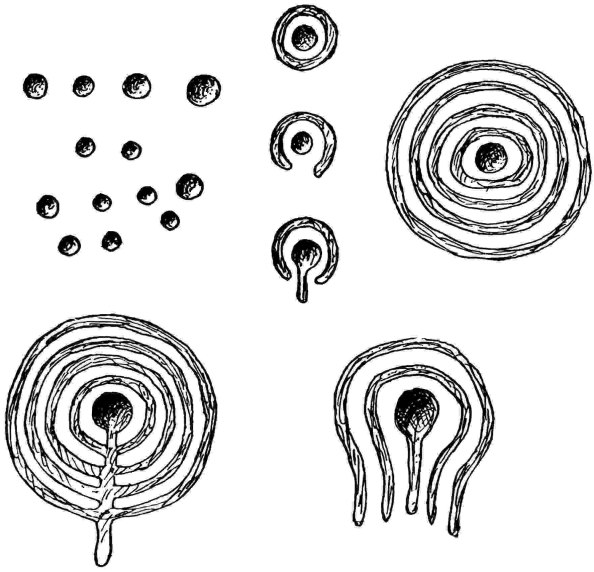
region, where the rattlesnake exists in its greatest variety. The rattlesnake was highly venerated, and tribes as far north as the Moki country in the West, and perhaps as the Ohio in the East, might be correctly called the Snake people. There is nothing improbable in supposing that some of the tribes of the Mississippi valley, if they were not of the same stock as the Aztecs, were in tolerably close communication with them, or with tribes intermediate between the two.



SHELL GORGET, TENNESSEE
Actual size

Sometimes there occur markings on the rocks in the South-west that would be a puzzle to us did we not know, through the Mokis, who are still making them, just what they are. There is therefore no room for the imagination; the long scratchings are only grooves made in sandstone by the Moki farmer

sharpening his planting stick.



CUP MARKINGS

Another kind of rock markings, the so-called cupped-stones or cup markings, about which there has been a vast amount of discussion, may be considered here because they have generally been thought to have symbolic significance. That some of them may have had such significance is admitted below, but the bulk of those on this continent it seems possible to explain without resort to symbolism. An explanation which I offer, for what it may be worth, I have never seen suggested, though the idea may not be new. It is well known that the common form of fire-drill in use from one end of this continent to the other was that in which the end of a straight stick is made to rotate back and forth in a rounded cavity in another stick of softer wood called the hearth. In order that the operation should be speedily successful in producing fire, it was necessary

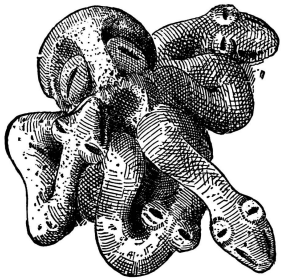
to have the end of the drill convex, so that it would immediately bear as nearly as possible on the whole surface of the hearth cavity. In order to produce this convexity, the Amerind pecked a small cavity on a slab or rock of sandstone, and when he had it in the proper condition, he could bring his drill very quickly to the desired convexity, and also give it a roughness of surface that would contribute to the friction. As the fire-drill was long in constant use, many cavities were necessary, for a cavity would grow too deep, or for some other cause would not be adequate. A new hole would then be made, and thus in the course of time there would be numbers of the cavities on a rock or slab, which was convenient or had been found to possess the right texture for the purpose. My opinion, therefore, is that these so-called “cup markings” or “cupped” stones were in America the result of the sharpening of fire-drills, just as the long grooves seen at the Moki towns to-day are the result of the sharpening of planting sticks. Gerard Fowke describes the cupped-stones in the Bureau of Ethnology collection,[59] as follows, and it will be noticed that thin pieces have cups on both sides, while the large blocks have them only on one. This was because it was convenient to turn the small stones over. In some cases where a cup had worn too large, another was started in the bottom of it, perhaps because the rock at that particular spot suited the fancy of the individual. Fowke says: “The cupped-stones in the Bureau are almost invariably of reddish sandstone, of varying texture, from a few ounces to thirty pounds in weight. The holes are from one to twenty-five in number, of various sizes, even in the same stone, and follow the natural contour of the surface even when that is quite irregular; the stone is never flattened or dressed to

bring the cups on a level; none show any marks of work, but are rough blocks or slabs in their natural state. Many of the holes are roughly pecked in, but the larger ones are usually smooth, as if ground out, and almost complete hemispheres. They range from a pit only started or going scarcely beyond the surface to one two inches in diameter. The smaller ones with one cup pass into the pitted stones. Occasionally at the bottom of a large cup there is a small secondary hole as though made by a flint drill. Slabs or thin pieces nearly always have cups on both sides, while blocks or thick slabs have them on one side only."

In the case of the cup markings of the Eastern Hemisphere, their frequent peculiar arrangement accompanied by grooves and circles may have pertained to some ceremony connected with the drill-dressing. It may have been thought that the fire would come quicker, be better, or last longer when the drill was dressed in holes of a certain type; or special stones and holes of peculiar arrangement may have been required for dressing the drill-end that was to be used by the priest in the sacred ceremony of producing the "new-fire." In this manner a primitive custom might become sacred and be surrounded with symbolism exemplified in cup markings the world over.



CUP FROM CHIRIQUI



TERRA COTTA FROM CHIRIQUI

CHAPTER IV

THE MEXICAN AND CENTRAL-AMERICAN WRITING, INSCRIPTIONS, AND BOOKS

WHILE there are found in the mounds of the central Mississippi region, and also among the living natives of the North-west coast, resemblances to the art work of the Aztecs, Mayas, and other tribes of the Central-American region, there is no evidence that there was any approach, in these localities or elsewhere, to any kind of record to be compared with the proficiency of the South. What there may once have been in the way of writings on bark or wood we can only conjecture. The Davenport tablet has been pronounced, on good authority, to be within the powers of the Dakota tribes. Other tablets and inscriptions of the Eastern region are surrounded with doubt.

The Mexican, that is, the Aztec, writing was more pictorial than that of the Mayas. It was cruder in

every way, and comparing the two in the pages of Kingsborough and later reproductions, it is easy to distinguish a superior culture indicated by the writing of the Maya. We are more fortunate in the number of Aztec manuscripts preserved. The Spanish priests did what they could to obliterate the books existing when they came into the country, and Bishop Zumarraga made a fine bonfire out of a lot of them. But some escaped. Some priests sent copies or originals back home as curiosities, thinking, doubtless, that this took them out of the sight of the natives quite as effectually as the burning, and the natives themselves succeeded in preserving in secret some of the ancient documents. None of the oldest, however, have been found, but in time the number known to us may be considerably increased. One by one they turn up unexpectedly. That called the Codex Borgia was in use as a plaything of children of the Gustiniani family, till rescued by Cardinal Borgia, and only recently another one has been found dating from the year 1545,[60] wherein there are pictorial combinations never before seen. Thus gradually our data are increasing, and with the awakening interest in Amerindian archæology that seems to have come in these latter days of the nineteenth century, a century that has let slip much valuable data never to be recovered, further finds may be expected from time to time. The style of the Aztec documents is different from that of the Maya and Brinton believes them to be independent developments. It is possible, however, that both were derived from the same source and developed independently.[61] The Aztec writing is of a "rebus" character, and Brinton has applied to it the term *ikonomatic*, which he explains as follows in his *Essays of an Americanist*[62]: "All methods of recording ideas have been divided into

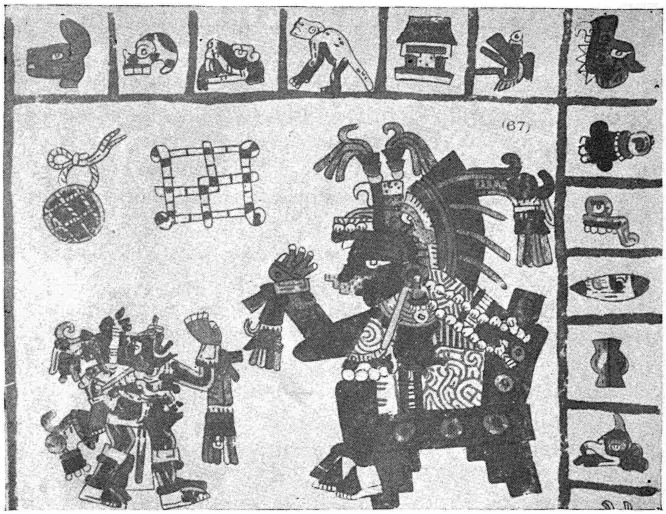
two classes—Thought Writing and Sound Writing. The first, simplest and oldest, is Thought Writing. This in turn is subdivided into two forms—Ikonographic and Symbolic Writing. The former is also known as Imitative, Representative, or Picture Writing. The object to be held in memory is represented by its picture drawn with such skill, or lack of skill, as the writer may possess. In Symbolic Writing, a single characteristic part or trait serves to represent the whole object; thus the track of an animal will stand for the animal itself.... It will be observed that Thought Writing has no reference to spoken language; neither the picture of a wolf nor the representation of his footprint conveys the slightest notion of the sound of the word *wolf*. How was the enormous leap made from the thought to the sound—in other words, from an ideographic to a phonetic method of writing? This question has received considerable attention from scholars with reference to the development of the two most important alphabets in the world, the Egyptian and the Chinese. Both these began as simple picture writing, and both progressed to almost complete phoneticism. In both cases, however, the earliest steps are lost, and can be retraced only by indications remaining after a high degree of phonetic power had been reached. On the other hand, in the Mexican and probably in the Maya hieroglyphics, we find a method of writing which is intermediate between the two great classes I have mentioned, and which illustrates in a striking manner the phases through which both the Egyptian and the Semitic alphabets passed somewhat before the dawn of history. To this method, which stands midway between the ikonographic and the alphabetic methods of writing, I have given the name

ikonomatic, derived from the Greek εικων-ονος, an image, a figure; ονομα-ατος, a name.... It is this plan on which those familiar puzzles are constructed which are called rebuses and none other than this which served to bridge over the wide gap between Thought and Sound Writing. It is, however, not correct to say that it is a writing by *things*, rebus; but it is by the *names* of things, and hence I have coined the work ikonomatic to express this clearly." The position of the signs often had important significance, just as it has in some of our puzzles, like the following:

WOOD
JOHN
MASS

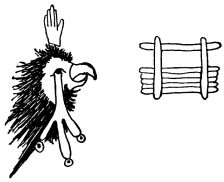
which is said to have been the address on a letter that found its destination in John Underwood, Andover, Massachusetts. It might be supposed that, having acquired a knowledge of the method of the Aztec writing, the general principles of which, according to Brinton, were known many years ago, we would now be able to translate the Mexican documents with little difficulty. The trouble lies, however, in the lack of exact knowledge of the Nahuatl language itself, and till that is acquired small progress will be made. It will be necessary to understand this language before its modern additions and changes came in, in order to connect it with the picture-writing, or rather the ikonomatic writing, of the fifteenth and previous centuries. It has been doubted whether there is any phonetic element in either the Aztec or the Maya hieroglyphics, but the evidence seems to indicate that there is a phonetic element, notwithstanding that there has been a following in many cases of rather slender threads of

evidence.



PAGE FROM AN AZTEC BOOK

Plate 67 of the Nahuan precolumbian Vatican Codex, No. 3773, Loubat edition. This is the 19th page of the Tonalamatl, the sacred astrological calendar of the Aztecs. The seated figure is the goddess Xochiquetzal, and on the left is the god Tezcatlipoca. The book is in size about 5 × 6 inches.

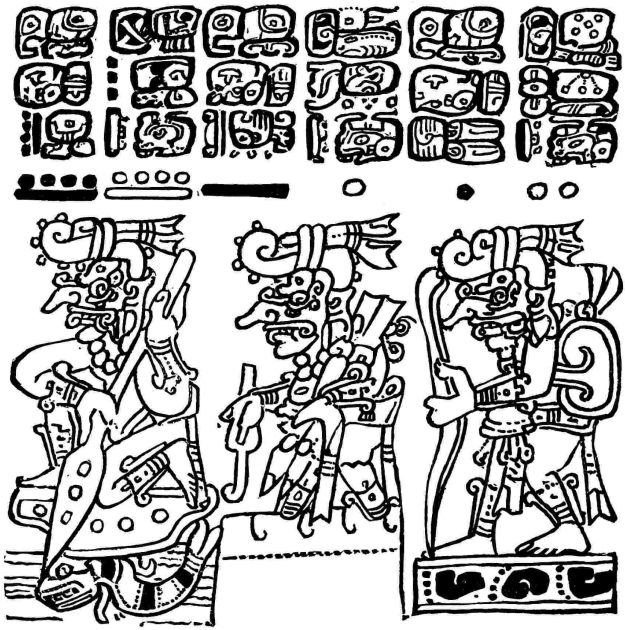


MEXICAN WRITING OF NAME OF MONTEZUMA

Brinton gives the accompanying illustration of the character of the Aztec writing, this being the name of Montezuma, but really reading Moquahzoma. As most writers spell this name to suit themselves, judging from the great variety of spellings, we may as well accept Moquahzoma too. Indeed, as this seems to be supported by the evidence of the writing,

it is more likely to be correct than the others. The picture at the right is of a mouse-trap, *montli* in Nahuatl, "with a phonetic value of *mo* or *mon*; the head of the eagle has the value *quauh*, from *quauhtli*; it is transfixed with a lancet *zo* and surmounted with a hand *maitl*, whose phonetic value is *ma*, and these values combined give *Moquahzoma*."

When Mendoza was viceroy of New Spain, he caused a specimen of Aztec writing and book-making to be prepared and sent to Charles V., with an explanation in Spanish. Copies of this exist to-day; one in the Bodleian Library, Oxford, and another, which Prescott thought was the original, though Bancroft believed it to be a copy, in the Escurial Library. This Codex Mendoza was in three parts: 1st, historical; 2d, tribute rolls; 3d, descriptive of the domestic life and manners of the people. Besides this and the Borgia, there are the Codex Vaticanus, in the Vatican Library, another in the same place written on skin; the Codex Telleriano-Remensis, in the Bibliothèque National, Paris; the Codex Bologna, in the library of the Scientific Institute, and a number of others in divers places.[63] The remnants of the native Tezcucan archives were inherited by Ixtlilxochitl, lineal descendant of the last "king" of Tezcuco, who used them in preparing his historical writings. The collection afterwards disappeared.



PART OF PLATE 65, DRESDEN CODEX
Maya

Many of the manuscripts were merely chronological, but there were also tribute rolls, law codes, court records, historical records, and all the varied writings that belong to an active and intelligent people. The priests executed and held in their possession the important books, and seem to have been the leaders of whatever learning existed. “These writings,” says Bancroft, “were a sealed book to the masses, and even to the educated classes who looked with superstitious reverence on the priestly writers and their magic scrolls.”

The paper used was usually made from the leaves of the maguey. It is probable that the Aztecs learned to make it from the Mayas or from some intervening tribe who had learned from the Mayas. Sometimes the books were long strips of cotton cloth, or even a

kind of parchment. They were either rolled up or folded like a screen, and frequently had covers of wood. A great deal of ingenuity and skill were bestowed on the preparation of these books and the writing they contained.

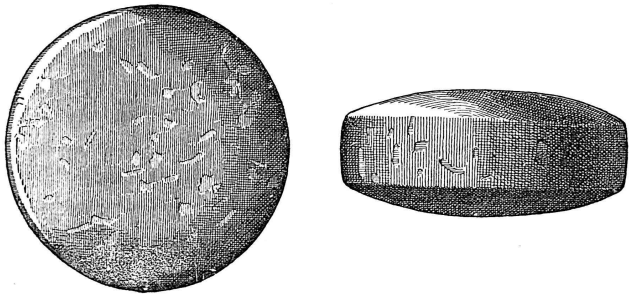
The appropriate name of "calculiform"[64] has been given to the Maya hieroglyphics because of their resemblance to pebble forms. Besides the inscriptions carved on stone from the Isthmus of Tehuantepec to the northern border of Honduras, there are some on wood and in stucco, but there exist, so far as known, but very few of the numerous records and books of perishable material which the pious zeal of the Spanish priests hastened to gather together and purify of heresy and wickedness in the fires of bigotry. Bishop Landa says: "As they contained nothing that did not savour of superstition and lies of the devil, we burnt them all, at which the natives grieved most keenly and were greatly pained." The practice of the Mayas, it is said, was to bury the books with the priest who had written them, in which case large numbers of the writings must have been disposed of before the Spaniards took a hand. Doubtless, however, only certain books were thus buried with the authors, and perhaps copies of these may have been preserved. At any rate, unless some of the books have been protected in an absolutely dry place, tomb or what not, or there were also writings on tablets of clay or stone, we are not likely to have our present scanty knowledge of the ancient Mayas much increased through this channel. There are possibilities of discovery in many ways, even amongst the papers in forgotten archives.



VASE FROM LABNA, YUCATAN, WITH PECULIAR MARKINGS
Diameter at top, 5 inches; diameter at bottom, 4 inches; height, 4½ inches

In the Peabody Museum at Cambridge I saw a small vase from Labna that fixed my attention at once, and I understand there are others in existence of a similar character. It bears certain marks in the clay that suggested to my mind an alphabetic system. The marks are in groups, each group contained in a space that apparently corresponds to the calculiform inscriptions of the monuments. It seems possible, therefore, that this may be a development out of the calculiform. Afterwards I found a reference apparently to this same vase in Brinton's *Primer of Mayan Hieroglyphics*. He says: "There is some reason to suppose, however, that in this part of the Mayan territory there had been a development of this writing until it had become conventionalized into a series of lines and small circles enclosed in the usual square or oval of the katun. I have seen several

examples of this remarkable script, and give one, Fig. 79, part of an inscription on a vase from Labna, Yucatan, now in the Peabody Museum." If these marks should turn out to be alphabetic, then we may expect to find slabs and tablets similarly inscribed.



CONVEX DISCOIDAL STONE, NORTH CAROLINA

We are but at the beginning of our investigation of the Amerind field. Only recently Saville discovered an entirely new form of hieroglyphic in Oaxaca in a tomb believed to be Zapotecan. Organised and exhaustive exploration will yield fine results. "Such organised and exhaustive exploration is the more to be desired," says Goodman, "for the reason that all the inscriptions so far brought to light are of a purely chronological character, destitute of any real historical importance. They are merely public calendars, as it were, showing that at specified dates certain periods of their scheme would begin or end, or that a correspondence would occur between two or more of their different plans for computing time. Aside from the circumstance that the initial date in most instances undoubtedly marks the time at which the temple, stela, or altar to which it belongs was erected, I do not believe there is the record of a single historical event in all the inscriptions at present in our possession. That a people as cultured as they should have had no historical records at all,

would be a presumption too absurd for credence, even without the testimony of the early Spanish authorities to the contrary. The actual question is whether any of them will ever be discovered. If they were inscribed upon paper or parchment and buried with their priestly owners, as we are told, there is very little hope that any vestige of them remains, unless there may have been some instance of almost miraculous preservation. Still that remote chance is worth a vast amount of research. But a better hope ... is that in crypts or tombs or other unexplored receptacles may be collected historical tablets of durable material—stone, stucco, baked clay, or even metal—which patient excavation will yet unearth." Chance has played the chief part in the preservation of the few documents that have come down to us. In the Bibliothèque National at Paris the Maya one now known as the Codex Peresianus had been neglected amongst a lot of old papers where De Rosny happened to discover it. It has generally been assumed that because there was found one form of writing on the monuments and a similar form in the few documents preserved there was but the one method. This, however, does not necessarily follow. The monumental records and the chronological books may have been written by the priests in the archaic style while the ordinary and common style was something quite different.[65] Pio Perez has been followed with great faith, but Goodman thrusts him aside in the following paragraph: "The man who led everybody astray ... was Don Pio Perez.... In the absence of any regularly ordained authority, he was at once accepted on his own bare assumption as a leader and lawgiver, and then began that journey through the wilderness which has lasted more than forty years.... I ran in the ruck for seven seasons....

Then I turned and went back to Landa—to whom all desirous of reliable information concerning Maya chronology must go at last."[66] The trouble with following Landa has been the inaccuracy of the translation by the Abbé Brasseur as well as a certain confusion existing within the original manuscript.[67]

Brinton says: "The Mayas were naturally a literary people. Had they been offered the slightest chance for the cultivation of their intellects, they would have become a nation of readers and writers." Instead of having this chance they were crushed by the Spaniards and never rose again. But the decline of the Mayas cannot be altogether laid at the door of Spain. The remnant of the stock encountered by the Spaniards was already on the down road and had been for a long period.[68] That the Mayas had long passed the zenith of their progress is generally admitted, and we are not entirely sure that the people we know as Mayas were the original stock or only a mixture of the original and an inferior, wilder stock which mingled with them in the days of their decline. When a stock declined or became extinct, other stocks from contiguous territory or from farther off were likely to come in and possess themselves of whatever they found that was valuable and also become permanent residents of the country, just as the Navajos took up their home in a land that was formerly the residence of a different, house-building stock of whom the Navajos preserve, so far as I am aware, barely a reminiscence. Berendt thus describes the neighbourhood of Cintla: "Not a single tradition, not a single native name survives to cast any light upon these ruins. The whole of this coast was depopulated in the seventeenth and eighteenth centuries owing to the slave-hunting incursions of the filibusters and man-hunters. The Indians who are

now found in the neighbourhood have removed there from the interior since the beginning of the present century, and are absolutely ignorant of the origin or builders of this city."

Not until we are in possession of historical data from the Mayas themselves, if that happy time ever arrives, can we be absolutely certain as to the present descendants.

"In Yucatan," says Brinton, "the books of the Mayas consisted of a kind of paper made by macerating and beating together leaves of maguey and afterwards sizing the surface with a durable white varnish. The sheet was folded like a screen, forming pages about nine by five inches. Both sides were covered with figures and characters painted in various brilliant colours. On the outer pages boards were fastened for protection, so the completed volume had the appearance of a bound book of large octavo size. Parchment was sometimes used instead of paper. It was made of deerskin cured and smoked. Twenty-seven rolls of such parchments covered with hieroglyphics were among the articles burned by Bishop Landa at Mani in 1562." "None of them, however," remarks Goodman of the Maya books that have been found, "can be of much assistance in solving Maya historical problems, as they are all merely text-books explaining the meaning of signs, the elementary principles of their respective calendars and certain phases of lunar, solar, and in a few places, bissextile and chronological reckoning. I believe the figures usually supposed to represent deities to be only personifications of different periods or phases of time, and that most of the glyphs are merely numerals or symbols used for the occasion in their numerative sense only."

It is plain, therefore, that much of the supposed interpretation of the Maya inscriptions has had little solid foundation, has in fact been little better than guesswork. There was one sanguine translator who was discovered to have begun at the *wrong end* of the book! The readings of the Maya inscriptions sometimes suggest that other mysterious operation of certain brilliant scholars of our time, the discovery and reading of the Shakespeare-Baconian cipher. The lack of real understanding of the Maya subject is pretty well indicated by the various estimates of the value of Landa's legacy. One author, Holden, states that it was a positive misfortune, while Goodman, after following other lines for a time, returns to Landa as the only real foundation for accurate study. There is even yet difference of opinion as to the proper directions, left to right or up and down, etc., in which the works are to be read when they are read. Apparently the first sensible thing to be done is to gather together all that Landa wrote and reduce it to a shape that will place it before the greatest number of students, in connection with specimens of every kind of a mark or picture that by any possibility might have alphabetic significance. A striking peculiarity of the Maya remains is that there are not found any preliminary or originating forms of the glyphs. "We are compelled therefore to admit," says Thomas, "that the origin of this writing is a mystery we are unable to fully penetrate."[69] It may be that the forms from which it was derived were recorded on skins, on wood, or on bark, and in that case they probably disappeared before the beginning of the Maya decline. "A difference, it is true," says Thomas,[70] "in the forms and ornamentation, and, to a certain degree, an advance toward a more perfect type, can be traced, but no examples, so far as the

writer is aware, of the first rude beginnings or the original forms have been found. Some comparatively rude are found painted on pottery, scratched on shells or other soft material, but these belong to what may be termed demotic writing and are not primitive forms. Comparing the characters of the various inscriptions which have been discovered and those found in the few remaining pre-Columbian manuscripts, the result is as follows: *First*, it is apparent that the characters in the manuscripts have been adapted from those of the inscriptions. In other words, inscriptions preceded the manuscripts; hence we must look to the former for the older forms. What appear to the writer to be the oldest forms of the glyphs yet discovered are seen in those of Palenque and some of the inscriptions found by Charnay at Menche (Lorillard City), though others discovered by him at this same place belong to the later and more ornamental type, discovered in the Peten region, that is those carved in wood discovered by Bernouilli at Tikal, a type also found at Copan and Chichen Itza, but in none of the inscriptions at Palenque." For my part, I cannot see that Thomas has exactly proved that the manuscripts were later than the stone-carved inscriptions, but his knowledge of the subject is so great and his methods so cautious that I am glad to give his statement in this connection.

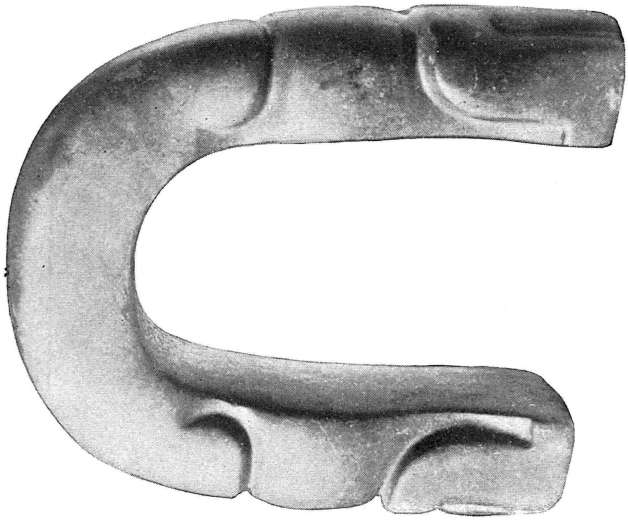


FEMALE HEAD IN TRACHYTE
From slope north of Temple 22—Copan. Slightly larger than life

The Maya glyphs probably developed out of something like the Mexican or Aztec writing; and the step was not a very long one from writing of the character of the Lenapé *Walam Olum* to that of the Aztec, and again it was not a long step from the ordinary picture-writing to the *Walam Olum*, so that it would seem that in these various writings we have an interesting series of steps from the crudest attempts at records, nearly, if not quite, to the highest, for it must be borne in mind that the step from the Maya glyphs to a true phonetic alphabet would be even shorter than any of the others. It is

not impossible that something of the kind may yet be discovered. While the Mayas had made little progress in mechanical inventions, their progress in architecture, art, writing, and in astronomy is a proof that they were a thinking people, and, had conditions continued favourable to their progress, the Spaniards would have found them not easy to vanquish. The prominent and striking quality of the calculiform style has had a tendency to obscure the point that there may have been another system in vogue, more simple, more modern, in short purely phonetic. Perfected phonetic characters are simple characters and are likely not to attract notice, especially when attention has been fixed on other forms.

So far as now understood, there is no relationship between any kind of Amerindian writing and that of other races. Like everything else pertaining to the Amerind people, the development appears to have been purely indigenous. Le Plongeon, however, asserts that "abundant proofs of the intimate communications of the ancient Mayas with the civilised nations of Asia, Africa, and Europe are to be found among the remains of their ruined cities."[71] The grounds accepted for this statement do not seem to be sufficient to satisfy other investigators. Certainly if there was any inter-communication, it was before the acquirement of iron-working in other countries, as so far no prehistoric iron has been found in the ruins of Yucatan.



W. H. Holmes

USUAL TYPE OF SCULPTURED "YOKES," CENTRAL AMERICA
15½ inches long; 14½ inches wide; thickness, 3½ × 4½ inches
Substance: Dark, greenish grey, very compact, chlorite; surface well polished. Carving of a frog or toad

After the coming of the Spaniards, some of the Mayas soon learned their alphabet and the missionaries added, says Brinton, "a sufficient number of signs to it to express with tolerable accuracy the phonetics of the Maya tongue. Relying on their memories, and, no doubt, aided by some manuscripts secretly preserved, many natives set to work to write out in this new alphabet the contents of their ancient records. Much was added which had been brought in by the Europeans, and much omitted which had become unintelligible or obsolete since the Conquest, while of course the different writers varying in skill and knowledge produced works of very various merit. Nevertheless each of these books bore the same name. In whatever village it was written, or by whatever hand, it always was, and to-day still is, called '*The Book of Chilan Balam.*' To

distinguish them apart, the name of the village where a copy was found or written is added. Probably in the last century almost every village had one, which was treasured with superstitious veneration." Sixteen of these curious books are known to exist, but there has never been a complete translation of any of them. The following specimen is from *The Book of Chilan Balam* of the town of Mani, and is taken from Brinton's *Chronicles of the Maya*.[72]

"*Lai u tzolan katun lukci ti cab ti yotoch Nonoual cante anilo Tutulxiu ti chikin Zuiua u luumil u talelob Tulapan chiconahthan.*"

Translation: "This is the arrangement of the katuns since the departure was made from the land, from the house Nonoual, where were the four Tutulxiu, from Zuiva at the West: they came from the land Tulapan, having formed a league."

The strange title of these books is derived from that of the priests or shamans, who were believed to have divine powers. They date from 1595. The Maya books at present known are three, one in two parts, with these titles: 1. *Codex Tro* or *Troano*, 70 pages, found by the Abbé Brasseur at Madrid; 2. *Codex Cortesianus*,[73] so named because of a belief that it was brought to Europe by Cortes, also at Madrid, and believed to be a part of the Troano; 3. *Dresden Codex*, 74 pages, in the Royal Library, Dresden; 4. *Codex Peresianus*, 22 pages, the one discovered in the Paris Bibliothèque National by De Rosny, and given its title from the name "Perez," written on the outer wrapper. Besides these it has been supposed that there are several in private hands. The Quiches, of Mayan stock, had a sacred book called the *Popol Vuh*,[74] and the allied Cakchiquels had their *Records of Tecpan Atitlan*. Other tribes or stocks of the Mexican

region undoubtedly had books and records also, but in the present state of knowledge nothing definite can be said about them. But there was a general high development of all, or at least, the majority, of the stocks occupying Mexico and Central America in the fifteenth century and before, so that it is entirely reasonable to expect a considerable corresponding development in the line of picture-writing, hieroglyphs or alphabets. These, in some cases, will come to our knowledge, just as the new hieroglyph attributed to the Zapotecs recently rewarded the investigations of Saville.

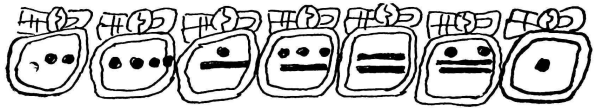
The numeral systems of these people were well developed, and they were able to make exact calculations in astronomical, and in all other matters. The Aztecs used dots from one to ten, or twenty, and then symbols. The Mayas used dots only to four, and then dots and lines to nineteen, beyond which little is known of their method. Like all the rest of the Maya subject, there is in this line of investigation considerable confusion and great uncertainty. The table herewith given is a suggestion of a possible line of study. It seems to me to be the *method* that was followed, though my arrangement or even the figures are not correct. I introduce it here, before bestowing upon it further study, because it may contain an idea that will start someone else on a right track. It has been generally accepted that one dot • is one, two dots •• two, and so on to four ••••, after which five was a straight line, ▬▬. Here arises a question. Did the dots and lines mean the same when horizontal as when vertical? They occur both ways in the inscriptions and in the manuscripts, and Goodman takes them to be the same. Vertical and

horizontal occur together frequently, thus:  from Pl. 51, Dresden Codex. A doubt fills my mind, however, on this point. It is possible that when vertical the dots and lines had a different meaning. On this assumption, the two, three, etc., horizontally placed would mean either one, two, three, etc., or some higher figures, leaving the vertically placed ones to take their place as one, two, three, etc. I assume that the vertical ones were the beginning. The Maya system was a vigesimal one, that is, a counting by twenties. Every new twenty, therefore, would be represented by a new symbol. Referring to the table, it will be seen that the dots and lines vertically placed and combined carry the table easily to nineteen, that is, a dot beside the five line gives six, two five lines give ten, three, fifteen, while the addition of the dots carries the count quite naturally to the nineteen. It is now necessary to adopt a sign for twenty, and there have been adopted by various authors as many various signs, with several variants in each lot. Once settle on a symbol for twenty, and the road is easy to twenty-nine by placing the dots and lines horizontally. Thomas gives this figure  for twenty,[75] but I do not believe it is twenty, and for convenience will adopt this  . Then to get twenty-one it would be simple for the Maya to put a little cross on each side of the dot, that is above and below,  . This figure is frequent, and it is varied sometimes by this  , and by this  , which Brinton assumes all to be variants of twenty. I take it they are variants of twenty-one and twenty-two, or of one and two. Running down to twenty-nine by means of the

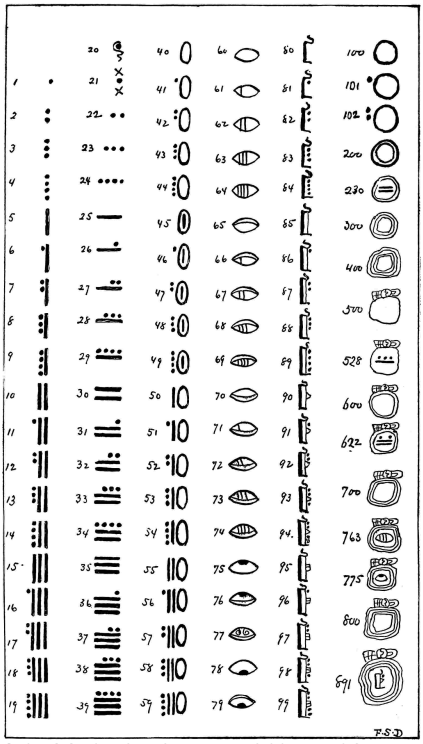
dots and lines, we arrive at the necessity for a new symbol for forty, and I take a common symbol in the inscriptions,  . To follow precisely the method indicated by progress thus far, we would put a dot inside of this for forty-one, but the Maya does not seem to have done this, but made a slight change, perhaps to avoid confusion, and he put the dot outside and to the left,  . Four of these dots make forty-four, and then forty-five is represented by a straight line vertically within. Dots now outside as before carry to forty-nine, when a vertical line replacing the dots gives fifty. Adding dots again as before leads to fifty-four, while doubling the lines with the dots produces all figures up to fifty-nine,  . Then once more a new character is needed to go on, and one is chosen that is very common in the Dresden Codex, occurring in a number of different forms. It is this  in its simple form. Thomas takes it in this form  for naught, and Förstеman for the same numeral in this form  . The difference between these two is immediately apparent, and it seems that both these able investigators have made a mistake in this respect. It is as if some future investigator should give as our naught the figure 6 and the figure 9. The simple form is possibly one of the chief Maya numerals and the enclosed lines give it the necessary differentiation. Some change occurs again here, in the system I have attempted to outline. There are used lines instead of dots, though dots also were used, and the horizontal line does not appear to have been doubled; at least I have been unable to find an example of it, though, as

the number of manuscripts is limited, I could hardly expect to find examples of all the figures in them. The carved inscriptions being, as is believed, older than the manuscripts, there would be a difference between the numerals in them and in the books. But we will take the simple character  for, say, sixty. It may be mentioned again that these selections and their order are merely tentative. Only by long study might the matter be determined. Adding lines transversely as found in the Dresden Codex, we arrive easily at sixty-four. Following the previous system, a horizontal line with an upward curve then gives  sixty-five, and transverse lines again take us to sixty-nine. A horizontal line with a down curve produces seventy  . Seventy-four would then be  , and as the horizontal line seems not to have been doubled we are forced to choose another character for seventy-five  . A down curved horizontal line then gives seventy-six  , while for seventy-seven an entirely new form is used. The reversal of seventy-five and seventy-six carries to seventy-nine. The cross lines in some cases appear to have been used up to sixty-seven. There are so many different figures of this kind that it is possible they were used interchangeably in some cases. For eighty a new figure is required, and I have selected one that occurs frequently in the Dresden book, in shape something like a bow,  . A series of dots readily carries to eighty-four, and then the substitution of a line like a bow-string gives eighty-five  . The next step at ninety would be to double this bow-string, but this

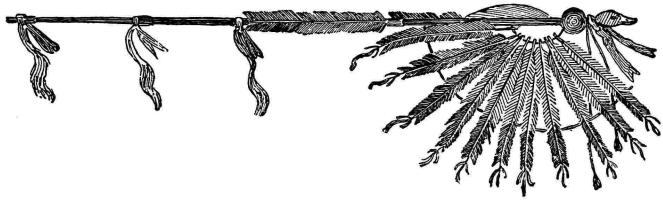
seems not to have been done, as I can find no example of it. But I do find a differentiation in another way, probably because in this figure doubling the string would be clumsy. The difference is made by a rider on the string, and there are two kinds of rider, one a point or triangle, and the other a double square. Taking one of these riders for ninety, and then the dots beside it, we find ourselves at ninety-four  . Then with the other rider on the string for ninety-five we arrive by means of the dots at ninety-nine  . Then comes a demand for a character for one hundred, and this appears to have been merely a circle. A dot beside it would give 101, and so on by adding, out or in, the various symbols 199 is reached. To get to 299 it is only necessary to add another circle. For 500 some other symbol must be adopted, and the apparent one is a sort of circle with a kind of scarf knot at the top, or perhaps it can be described as a knotted scarf,  . Taking this as 500 we can easily arrive  at 599. An extra circle within will then carry to  699, and so on by adding circles up to 1000. Thomas in one of his admirable discussions of Maya writing[76] is puzzled by what he terms ornamental loops around some of the numerals, but if the line I have indicated here has any sense in it these ornamental loops would be 602, 604, etc., or some other numbers depending on the proper place for this symbol in the general scheme. The series of “loops” mentioned by Thomas is this:



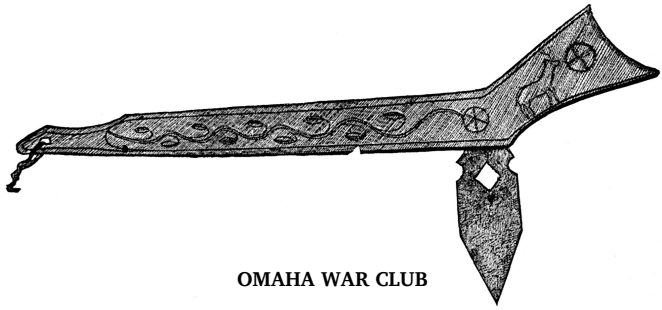
Something might be determined by a comparison of these symbols with the known names of numbers. The Mayas counted into the millions, so they must have had a perfected system.



A SUGGESTION OF THE POSSIBLE SCHEME OF MAYA NUMERALS. WHOLLY TENTATIVE
Founded on figures in the codices and on tablets



OMAHA CALUMET



OMAHA WAR CLUB

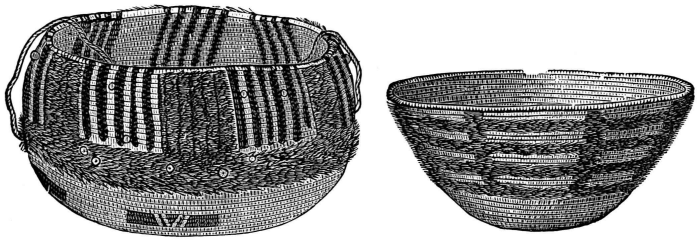
CHAPTER V

BASKETRY AND POTTERY

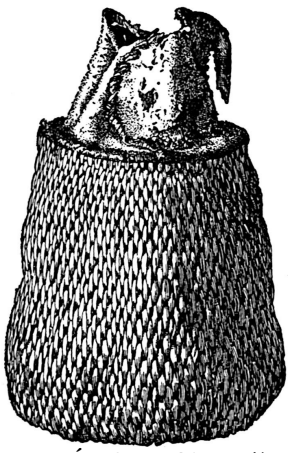
ALMOST every tribe the world round seems to have acquired at a very early stage in its progress a knowledge of plaiting rushes, strips of bark, or other simple substances, for use as beds, covering of shelters, etc., and in this knowledge may be discovered the beginnings of several arts of the first importance to man: basketry, weaving, and pottery. Basketry and pottery are mother and daughter. Plaiting together straws or rushes was a simple operation and must have occurred to the most primitive tribes spontaneously as the need for some such thing arose. Having produced a mat and used it for various purposes, the turning up of the sides, or edges, for the purpose of retaining things upon it, thereby producing a shallow basket or tray, was an easy step, and by such stages did basketry grow to perfection.[77] The Amerinds excelled particularly in this art, and there were few tribes without ability to make baskets and other wicker-work, the character

and excellence of which depended to a considerable extent on the material available.

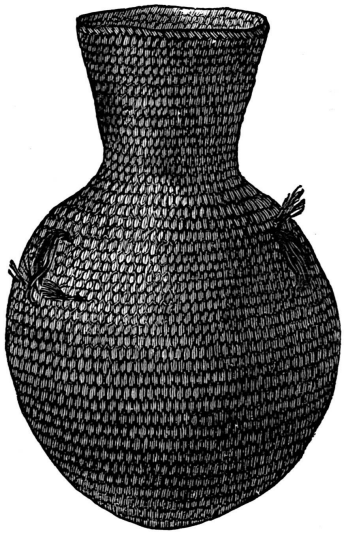
Wicker jugs, rendered water-tight by means of pitch, were invented and used for cookery, hot stones being introduced through the wide mouth, to bring the contents to the required temperature, and it was the effort to protect the basketry used in the various culinary operations from the effects of the heat that led to coatings of mud or clay, which being hardened by the fire, disclosed the great secret. There is still in use among some of the more primitive tribes of America a “boiling-basket,” that is, a wicker jug rendered waterproof, and in which food is cooked as indicated. In Zuñi this basket was known as a “coiled cooking basket,” and the corrugated earthen pot used to this day is called a “coiled earthenware cooking basket.” And the Navajos still call earthenware pots, “kle-it-tsa” or mud-basket. In these terms is seen a clear indication of the origin of pottery among the Amerinds in basketry. Cushing found these boiling-baskets in use a few years ago among the Havasupai, who live an isolated life in northern Arizona, and I saw similar jugs among the Amerinds of Utah twenty years ago, and some more recently among the Moki, the latter, however, not using them for boiling purposes, and perhaps not being the makers of them. They are bottle-shaped, but with wide mouths, and provided near their rims with a sort of cord or strap for a handle attached to two loops or eyes. In some of the pots derived from this form these loops are represented by little knobs of clay, or by an ornament.



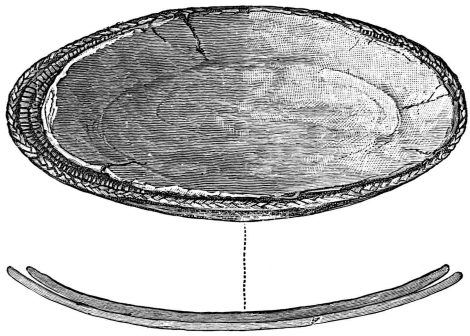
NORTH-WEST COAST FEATHER ORNAMENTATION ON BASKETS



TINNÉ WORK-BASKET, ⅓



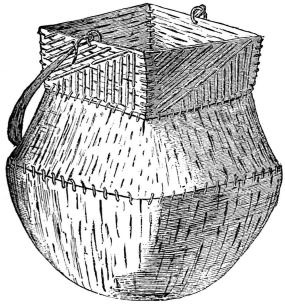
MOKI WICKER WATER-JUG, ¼



HAVASUPAI CLAY-LINED ROASTING TRAY

Cushing describes the Havasupai in Arizona as using a wicker tray lined with clay for the purpose of roasting or parching seeds, and this was probably used by all primitive peoples. The seeds were placed on the clay-lined tray and agitated with live coals. Naturally the clay is hardened by the heat of the coals, and would be sure to suggest the making of utensils from it by means of fire. The turning up of the edges would follow the use of the first trays

made of clay, in imitation of wicker bowls, and so would other forms of basketry be imitated, as well as forms in horn, wood or shell. Perhaps the wicker jugs may have been coated with clay on the outside for protection, and eventually the heat not only baked the clay but destroyed the wicker framework that had supported it. Thus jugs of clay may have been made by burning away the framework every time, just as Lamb's discoverer of roast pig could find no other way of securing his toothsome morsel than that of burning down the house. Or the jar may have been modelled on the inside and then the wicker burned off. When we speak contemptuously of primitive peoples it is well to remember that they were inventors as well as ourselves.



IROQUOIS BIRCHBARK VESSEL



NORTH-WEST COAST BASKET, 1/8



M[C]CLOUD RIVER BASKET, CALIFORNIA

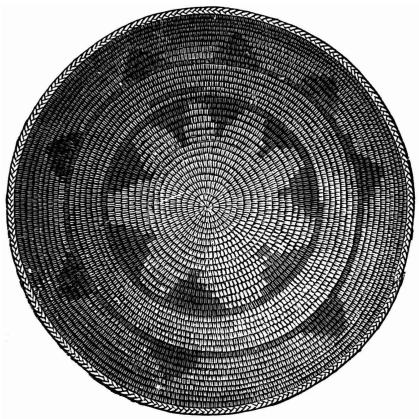
When the art of pottery was discovered basketry remained in use, for pottery could not take its place in many uses then any more than it can to-day. The environment and habits of a tribe controlled the amount, the quality, the character, of both basketry and pottery. A tribe possessing plenty of good clay would make more and better pottery than one finding clay difficult to acquire, provided both had reached the same degree of proficiency in this art, but mere abundance of good clay would not necessarily make skilful potters; that is, the degree of progress in culture of a tribe and other factors of environment than the presence or absence of good clay in quantity had much to do with pottery-making. For example, the Pueblos and the Navajos occupy the same kind of a region, or rather the same region, with plenty of clay and a similar abundance of yucca, willows, etc., for basketry, yet the Pueblos carried pottery-making to a high degree of

excellence, while the Navajos produced only a limited amount of inferior ware. Nor is this a matter of intelligence, for the Navajos are as intelligent as any Amerinds living, and besides, as has been mentioned, probably have a strong infusion of Pueblo blood. While the Navajos have gone farther in silver- and iron-smithing, they have lagged behind in pottery and house-building. So it is also with basketry. While the Pueblos no longer make boiling-baskets or jugs, or at least, if they do occasionally make them, they do not use them for cooking purposes, yet they produce some fine trays and bowls.[78] Inclination and fancy, as well as necessity, have much to do with the development of the arts. Tribes might attain a wonderful development politically, like the Iroquois, and yet possess hardly any proficiency in any art, while others, like the Navajos, with scarcely any political development, possess high artistic skill in weaving and metal-working, but none in pottery. Great in war and government the Iroquois certainly were, but they had not reached the border line of artistic development. Neither weavers, potters, nor builders were they (though Bandelier maintains that their long-house was as difficult of construction as any house the Pueblos build), and, outside of the idea of the league, their government was not much superior to that of the Pueblos. Their pottery, limited in quantity, was very inferior to that of many other Amerinds. It is probable that following the line of race development they would eventually have produced excellent ware, but the iron pot made its appearance and progress in pottery was doomed. On the North-west coast little or no pottery is found. Quality and quantity increase as we approach Yucatan.

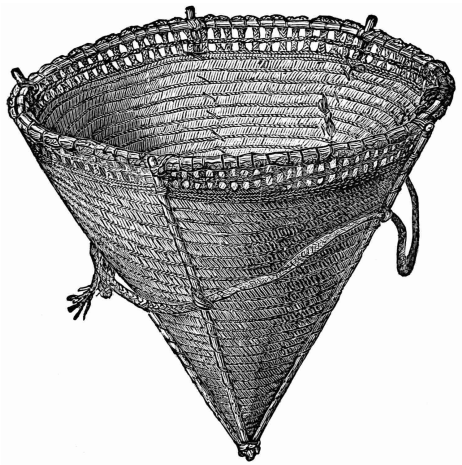
Tribes with unfavourable environment would find

it next to impossible to acquire skill in pottery. The Eskimo, with a temperature for the greater part of the year near or below freezing, and a scarcity of fuel, would find moulding forms out of wet clay about the last occupation to think of. The Eskimo, therefore, made almost nothing of clay except occasionally a lamp.[79] The Kutchins of the Yukon country make pots and cups of clay, but in the main the Far Northern people rely on basketry, soapstone, and on metallic vessels obtained from the whites. Nor is the North land entirely favourable to basketry, yet the Aleut basket-work is exceedingly fine in texture, some of their productions being almost a cloth. This is specially true of baskets made on the island of Attu of the Aleutian chain. These are usually cylindrical, sometimes fitted with a cover of the same material. So soft and pliable are they that they can barely sustain an upright position. This fine texture is a characteristic of all the basketry of the North-west coast, but there is not much variety in form and the artistic shapes so common with the Amerinds southward of the Columbia are absent. The decorations are similar to those of other Amerinds and are woven in with quills, grasses, feathers, bits of silk, or worsteds, appropriately coloured. In the interior of the Northern lands, the Kniks and others make a substitute for baskets out of thin boards steamed and bent around a flat bottom piece which fits into a groove in the board. It is fastened in place with split roots or skin thongs. Among the Eskimo sealskin cups and buckets are used, and some made of whalebone, but they also make a basket out of coiled grasses, which is artistic and has a variety of interesting forms. East of Point Barrow baskets are rare. Birchbark vessels of various kinds were used by many tribes as substitutes for baskets, and doubtless

some forms in pottery were derived from these vessels as well as from baskets. Some tribes made pottery and then, as circumstances changed, they abandoned its use and finally forgot how to make it. Dorsey states that “pottery has not been made by the Omaha for more than fifty years. The art of making it has been forgotten by the tribe.”[80]



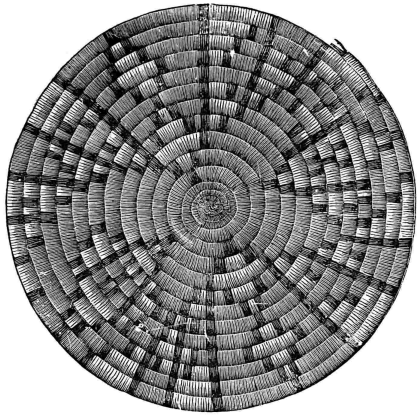
MOKI FOOD BASKET. ⅕



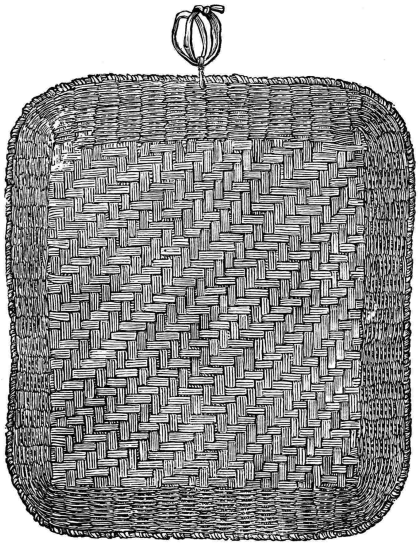
KLAMATH BASKET. ⅛

Various conditions might cause a tribe to cease

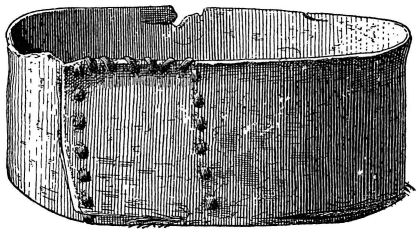
making pottery, if it were not a sedentary tribe. One constantly on the move would either never learn to make pottery, or if, during some sedentary period, it had acquired this art it would soon drop it, because in primitive travel basketry and gourds are lighter and more serviceable than the crude pottery they could produce. Thus if a tribe living a comparatively quiet life and developing the potter's art came into possession of the horse, the pottery might be abandoned because it could not readily be transported. This would apply only to tribes making rude pottery, for where a people had attained great proficiency in this direction they would not give it up, except, as in the case of Taos, they could purchase nearby a sufficient supply. Proficiency would only accompany a sedentary life, so that great skill in pottery would be a rather sure index of the character and progress of a people in other directions. While a people might achieve progress without doing much in pottery, if they did excel in pottery it would be an indication of excellence in other lines. Pottery is well-nigh imperishable, and therefore it is often the chief record that a departed people has left behind. Where almost every other distinguishing vestige has completely disappeared, we may frequently still discover scattered on the surface fragments of pottery, or buried in the soil complete specimens, which by their form, texture, or decorative treatment tell what manner of people these were who lived their lives and passed away; tell the limits of their distribution, and also to what other tribes or people they were related. Pottery therefore, next to actual records and inscriptions, is probably the most valuable as well as often the only kind of remains, that a race has left.



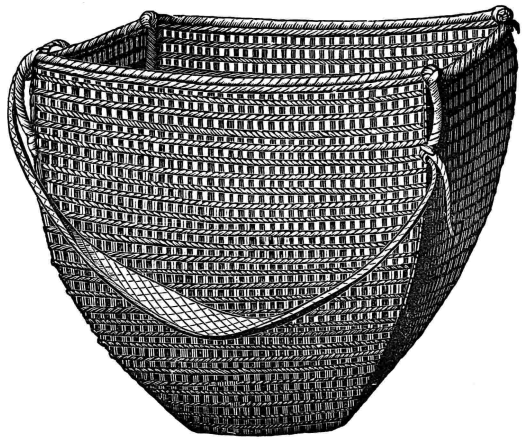
MOKI FOOD TRAY. ⅕



MOKI FLOOR MAT. ⅛



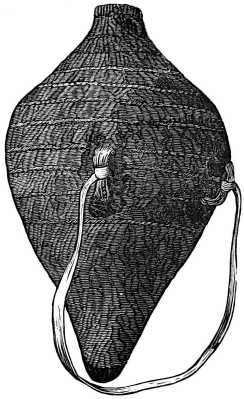
ESKIMO WHALEBONE DISH



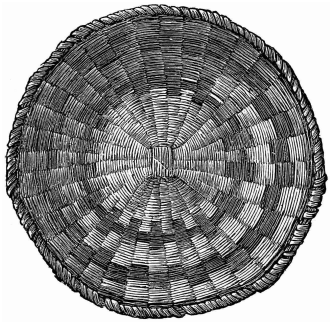
CLALLAM BASKET, WASHINGTON. ⅛



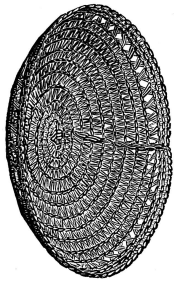
APACHE BASKET. ⅛



PAI UTE WATER-JUG. ⅛



MOKI FOOD TRAY. ¼



KLAMATH BASKET. ¼

AMERIND WICKER-WORK

For an excellent review of this subject, see "Basket-work of the North American Aborigines," by Otis T. Mason, *Report of the U. S. National Museum, Part II of the Report*

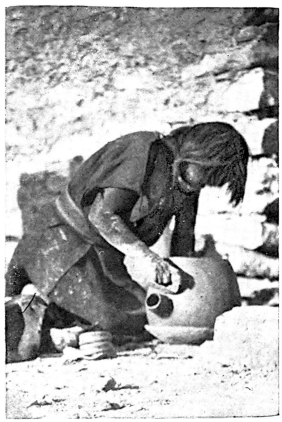
of the Smithsonian Institution for 1884.

European pottery has long received close attention from archæologists, but it is only within recent years that it has been thought worth while to study that of the Western continent. Like the other remains of the Amerinds, their pottery was not considered of much importance by archæologists, and while American money and talent were being bestowed upon the well-worked European field, our Amerind pottery was abandoned to the curiosity hunter. The artistic qualities of the Old World pottery fascinated the student, and this, together with a natural deep interest in peoples closely associated with our own past, served to obscure the real value of an investigation of the Amerind field for the information that might be disclosed concerning the character and distribution of Amerind tribes, for its bearing on the history of the ceramic art in general, as well as for its story of primitive effort and invention. Pottery is said to have been invented 2698 years B.C. by the Chinese emperor Hoang-ti, but of course it was made by some tribes long before this. Like every other art, it existed among some tribes, while other tribes had no knowledge of it. There was never a time, and there never will be a time, when all people possess an equal degree of information or skill, so that when something has been invented or discovered by one tribe or people it may have been in use for a long period by another. At the beginning of the Columbian era, most of the Amerinds knew how to make some kind of earthenware. Various methods were used in various places to produce the pottery. Some was modelled in baskets or on basket forms, right side up or up side down as happened to be necessary, some was modelled in a hole in the ground, or in the lap, and still other groups were

produced by coiling round and round slender ropes of clay, which were afterwards smoothed off or not as suited the knowledge or desire of the potter. The progression in a general way was probably about this: 1. Made on the inside of a wicker form—confined chiefly to bowls; 2. Made on a netting in a mould hole; 3. Coil-made; 4. Free-hand modelling; 5. Wheel-made, which Amerinds appear never to have attained. There was doubtless no sharp line of separation between these various processes, but they merged into each other. The coil process was about the highest development of the Amerind potter's skill, and it was in use all over the continent. As Holmes points out in his admirable paper,[81] the Pueblos are the only people who used the coil as a means of decoration as well as construction, so far as now known. All the other potters smoothed the coils off so that no trace eventually was left of them, and this is the practice of the modern Moki potters. They work by no special rule. According to my own observation, the making of pottery is a desultory occupation and is done by the women. Sometimes I saw a woman toiling alone with her ropes of clay, out-of-doors, and again several women would form a gay, laughing party in the sunlight. When the work is dry the painting and decorating are done by means of a little, long, string-like brush made of yucca fibre. This brush is like a piece of coarse twine, about three inches long, without a handle, very limber, and apparently entirely inadequate, yet they easily accomplished all they desired to do with it. In order to turn the work while in process of manufacture, and not injure it or destroy its shape, it is generally built upon a wicker tray. In this way it can be readily swung round and round, as the potter pays out the clay rope and adjusts it in place. This is the nearest

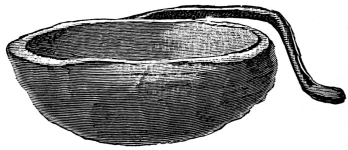
approach to the potter's wheel that seems ever to have been known on the American continent. While many shapes are based on some form in basketry, or wood, or horn, or shell, or bark, a great many are pure inventions, the result of fancy or inclination.

In preparing the clay, sand or pulverised potsherds were mixed with it to temper it and prevent cracking. This was sometimes so coarse and abundant in the old pottery that in the fragments picked up one can frequently see large grains of sand.



From photo by the author, 1884

MODELLING AN OLLA AT HANO
The potter was not aware of being photographed



CLAY NUCLEUS



METHOD OF BUILDING UP COIL

All pottery of primitive races belongs to the class known as *soft* pottery, as distinguished from what we call stoneware or *hard* pottery in its different forms. The Amerinds were no exception, and all their pottery is soft unglazed ware.[82] The reason for this lies in the fact that the making of hard pottery requires not only an extensive knowledge of the properties of clay, but, what is more, a temperature for firing of about 4000° Fahrenheit,—a temperature which can be obtained only in a furnace or retort, of which Amerinds were apparently ignorant, their pottery being burned, in historic and prehistoric times, in the open air. The common modern method among the Pueblos is to burn with sheep dung, but they are said to have used in ancient times deadwood, common wood, and coal. The method was usually the same in all cases; the ware was piled up and then covered with the fuel in such a manner that there would be as little as possible direct contact. They also sometimes baked the ware in hot ashes with a fire above, and sometimes they dug a pit which they lined with the fuel. A rich shiny black ware was obtained in some localities by allowing the ware to come in contact with the fuel and, at a certain period in the burning, smothering the fire. This produced an apparent glaze as well, an effect obtained also by rubbing and polishing before the firing. But there is no true glazing in any Amerind

ware, at least not north of Mexico. Even had they known the process they would have been baffled in attempting to put it in practice, for glazing requires a temperature of at least 1300° Fahrenheit, and they apparently had no means of securing it.[83] All of their ware can be scratched with a knife, which is a test of soft ware, and while some of it seems to have lustre, it is the lustre of polish, not of glaze. Some ware, however, recently found in the Central-American region appears to have a true glaze. Some tribes make a variety of kinds of ware, while others confine themselves to some special kind, and still others, as mentioned in the case of Taos, buy all they use and make none. The Pueblos to-day are extensive potters, especially the Zuñis and the Mokis, and produce large quantities of varied ware, which, while similar in many respects to that of the ancients of the region, is not so fine nor so well formed. At the Chaco ruins Pepper found a number of tube-shaped vases, about four inches diameter and a foot high, with four small perforated handles. In the course of time enormous quantities must have been made in the South-west, for the ground is everywhere strewn with fragments of it. This would indicate either a dense population or a very long occupation by a comparatively sparse one, and thus far the evidence is in favour of the latter hypothesis. In such a dry climate as exists in the South-west, even soft pottery is almost indestructible when not exposed to river or ice action. In such cases it would soon be destroyed. Though the Colorado River runs through the length of the ancient Pueblo country, and receives many branches whose valleys, like its own, reveal myriads of fragments, I never found a specimen in the river gravels. If this is the case, how could we expect to find remains of pottery in glacial drift?



WARE FROM MOKI REGION, ARIZONA. ½

Another kind of pottery has lately been found by Lumholtz at Teuchitlan, State of Jalisco, Mexico. It is a sort of cloisonné, apparently made by firing the plain ware and then applying a thick slip which, when dry, was engraved with a pattern down to the baked surface. The parts cut away were then smoothly filled in with a white paste and with paste of other colours, producing some excellent effects. Another firing then fixed the superimposed paste.

There are numerous specimens in the American Museum.



WARE FROM MOKI REGION, ARIZONA. ½



CUP FROM ARIZONA. ½



VASE FROM ARKANSAS, SHOWING LINES MADE WITH A SHARP POINT BEFORE FIRING. ⅓

The valley of the Mississippi is as prolific in its yield of pottery as the South-west, though most of it is found in mounds. It has therefore been attributed to a departed and mysterious race which has been called “Moundbuilder.” These mounds, however, were clearly the work of different tribes and were erected for different purposes, and there is no evidence to show that the builders were not Amerinds, similar to tribes that were encountered by our people. True, some of these tribes or stocks may

have become extinct before whites entered the region, for tribes rose to power, dwindled, and disappeared, but that does not prove that they were anything but Amerinds, even though they may have developed qualities and arts not practised by Amerinds we have known. That there are some marked differences between some of the so-called Moundbuilder ware and some other Amerind pottery is freely admitted, but why this should indicate that there was any mystery about the former is not intelligible, for there are many differences in the products of existing tribes and stocks.[84] As has been mentioned, the Pueblos are extremely good potters, while their neighbours the Navajos practically are no potters at all. Had the Pueblos become extinct before the appearance of the European, what a fine chance this would have been to speculate on who these mysterious and departed people were who built superior houses of stone and made splendid pottery! Oh no, they could never have been common "Indians," they must have been a migration from China, or Japan! Unfortunately for writers of the romantic school, the Pueblo is still there, and he is an ordinary Amerind, in some ways hardly as intelligent as his neighbour who makes no pottery and builds no houses. There is no reason, then, for assuming that there was anything extraordinary about any of the former occupants of the Mississippi valley. They were, at least some of them were, skilful potters, and some had sense enough to dig out copper and hammer it into shapes; but what is there in this that should lead us to exalt them above other Amerinds? Progress in the arts may vary among associated stocks, and also among different branches of the same stock. In the Mississippi-valley pottery there was a tendency toward upright bottle-shaped

vessels with long necks, while the tendency of the Pueblo ware is in the direction of the bowl. There are also long tray-like vessels in the Mississippi valley, which do not occur at all amongst the Pueblo ware, and there are more animal shapes, birds, etc. A series of the Mississippi-valley forms suggests a knowledge of the wheel, but it is not likely that they had it, though it is possible. Anyone who has watched the progress of a common jug turning on one of our potter's wheels, must be struck by the series of fine shapes the lump of clay passes through before assuming its last form. Such a progression appears in the Mississippi valley ware, but these jars were all probably made by the "coil" process, which was still in use in the Mississippi valley after the advent of our people. Holmes states positively: "The wheel or lathe has not been used."[85] The pottery of Chiriqui, a province near Panama, is remarkable for perfection of finish and execution and a similar suggestion of mechanical aids. In this case Holmes says: "Notwithstanding the fact that only primitive methods were known, The high-necked Moundbuilder bottle is rarely found in other parts of the United States, but it occurs in Mexico and in South America. Ladles, common in Pueblo ware, are of rare occurrence in that of the Moundbuilders, while rectangular box-like vessels are found, which, though rare, are of wide distribution. One remarkable object found in Tennessee is an earthenware burial casket formed of two parts, a body and a lid, and it still bears marks of the baking. It contains the remains of a small child, reduced to dust, except portions of the skull and limbs; and two or three dozen small shell beads. It weighs altogether 12¼ pounds. Another peculiar vessel was shaped like a shallow trough, with a flat lip or projection at each

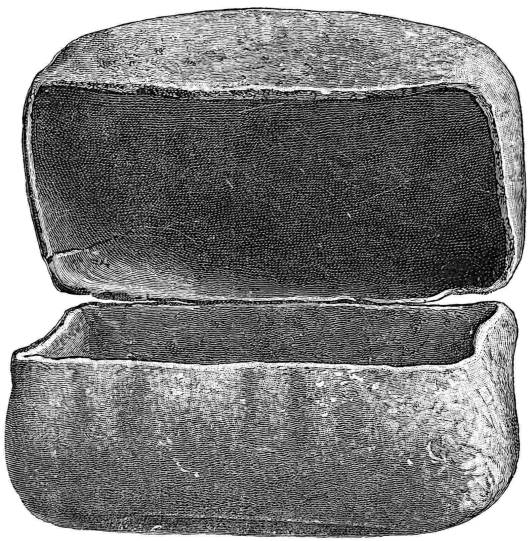
end. While there was undoubtedly in all tribes a certain progression of forms based on those of basketry, etc., as before noted, it must not be forgotten that there is a parallelism with wheel-made ware that cannot but strike the student with amazement. So great is the symmetry and so graceful are the shapes that one is led to suspect the employment of mechanical devices of a high order."[86]



BOTTLE-SHAPED VASE, ARKANSAS. ½

The high-necked Moundbuilder bottle is rarely found in other parts of the United States, but it occurs in Mexico and in South America. Ladles, common in Pueblo ware, are of rare occurrence in that of the Moundbuilders, while rectangular box-

like vessels are found, which, though rare, are of wide distribution. One remarkable object found in Tennessee is an earthenware burial casket formed of two parts, a body and a lid, and it still bears marks of the baking. It contains the remains of a small child, reduced to dust, except portions of the skull and limbs; and two or three dozen small shell beads. It weighs altogether 12¼ pounds. Another peculiar vessel was shaped like a shallow trough, with a flat lip or projection at each end. While there was undoubtedly in all tribes a certain progression of forms based on those of basketry, etc., as before noted, it must not be forgotten that the Amerind, like all other human beings, did some things from pure inspiration or invention and with no previous model of any kind.



EARTHEN WARE BURIAL CASKET, TENNESSEE. ¼

The Mississippi valley, according to Holmes, may be divided into three districts as far as the pottery is concerned: the upper, the middle, and the lower

districts. This would seem to indicate as many different tribes or stocks, or even different periods of occupancy by either the same stock or by different stocks. The most northerly examples are the rudest and most different from the others. Some of the pottery that is advanced as showing a skill in sculpture not possessed by Amerinds of the North can be explained in another way than by assuming that the makers were different from other Amerinds of the Mississippi valley as we have known them. As I pointed out elsewhere,[87] these head-shaped vases are death-masks.[88] It does not require a second look at the illustration below to see that the features are those of death reproduced in a manner that no aboriginal potter could possibly accomplish by free-hand method. “Here we look on a face perfect in its proportions, accurately modelled, and, above all, depicting death with a master-hand; yes, more, presenting to the spectator death itself as it seized this personage in the long-forgotten past. Here is death present with us as plainly as it is in the well-preserved features of an Egyptian mummy.... Soft clay was pressed upon the dead features, and when sufficiently dry it was removed and other soft clay thinly pressed into the mould obtained. The mask thus made was built upon till the jar before us was completed.... The interior of the wall follows the exterior closely except in projecting features. The potter, finding it difficult as well as unnecessary, to work the clay evenly into the projections of the mould, filled them up more or less solidly.” This vase is five inches in height and five inches wide from ear to ear. It is open at the top, and has a perforated knob over the middle of the forehead, perhaps for attaching a head-dress, and the ears are perforated. These holes also would permit cords to be attached,

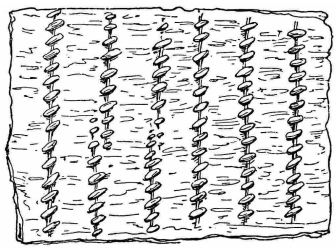
by which the jar could be hung, probably in a dead-house where the body of the deceased original was laid. It has been stated that the features exhibited in this vase are not “Indian,” but there seems to be no ground for such a statement. The features are apparently those of an Amerind boy fourteen or sixteen years of age.



DEATH-MASK VASE, TENNESSEE. ½



FLUTED VASE, ARKANSAS. ⅓



IMPRESSION OF PARTS OF BASKET MOULD ON POTTERY

Of the basketry of the Mississippi valley there are, of course, no ancient specimens. Wicker-work would not last long in that climate; but there must have been baskets and plaited implements of various kinds, because people do not make pottery without passing through the basketry stage. The Amerinds of that region also made good baskets when first met with, and we know that they did some fairly good weaving both in ancient and modern times. Some of the ancient fabrics have been preserved in the mounds by contact with copper, by being charred, and in other ways, and the ingenuity of Holmes has given us fac-similes of some of the old netting.[89] He noticed curious markings on certain fragments of

pottery, and took clay casts of them, thus producing positive from negative, and revealing the fact that the peculiar markings were the impressions of fabrics. He believes these fabrics were impressed on the ware for purposes of ornament, and while this may in some instances have been the reason, in my opinion, the chief object of the netting that made the impression was to lift the freshly made jar out of a hole or a wicker form where it had been modelled. Very early pottery was doubtless built on or in wicker-work—that is, early in the practice of any particular tribe. This was specially the case with the Amerinds of the Atlantic coast, as is plainly indicated in the casts made by Holmes from fragments of pottery from that region. “The earlier potters probably used baskets that came up to the curved-in part of the jar, which was continued above the basket by deft handling, or, if a basket of the same form was followed, the basket was destroyed in the firing process. This would seem to the modern mind a great waste of time and material, but it must be remembered that the Indian potter had not learned modern haste, and besides could turn up a coarse basket in a very short time. Therefore it does not seem improbable that he may, in the early stages, have modelled his jar on the *inside* of a basket frame of similar form and then allowed the basket to be consumed in the baking process when it could not be separated from the vessel. Even when he developed to a point beyond and modelled the upper portions with a free hand, he would find great trouble in separating his jar from its framework. What, therefore, would be the following step? It seems to me it would have been the placing between the clay and the mould of a piece of netting, which would permit him to lift out his jar easily and intact, and

transport it to the drying place. He would then speedily discover that his basket was not necessary—was not so serviceable, in fact, as a hole in the ground, for the sides of the hole could be plastered with a layer of very sandy clay, and thus would all sticking of the vessel to its mould be avoided. The netting, or fabric, having been spread as evenly as possible over the inside surface of the mould hole, the upper edges were allowed to lie out upon the ground. The soft clay being now pressed evenly upon the fabric to the required thickness, the sandy surface of the mould hole easily gave it shape, and gave the potter no anxiety about the outside surface. Indeed, he had but one surface to watch till he came to the in-curve, if his vessel was to have a narrow mouth. Then, I surmise, he built up roughly a clay mould, well sanded, pressing what was left of his fabric into the inside of this mould as he built his vessel upward. Frequently, doubtless, the fabric was not sufficient to go to the top, which explains why sometimes only a part of a jar shows the cord markings.... The distorting and overlapping of the meshes observed by Holmes were probably due to the gathering in to fit the interior of the mould, for it must be borne in mind that the fabric was not shaped in any way to fit the mould, but was doubtless a fragment of some squarely woven article. Thus gathering and overlapping were necessary to make it conform to the inside surface of the mould...."

"When coarse basketry was used for a mould that was intended to be removed before firing, the interstices of the basket work were probably rubbed full of a mixture of sand and clay to prevent the finished vessel from sticking or catching, which explains, I think, the peculiarity of design in some

cases, for only the more prominent features of the basket work would impress the vessel.... In some kinds of basketry more filling was necessary than in others, which explains the frequent greater separation and irregularity of the markings."[90]

It seems, then, that the pottery of the Atlantic region was very rude and was modelled chiefly on wicker moulds, and was not abundant[91]; that the lower Mississippi valley and the South-west were the regions within the United States where pottery attained its highest development; that as one proceeds northward pottery diminishes in quantity and in quality till it disappears; and that in a southerly direction it increases in abundance and in excellence of manufacture and artistic design. The pottery area is fan-shaped, with Central America for a handle. This would all appear to indicate that the pottery wave rolled up from the Far South, and that the Moundbuilders and the Pueblos acquired their art from that direction, or brought it north as they came on the retreat of the cold. Attempts have been made to connect the Pueblos with the Moundbuilders, and both with the Aztecs, but there is no good evidence now known which substantiates any such claim. Even if they did come from the South, it does not make a mystery nor does it necessarily prove any direct relationship between these branches of the Amerind race. Those nearest the great culture centre acquired most culture, hence the farther north the less pottery. The homogeneity of the Amerinds was due to causes operating on this continent at a very early period, and the same causes may explain why the Moundbuilder, the Pueblo, and the Southern stocks were good potters, while the Algonquins, the Dakotas, the Athapascans, and other Northern stocks were so inferior in this respect,

while not being inferior in others.[92]



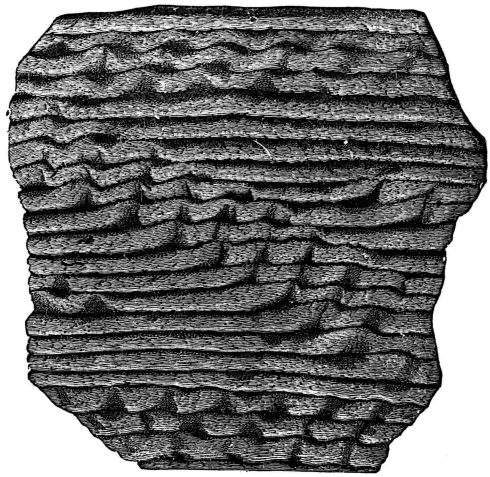
VASE FROM CHIRIQUI. ⅓. DECORATED IN BLACK, RED, AND PURPLE

The Aztecs, Zapotecs, Mayas, and other people of the Mexican region were expert potters; and it was in this region that working in clay, like everything else, was carried to the highest degree of perfection on this continent, and where evidence is found of seemingly true glaze. Not only ordinary pottery of beautiful shapes and excellent texture was made, but large funeral vases of elaborate form, terra-cotta water-pipes, and terra-cotta figures, some of them of almost or quite life size. Saville recently found some of these funeral jars and terra-cotta figures in the Zapotec country, south of the city of Mexico, in the province of Oaxaca, and there are specimens in the Museum of Natural History in New York. The principal terra-cotta figure he found is thus described by Saville[93]: “Another trench was started at the

eastern side of this mound, and after working down to the level of the surrounding fields near the centre of the mound just back of the tomb, there were found the scattered fragments of what will be, when restored, the largest specimen of terra cotta ever found in America, and I do not know of so large a specimen ever having been found elsewhere. It represented a warrior, and the different pieces of the figure were scattered over a space of about fifteen feet. The central fragment was the head, upper torso, and right arm, lying face upward; the open mouth revealed the teeth painted white and filed, as in the case of the funeral urns. The eyes were well modelled and painted white and red; the head was covered with a turban of feathers, somewhat resembling the head-dress of Chac Mol, found by Dr. Le Plongeon in Yucatan. A closely cropped beard covered the lower portion of the face, the upper part being pitted as though marked by smallpox. The ears had curious circular ornaments pendent by a string passed through holes pierced in the lobes. The nose was ornamented with a long cylindrical bead attached by a string fastened at the top and bottom through the septum. The breast was painted red and white and additionally ornamented with curious designs made by circular indentations. The legs, which lay quite separated from the body, were bare, and the feet were covered with sandals having beautiful heel-pieces. Around each ankle was a line of bells. Both the toe- and the finger-nails were painted white; the right arm, bent at an angle, grasped a pole or staff of which about a foot remained. These fragments are now in the Museo Nacional, City of Mexico. The entire length of the figure, according to measurements made of the detached pieces, was nearly, if not quite, six feet."



AN ANCIENT FIGURE OF TERRA COTTA FROM THE VALLEY OF MEXICO
The height of this figure is 150.9 cm. Breadth of shoulders, 46.0 cm.



COIL INDENTED FOR DECORATION

The specimen now in the New York Museum, page 113, is about five feet in height, and while, artistically, it is crude, it exhibits great skill in the potter's art. The walls are thin and it must have taken much labour to build the figure and successfully file it. It is in three parts. There are also in the Museum several of the funeral urns found in this locality. They are about fifteen or twenty inches high and skilfully made. These urns were found "in series of five in front of tombs, on the roof, or fastened into the façade." They are usually of grotesque design like most of the Amerind figures, and evidently represent personages arrayed in the regalia of certain orders or societies, or possibly the same personage in his various offices, or attended by representations of other officers of some society to which he belonged. Saville says of one group: "Resting directly on the cement floor at the centre of the mound were five large funeral urns, page 115, representing seated figures, placed in a row facing west. The urn in the centre has a remarkably well-modelled face, undoubtedly a portrait of some

ancient Zapotecan personage. The two on either side are of the same general size and character, with the exception of the face, which is covered with a mask in the form of a grotesque face, possibly the conventionalised serpent, as the bifurcated tongue is one of the most prominent characteristics."[94] These are some of the most important terra-cotta productions ever found on this continent. Some terra-cotta tubing also found at this place is unique. Saville says: "No such terra-cotta tubing has ever been discovered elsewhere in Mexico, and a new problem is therefore presented." One end of this tubing was three feet below the surface in a field, while the other was in the mound excavated. "It was laid in short sections, of varying length, one end being smaller than the other, the small end of one tube being fitted into the large end of the next, page 117. Several of the joints still preserved the cement with which they were made tight. The exploration did not reveal the use of the pipe." The fact, however, that the tubes were so carefully fitted into each other with, apparently, the joinings all on the down slope, that is, connected in such a way that water would flow continuously without waste, and that the joints were made tight with cement, is good evidence that these pipes were laid for conducting water. It seems probable that this tubing was a part of some water-supply or irrigating scheme, which had been abandoned before the mound covering a part of it was constructed. As the valley where these interesting finds were made, as well as neighbouring valleys, contain many more mounds, it is probable that the future exploration of them will produce much more material of value. If the terra-cotta tubing had a mythological significance it will be found in other mounds, and if it belonged to an

irrigating scheme, or water-works, it will be explained by other finds. Effigy jars were not confined to Mexico, for they are found in various parts of the United States, especially in Tennessee, but they are nowhere anything like those described from the Zapotec country. The Tennessee specimens artistically and mechanically are exceedingly crude, as are all attempts to delineate the human figure by the northerly Amerinds. Some of the most elaborate and at the same time artistic forms in Amerind pottery are found in Chiriqui,[95] a province just below Costa Rica. The old occupants of this region seem to have excelled in metal-working, stone-carving, and pottery, and probably in other arts the products of which are of a more destructible nature. As the line of demarkation between the North- and South-American cultures runs along the southern side of Nicaragua, practically on the line of the proposed Nicaragua Canal, the consideration of the Chiriqui products should belong perhaps with the South-American division, but being above the isthmus, they may be mentioned here for the sake of comparison. “The casual observer,” says Holmes, “would at once arrive at the conclusion that the wheel or moulds had been used, but it is impossible to detect the use of any such appliances.” And further: “On the exposed surfaces of certain groups of ware the polish is in many cases so perfect that casual observers and inexperienced persons take it for a glaze.”[96] There was extraordinary variety in this ware. There are whistles, drums, rattles, round vases with necks and without necks; vases of simple and vases of complex form; vases and jars with elaborate handles; vases with annular bases or feet; and vases with short or long legs, three in number generally. This field is so rich that it is practicable to

give here only a suggestion of what it affords, and the reader is referred to the admirable paper by Holmes.[96]



ZAPOTECAN TERRA-COTTA FUNERAL URNS FOUND ON CEMENT FLOOR IN FRONT OF TOMB 1, MOUND 7, XOXO, OAXACA, MEXICO
From the *American Anthropologist*



POT SHOWING DIAGONAL GROOVES ACROSS

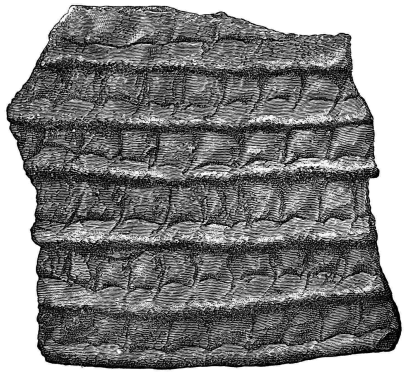
THE LINES OF THE COIL MADE BY THE HAND IN SMOOTHING UP. ⅓. MANCOS CANYON, COLORADO



ZAPOTECAN TERRA-COTTA TUBING FOUND LEADING DOWN INTO A FIELD FROM THE CENTRE OF MOUND 7, XOXO, OAXACA, MEXICO
From the *American Anthropologist*



PUEBLO POT. PATTERN PRODUCED BY OBLITERATING PINCH MARKS. ¼



PINCH-MARKED COIL



ENGRAVED WARE, ARKANSAS. ⅓

In the matter of decoration there is found a general similarity of methods in the different regions. Apparently the first decorations were the unavoidable result of methods of manufacture, whether moulded or coil-made. In the first instance the meshes of the wicker mould, or such part of them as could not easily be covered up with a sandy paste to prevent adhesion, impressed themselves upon the soft clay; or the fabric that was employed to remove

the work from a mould made impressions upon the ware. If coil-made, the pinching of the clay rope into position left marks of the finger-tips and the finger-nails with a regularity that doubtless came to be admired and then modified to conform to fancy, and finally finger markings and other markings and indentations grew, especially in our South-west, into a regular system of decoration. The irregularity due to pinching the rope in place is less with the expert than it was with the primitive potters, and it is now smoothed off entirely with a "rib," the left hand being placed opposite the pressure applied with the right.[97] In the earlier forms the fingers of the right hand held stiffly downward seem to have been used to even up the irregularity of the coils to some extent, as may be discerned in figure page 116, where there are diagonal grooves across the lines of the coil, evidently made, the left hand being inside the jar, by drawing the fingers of the right, or rather the forefinger braced against the others, diagonally upward upon the outer surface. The operation would be almost identical with the modern practice except that the fingers were used instead of a "rib." Indentations were also made with a sharp instrument in a pattern, and another method seems to have been to smooth off all the pinch marks, except in certain areas that when left would form a pattern. Thus in the latter case the pattern was produced by a system of obliteration. In figure on page 118, a vase from the Moki country, of the ancient Pueblo manufacture, shows this method of making a pattern by smoothing down pinch marks. To do this the pinch marks would intentionally be made with some regularity.



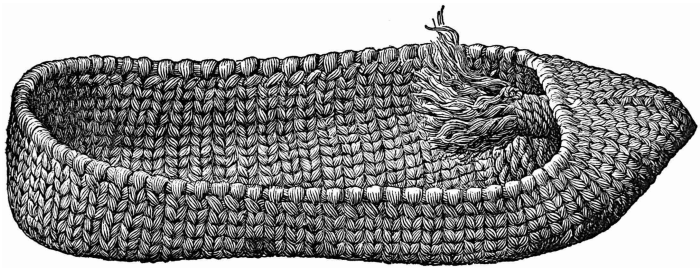
ENGRAVED WARE, ARKANSAS. ¾



BLACK CUP, CHIRIQUI. ½

Another method of ornamentation was that of scratching or engraving the ware after it had been fired. This is seen in figures on pages 120 and 121, from Arkansas. Still another method of ornamentation was produced after the ware was smoothed to its finish, whether coil-made or not, by drawing on it with a point. An example of this is seen on page 103, also from Arkansas. The method that was most employed by the ancient Amerinds, and is used by those of to-day, as well as by most potters the world round, is colour. A slip or wash of fine clay was given to the ware, and polished and decorated in colours before firing. In this way many beautiful results were obtained in all the regions of

North America. Almost every colour was used, but white, black, red, and yellow are most common. These pigments were laid on in a single wash, or were applied in more or less elaborate patterns. The Pueblos, ancient and modern, have produced an astonishing variety of designs, and the same may be said of the Mexicans, Mayas, Zapotecs, Chiriquis, and other stocks of the South. A large volume could barely do justice to this subject, but enough has been given here to show the nature, distribution, and trend of pottery making by the Amerindian Tribes. [98]



WOVEN MOCCASIN FROM KENTUCKY CAVE

CHAPTER VI

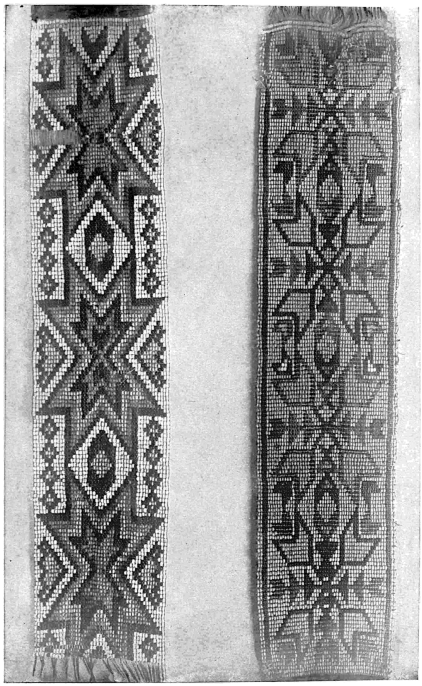
WEAVING AND COSTUME

THE first article of dress of primitive people was not a woven stuff, but nevertheless weaving, like pottery, begins in plaiting and basketry, and is an ancient art. The first clothing, a necessity of climate, was made of skins of animals where they could be obtained, and where they could not primitive man walked in a state of nature. His desire for clothing was one purely of comfort; modesty, as we define it, was unknown. Modesty, so far as it relates to concealment of the body, is the child of climate and fashion. A Breton peasant girl does not mind if her legs are seen, but she is shocked if caught with her hair down or without her cap; one of our own ladies thinks nothing of exhibiting her bare shoulders and bosom at the opera under gaslight, but she would not do it in daylight. On the beach it would also be improper, but there she is not troubled if her lower extremities are seen. In some of the milder climates to-day clothing is scanty, while with the Eskimo in the Far North it is composed of warm furs. Cold was

responsible for the first clothing, and is to-day responsible for a good deal of it. The idea of utilising feathers and broad leaves as well as skins would soon occur to a people, especially if they found it difficult to secure the skins, and with these some kind of a string was necessary to hold them together, and if no sinew or thong was at hand the want would be supplied by twisted grass or bark, and this twisted grass or bark then came itself to be combined in the form of mats for sleeping on or covering sticks to produce a shelter. This was plaiting, and it is the first step to basketry and weaving. Many of the simpler arts are native in the brain of man, and the expression of them at the proper time is as easy and natural as it is for a birdling to fly, a kitten to catch a mouse, or a baby to walk for the first time. It is, like sight, or thought, or articulate speech, a direct and unconscious result of the innate composition of mankind. It is impossible to tell why a spider builds a web of even proportions instead of one that is irregular, or when it acquired the skill to perform its feat of engineering, or why it builds a web at all, and does not, like a cat and some species of spiders, rely on springing upon its prey. The spider does this the world round because it is a spider, and because its prey also has, the world round, its own habits. So with man. Everywhere he learned to plait mats, make wicker-work and pottery, and a thousand other things simply because he was everywhere *the same man*. If you examine articles of primitive manufacture from various parts of the globe, you will find them all practically alike, because the men who made them were practically alike and their wants and surroundings were practically alike. They plaited together strips of bark or twisted grasses, or rushes, because they had to have them, and they went on

finding out the properties of the materials that compose the world just as they are doing to-day, till they made cloth and made it on a machine. Primitive fabrics were everywhere about the same, and when the loom was invented it was and is, where still used in its primitive form, very much the same. That in use to-day by the Navajos is much like that used by the Orientals. The Navajos are probably not the inventors of it, but borrowed the idea from the Pueblos, or at least derived it through a mixture of Pueblo blood. Their cousins, the Apaches, do not weave, and they are probably better representatives of the original Athapascan stock than the Navajos.

The Mexican loom was similar to that of the Navajos, and it is probable that some of the tribes of the Mississippi valley were acquainted with one built on a like pattern. The product of these primitive looms was also much alike in its character; some of the Oriental rugs that we see now strongly resemble the blankets of the Mexicans or Navajos.



MENOMINEE BEADED GARTERS

This is because weaving is a simple art; and until the invention of the Jacquard principle complex patterns were produced only by great labour, as all the different colours had to be adjusted by hand, which is still the case in many fine products like the Turkish rugs or the shawls of Cashmere.

The primitive products of the loom were square in shape, and when used as garments they were not cut to a pattern or altered, but were worn as they came from the loom. To make a dress, it was only necessary to fasten two of these mats or blankets together, just as the Moki women do now. This combination was then slipped over the head, with one corner on the right shoulder and one under the left, and a belt around the waist. This was the

costume complete. There was no fitting the fabric to the body.

Thread, cord, twine, and rope were made by the Menominees chiefly out of the "inner bark of the young sprouts of basswood. The bark is removed in sheets and boiled in water to which a large quantity of lye from wood ashes has been added. This softens the fibre and permits the worker to manipulate it without breaking. The shoulder-blade of a deer or other large animal is then nailed or otherwise fastened to an upright post, and through it a hole about an inch in diameter is drilled; through this hole bunches of the boiled bark are pulled backward and forward, from right to left, to remove from it all splinters or other hard fragments. After the fibre has become soft and pliable, bunches of it are hung up in hanks, to be twisted as desired. The manner of making cord or twine, such as is used in weaving mats and for almost all household purposes, is by holding in the left hand the fibre as it is pulled from the hank, and separating it into two parts, which are laid across the thigh. The palm of the right hand is then rolled forward over both so as to tightly twist the pair of strands, when they are permitted to unite and twist into a cord. The twisted end being pushed a little to the right, the next continuous portions of the united strands also are twisted to form a single cord. The same process is followed in all fibre-twisting, even to the finest nettle thread."[99] In the matter of thread some fine results were obtained by various Amerinds. Holmes says: "The finest threads with which I am acquainted are perhaps not as fine as our number ten ordinary spool-cotton thread, but we are not justified in assuming that more refined work was not done."[100] Sage-brush, yucca, and other plants were used for making thread and cord.



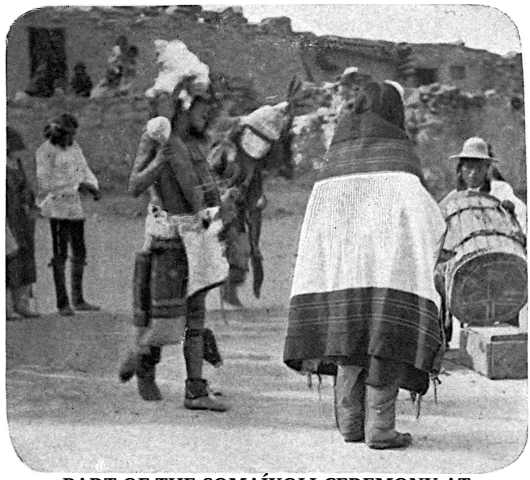
NAVAJO WOMAN AT THE LOOM

In order to weave, it is first necessary to reduce your fibre, or wool, or cotton, to more or less even threads or yarn. The Amerind way of doing this was the same, practically, wherever spinning and weaving were attempted, from Central America northward. The spindle is a round, slender, pointed stick, a foot to about fifteen inches long, put through a disc, generally of flat, hard wood, four to six inches in diameter, which acts as a flywheel to keep up the momentum. It is the simplest form of top. The operator holds the wool or cotton, previously prepared, in his or her lap, and attaching one end of it to the top arm of the spindle, above the disc, gives the spindle a twirl, either by the thumb and forefinger or by a dexterous sweep of the palm of the hand along the thigh. The fibre, or wool, that was attached to the arm of it winds round till it reaches the tip, where it clings and takes on the rotary motion of the stick to which it is fast, being twisted thereby into yarn. It continues to spin with the spindle for some seconds, about fifteen or twenty, and when the momentum slackens below the necessary speed, the yarn thus far made is wound on

the spindle and it is started afresh, with more wool paid out to the twisting. The operation is repeated over and over till the spindle is full, and it is surprising to see how rapidly it can be done. I have only seen this performed amongst the Moki, but the descriptions from other places show it to be done in about the same way everywhere. In the Mexican region the spindle-discs were made of pottery. In Nicaragua both wood and terra cotta were employed, and it is likely that wood was also used by some part of the people in Mexico and other places where the terra-cotta discs are now found.

Weaving was not confined to the Pueblo and Mexican country when the whites first came to the continent, but was in vogue amongst many different tribes, who used various substances in the manufacture of rugs and blankets. Cotton amongst Southern and South-western tribes was a favourite material, and in other places hemp, and the hair of animals, and birds' feathers were used. The Kwakiutls of the North-west coast "made blankets of mountain-goat wool, dog's hair, feathers, or a mixture of both."[101] And the tribes of Puget Sound and the Straits of Fuca "attained considerable skill in manufacturing a species of blanket from a mixture of the wool of the mountain sheep and the hair of a particular kind of dog, though in this art they never equalled the more northern tribes."[102] It is extremely probable that some of the Pueblos, before the introduction of the sheep of Europe, used the hair or wool of a mountain sheep or goat for weaving, and it is possible that they had to some extent domesticated that animal or some similar one; at least they may have kept it imprisoned for its wool in much the same way that they now keep eagles for their feathers. Fray Marcos relates that one of the

natives he met with in 1540 told him that the people of Totonteac made cloth, much like the garment he had on, from the hair of certain small animals. These animals have usually been supposed to have been dogs, but as the Northern Amerinds used mountain-goat's wool, it is possible that the Pueblos, who were in advance of them in all that pertains to weaving, had not only succeeded in weaving such hair or wool garments, but had conceived the idea of holding the animals in captivity. It has been supposed by some that they had an animal of the vicuna kind. Terra-cotta images have been found in the Salado ruins of Arizona that are difficult to identify, and are believed by some zoölogists who have seen them to represent "a creature allied to the South-American Camellidæ."[103]



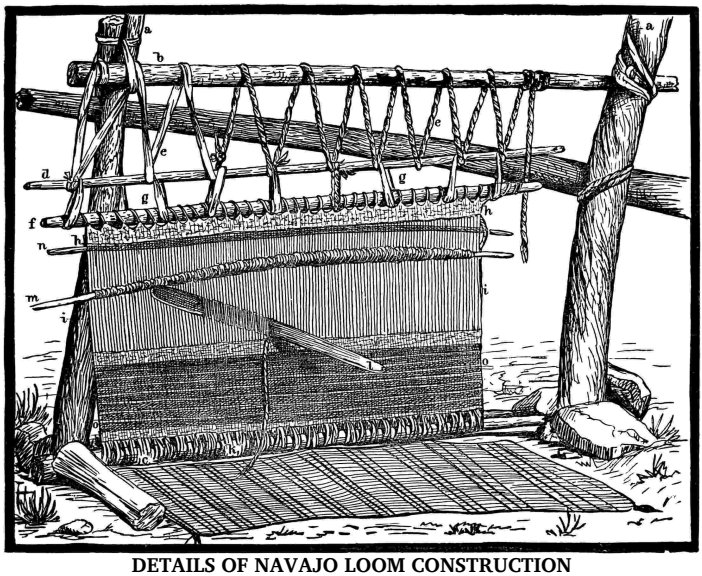
PART OF THE SOMAÍKOLI CEREMONY AT CICHUMOVI, NOVEMBER, 1884, SHOWING A SACRED BLANKET ON FIGURE IN FOREGROUND

"It has been surmised that such animals continued to be domesticated by the sedentary Indians of Arizona and New Mexico down to historic days and became extinct only when the more serviceable

European sheep was introduced by the Spaniards.... Fossil bones of an animal of this family have been found in the South-west; but its bones were not identified in the Salado ruins."[103]

The Pai Utes made a garment of rabbit-skins which was very warm. The skins were twisted and attached one to another end and end, making a sort of fur rope, and this rope was tied in parallel lines, forming a kind of large cloak which was most serviceable in winter. Flax, or a plant closely allied to it, also grew wild all over Arizona and New Mexico, and was used for garments. The bark of the sagebrush was used to make cord and mats. Yucca also furnished a supply of valuable fibre. Cotton was grown by many of the Pueblos and is still cultivated by the Mokis, who manufacture a sacred blanket from it that is sought after at good prices by the Pueblos of other districts. It is a finely woven white blanket, with a broad red stripe transversely at each end. It is worn by women in the ceremonials. The Mokis are good weavers, using a loom similar to that employed by the Navajos. The Moki loom is generally set up in the kiva[104] where often there are permanent attachments for it, and there the men, who do all the weaving among this tribe, patiently execute their plans. Most of the Moki blankets are of low colours and simple design, dark blue being, with black, the favourite tint. The usual material is the wool of the European sheep, which has flourished among the Pueblos ever since it was introduced by the Spaniards. The sheep are herded on the plains during the day and at night are driven up the talus of the cliffs to corrals that lie just below the plateau on which the villages are built. The Navajos living in the surrounding country have far larger flocks than those of the Moki, and weave only wool. In fact,

there are amongst the Navajos more than a million and a half head of sheep and goats. Most of the wool from these they usually sell to dealers at four or five cents a pound and then purchase for their blanket-work at high prices Germantown wools of brilliant colours, which colours they cannot obtain with their own dyes, though the colours they do secure are far more artistic. Formerly, to get the brilliant red of which they are so fond, they would buy a Mexican cloth, called *bayeta*, a sort of flannel, and ravel it, to reweave it in their blankets. The women do most of the weaving amongst the Navajos. The colours are usually bright, though the every-day serviceable blanket is of dark blue and white or black and white, or of the natural grey of the wool. The greater gaudiness of much of the Navajo work has given it a reputation of superiority to that of the Pueblo, which, in my opinion, is not wholly correct. Washington Matthews,[105] who has so carefully studied the subject, states that there is a constant deterioration in Pueblo weaving, which may be true in general, but hardly applies to the Moki. I have a sample of Moki work which, so far as weaving skill is concerned, is as fine as any Navajo work I have ever seen. The Moki do not turn out as much as the Navajo, because they are a far smaller tribe; and their product is dark, as a rule, in colour, as they use their own dyes, but its texture, and especially the texture of the sacred cotton blankets, is extremely fine, even finer and better as an example of weaving skill than many Navajo blankets. “In some Pueblos,” says Matthews, “the skill of the loom has been almost forgotten.”



DETAILS OF NAVAJO LOOM CONSTRUCTION

The Navajo loom is set up anywhere and a shelter of boughs built over it. As the rainfall is light in the Navajo country, it is not necessary to provide permanent shelters. The loom is worth a careful description, and as I do not know of any better, or indeed so good as that given by Matthews, it is here quoted entire: “Two posts, a a, are set firmly in the ground; to these are lashed two cross pieces or braces, b c, the whole forming the frame of the loom. Sometimes two slender trees, growing at a convenient distance from one another, are made to answer for the posts, d is a horizontal pole, which I call the supplementary yarn-beam, attached to the upper brace, b, by means of a rope, e e, spirally applied, f is the upper beam of the loom. As it is analogous to the yarn-beam of our looms, I will call it by this name, although once only have I seen the warp wound around it. It lies parallel to the pole, d, about two or three inches below it, and is attached to

the latter by a number of loops, g g. A spiral cord wound around the yarn-beam holds the upper border cord, h h, which, in turn, secures the upper end of the warp, i i. The lower beam of the loom is shown at k. I will call this the cloth beam, although the finished web is never wound around it; it is tied firmly to the lower brace, c, of the frame, and to it is secured the lower border cord of the blanket. The original distance between the two beams is the length of the blanket. Lying between the threads of the warp is depicted a broad, thin, oaken stick, l, which I will call the batten. A set of healds attached to a heald-rod, m, are shown above the batten. These healds are made of cord or yarn; they include alternate threads of the warp, and serve when drawn forward to open the lower shed. The upper shed is kept patent by a stout rod, n (having no healds attached), which I name the shed-rod. Their substitute for the reed of our looms is a wooden fork, which will be designated as the reed-fork."[106]

All the Navajo and Pueblo weaving is the same on both sides. Most of it is straight weaving, but there is a good deal of diagonal work. This is true also of the Moki. The diagonal weaving produces a diamond figure that is very pretty, but I have never seen it used in any of the finest Navajo work. As to the designs, Matthews says that "in the finer blankets of intricate pattern, out of thousands which I have examined, I do not remember to have ever seen two exactly alike."[106] Doubtless while some of these designs, or even many, are drawn from Pueblo sources as noticed, the weaver introduces original features and often invents new patterns. The blankets are woven, as a rule, in two ways, the tight method for protection against rain, and the loose method for protection against cold. The loose, soft blanket is

worn under one of the harder ones in wet or windy weather.[107] The Navajos also weave garters and long sashes. The garters are similar to the sashes, only smaller. They are used to hold leggings in place. Small blankets are made to put under the saddle, and these are often very fine in texture as well as in pattern. Similar ones are made for children.

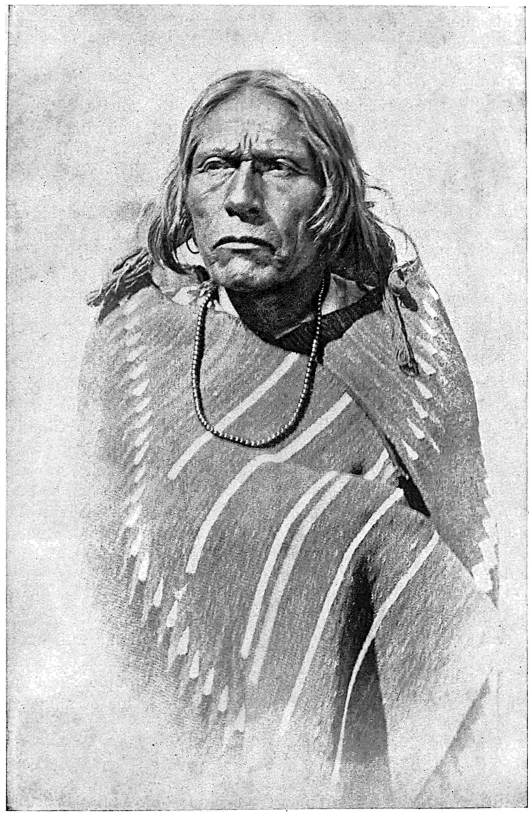
"Previously to the seventeenth century," says Bandelier, "the aboriginal dress consisted largely of cotton sheets, or rather simple wrappers, tied either around the neck or on the shoulder, or converted into sleeveless jackets." Of the fibre of the yucca, the Zuñi Indians made skirts and kilts; of rabbit-skins very heavy blankets were made. The northern Puebloans, of New Mexico, nearer to a game region, dressed in buckskin in preference to anything else. But still, even when cotton was unobtainable for whole garments, they sought to secure cotton scarfs and girdles woven in bright colours, which were used for belts as well as for garters, etc. The dress was more simple than that of to-day. Leggings of buckskin were worn in winter only, and then mostly by the northern Pueblos. The moccasin, or *tegua*, protected the feet. It is explicitly stated that while the uppers of this shoe without heel were of deerskin, the soles were frequently of buffalo hide."[108] The moccasin of the South-west is generally soled with rawhide of some kind, the sole being slightly turned up all round.

Another material for garments was feathers. These were utilised all over the continent, to a greater or less degree, by various tribes, but it was the Mexicans who carried the work in this line to perfection. "Nothing could be more picturesque," says Prescott, "than the aspect of these Indian

battalions with the naked bodies of the common soldiers gaudily painted, the fantastic helmets of the chiefs glittering with gold and precious stones, and the glowing panoplies of feather-work, which decorated their persons.... The common file wore no covering except a girdle round the loins. Their bodies were painted with appropriate colours of the chieftain whose banner they followed. The feather-mail of the higher class of warriors exhibited also a similar selection of colours for the like object, in the same manner as the colour of the tartan indicates the peculiar clan of the Highlander. The caciques and principal warriors were clothed in a quilted cotton tunic, two inches thick, which, fitting close to the body, protected also the thighs and the shoulders. Over this the wealthier Indians wore cuirasses of thin gold plate or silver. Their legs were defended by leathern boots or sandals, trimmed with gold. But the most brilliant part of their costume was a rich mantle of the *plumaje*, or feather-work, embroidered with curious art, and furnishing some resemblance to the gorgeous surcoat worn by the European knight over his armour in the Middle Ages. This graceful and picturesque dress was surmounted by a fantastic head-piece made of wood or leather, representing the head of some wild animal, and frequently displaying a formidable array of teeth. With this covering the warrior's head was enveloped, producing a most grotesque and hideous effect. From the crown floated a splendid *panache* of the richly variegated plumage of the tropics, indicating, by its form and colours, the rank and family of the wearer. To complete their defensive armour, they carried shields or targets, made sometimes of wood covered with leather, but more usually of a light frame of reeds quilted with cotton, which were preferred as tougher and less

liable to fracture than the former. They had other bucklers, in which the cotton was covered with an elastic substance, enabling them to be shut up in a more compact form, like a fan or umbrella. These shields were decorated with showy ornaments, according to the taste or wealth of the wearer, and fringed with a beautiful pendant of feather-work.... Such was the costume of the Tlascalan warrior, and, indeed, of that great family of nations generally who occupied the plateau of Anahuac.[109]... They were particularly struck with the costume of the higher classes, who wore fine embroidered mantles, resembling the graceful *albornoz*, or Moorish cloak, in their texture and fashion.[110]... Here they were met by several hundred Aztec chiefs, who came out to announce the approach of Montezuma, and to welcome the Spaniards to his capital. They were dressed in the fanciful gala costume of the country, with the *maxtlatl*, or cotton sash, around their loins, and a broad mantle of the same material, or of the brilliant feather-embroidery, flowing gracefully down their shoulders. On their necks and arms they displayed collars and bracelets of turquoise mosaic, with which delicate plumage was curiously mingled, while their ears, under-lips, and occasionally their noses, were garnished with pendants formed of precious stones, or crescents of fine gold[111].... Montezuma wore the girdle and ample square cloak, *tilmatli*,[112] of his nation. It was made of the finest cotton, with the embroidered ends gathered in a knot around his neck. His feet were defended by sandals having soles of gold, and the leathern thongs which bound them to his ankles were embossed with the same metal. Both the cloak and sandals were sprinkled with pearls and precious stones, among which the emerald and the *chalchivitl*—a green stone

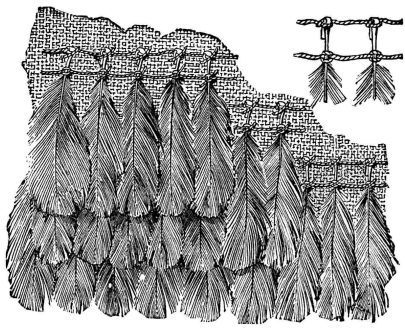
of higher estimation than any other among the Aztecs—were conspicuous. On his head he wore no other ornament than a *panache* of plumes of the royal green which floated down his back, the badge of military, rather than of regal rank."[113]



A PUEBLOAN OF SAN JUAN, NEW MEXICO

These quotations from Prescott will give an idea of the costume of the Mexicans, and of the beautiful feather-work which formed so important a part of it. Though the language of Prescott may somewhat exaggerate the quality and beauty of the Mexican garments, we know from what the Mexicans and

Pueblos manufactured afterward that much skill must have been displayed in these various fabrics. The cloak of cotton was probably no more a cloak or mantle than the blankets woven by the Pueblos and Navajos to-day; that is, it was a square of cloth worn about the shoulders. If one should describe the Pueblo in Prescott's delightful language, we should think him and his houses and garments far finer than they really are. To describe a breech-cloth as a girdle round the loins; to speak of blankets as mantles and robes; moccasins as sandals, and otherwise gild description, makes pleasant reading, but is liable to convey erroneous impressions. Prescott's lack of general knowledge of Amerind customs gave him a free rein and his poetical temperament finished the picture.



METHOD OF MAKING FEATHER-WORK

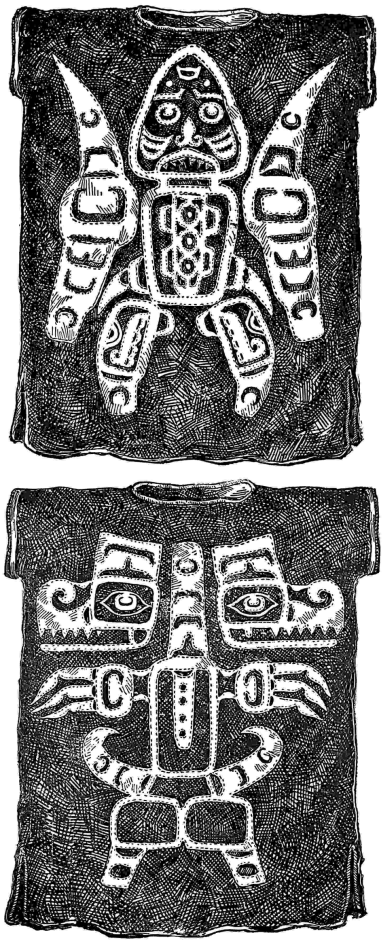
Montezuma wore on his head "a *panache* of plumes, ... the badge of military, rather than of regal rank." And this is exactly what Montezuma was, a war-chief. But Prescott drew his material from the Spaniards, and where he describes what they saw, he is not, in all probability, far from the mark, although his language may be sometimes rather flowery. The feather-work was one of the remarkable products of the Aztecs. In an ornamental way it is still practised

in Mexico, and the birds and other objects made from feathers exhibit a wonderful skill. Mantles of fur are mentioned as being used by the Aztecs, but these were probably constructed in much the same manner as the rabbit-skin robes of the Moki and the Pai Ute, that is, by twisting the skins into ropes and then tying them together. The cotton weaving was done on a loom similar to that now in use by the Navajos and the Pueblos. The feather-work was probably made in much the same way as that of Peru, specimens of which have been preserved in the tombs. The figure on page 137 shows the way the Peruvians attached the feathers to the cloth underground, but in many cases the feathers were woven in with the warp and woof, instead of being attached to the surface in this way. This use of feathers was not confined to any particular locality, but, like almost all the arts in use on the continent, was widely distributed. Turkey feathers were used in Virginia for this work, and in Louisiana the same bird was called upon. “The feather mantles,” writes Du Pratz in his history of Louisiana, “are made on a frame similar to that on which the peruke makers work hair; they spread the feathers in the same manner and fasten them on old fish-nets or old mantles of mulberry bark. They are placed, spread in this manner, one over the other and on both sides; for this purpose small turkey feathers are used; women who have feathers of swans or India ducks, which are white, make these feather mantles for women of high rank.”[114] Feather mantles of fine quality were also made by the Lenapé.

Almost every Amerind tribe could make thread, cord, nets, mats, and some kind of woven stuff. The Mexicans, Mayas, and other tribes of the Central region excelled in these things, but the Pueblos, and

Navajos, as we have seen, execute in modern times some admirable fabrics, which the Pueblos also constructed before the advent of the whites.

"The Mexicans had also," says Prescott, "the art of spinning a fine thread of the hair of the rabbit and other animals, which they wove into a delicate web that took a permanent dye.... The women, as in other parts of the country, seemed to go about as freely as the men. They wore several skirts or petticoats of different lengths, with highly ornamented borders, and sometimes over them loose flowing robes, which reached to the ankles. These, also, were made of cotton; for the wealthier classes, of a fine texture, prettily embroidered. No veils were worn here (Mexico) as in some other parts of Anahuac, where they were made of the aloe thread, or of the light web of hair above noticed."[115] Biart[116] says the women wore "a piece of cloth *cueitl*, which they wrapped around their bodies, and which descended a little below the knee; over this skirt they wore a sleeveless chemise called *huepilli*."



CHILKAT CEREMONIAL SHIRT

The Mayas and other Amerinds of the Central region used woven cloths similar to those of the Aztecs. Of the dress of the modern Amerinds of Nicaragua, Squier says: “It is exceedingly simple. On ordinary occasions the women wear only a white or flowered skirt fastened round the waist, leaving the upper part of the person entirely exposed, or but partially covered by a handkerchief fastened around

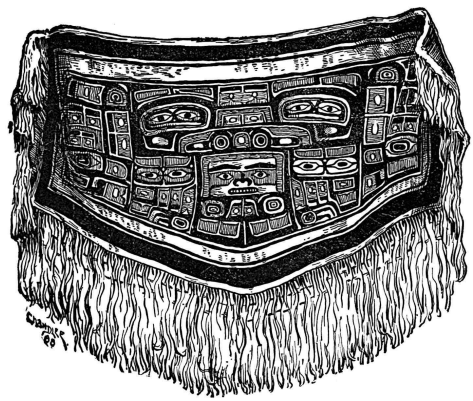
the neck. In Masaya and some other places, a square piece of cloth of native manufacture, and precisely the same style and pattern with that used for the same purpose before the Discovery, supplies the place of a skirt. It is fastened in some incomprehensible way without aid of strings or pins and falls from the hips a little below the knees.... The men wear a kind of cotton drawers, fastened above the hips, but frequently reaching no lower than the knees. Sandals supply the place of shoes, but for the most part both sexes go with bare feet."[117] The costume of the women of Louisiana as depicted by Du Pratz in an illustration in his history, is almost, if not quite identical with the costume of the women of Nicaragua.

Fine dressing was not confined to the Mexicans. Other Amerinds gave some attention to their personal appearance as well as the tribes of Mexico. In the following description by a Miss Powell, who visited an Iroquois council on Buffalo Creek, in 1785, of Captain David, if the worthy Captain had been described as a "lord," and Miss Powell had been less skeptical about his ablutions, he might easily have ranked with some of the "lords" of Anahuac who are so conspicuous in the charming works of Prescott. Miss Powell declared, "that the Prince of Wales did not bow with more grace than 'Captain David.' He spoke English with propriety. His person was as tall and fine as it was possible to imagine; his features handsome and regular, with a countenance of much softness; his complexion not disagreeably dark, and, said Miss Powell, 'I really believe he washes his face.'... His hair was shaved off, except a little on top of his head, which, with his ears, was painted a glowing red. Around his head was a fillet of silver from which two strips of black velvet, covered with

silver beads and brooches, hung over the left temple. A ‘foxtail feather’ in his scalp-lock and a black one behind each ear waved and nodded as he walked, while a pair of immense silver ear-rings hung down to his shoulders. He wore a calico shirt, the neck and shoulders thickly covered with silver brooches, the sleeves confined above the elbows with broad silver bracelets engraved with the arms of England, while four smaller ones adorned his wrists. Around his waist was a dark scarf lined with scarlet which hung to his feet, while his costume was completed by neatly fitting blue cloth leggins, fastened with an ornamental garter below the knee.”[118] This elegant gentleman belonged to no vanished or mysterious race; he was a modern Iroquois. Undoubtedly his ancestors had, many of them, with the means at their command, dressed with equal splendour, and we may wonder what kind of a description of them we would have had from the romantic Spaniards if they had happened to meet with them. Even this well-balanced American lady was considerably overcome, for she says: “Captain David made the finest appearance I ever saw in my life.” About this same time, or to be accurate, in 1776, Father Escalante met with Amerinds in Utah whose dress was very different. “Their dress,” he says, “manifests great poverty; the most decent which they wear is a coat or shirt of deerskin, and big moccasins of the same in winter; they have dresses made of hare and rabbit skin.”[119] In the latter we recognise the same twisted skin garments that are still used, or were a few years ago, by the Pai Utes and the Mokis. In central Georgia in Soto’s time the women wore a kind of shawl, “for covering, wearing one about the body from the waist downward, and another over the shoulder with the right arm left free.”[120] Spinning

and weaving were long supposed, by those who had not investigated, to be practised only by the Mexican and Pueblo tribes, and by the Navajos, but the Pimas and Maricopas of Arizona were adepts in these arts in 1857. The government agent reports at that time: “They also spin and weave their cotton, by hand, into blankets of a beautiful texture, an art not acquired from the Spaniards, but found among them more than three hundred years ago, when the Spaniards first penetrated the country.”[121] The Algonquins of Connecticut dressed in skins “cured so as to be soft and pliable, and sometimes ornamented with paint and with beads manufactured from shells. Occasionally they decked themselves in mantles made of feathers overlapping each other as on the back of the fowl, and presenting an appearance of fantastic gayety which, no doubt, prodigiously delighted the wearers. The dress of the women consisted usually of two articles: a leather skirt, or under garment, ornamented with fringe; and a skirt of the same material, fastened round the waist with a belt and reaching nearly to the feet.... Their hair they dressed in a thick heavy plait which fell down upon the neck; and they sometimes ornamented their heads with bands of wampum or with a small cap. The men went bare-headed, with their hair fantastically trimmed, each according to his fancy. One warrior would have it shaved on one side of the head and long on the other. Another might be seen with his scalp completely bare, except a strip two or three inches in width running from the forehead over to the nape of the neck. This was kept short, and so thoroughly stiffened with paint and bear’s grease as to stand straight after the fashion of a cock’s comb, or the crest of a warrior’s helmet. The legs were covered with leggins of dressed deerskin, and the

lower part of the body was protected by the breech-cloth, usually called by the early settlers, Indian breeches. Moccasins, that is, light shoes of soft dressed leather, were common to both sexes; and like other portions of the attire, were many times tastefully ornamented with embroidery of wampum. The men often dispensed with their leggins, especially in summer; while in winter they protected themselves against the bleak air by adding to their garments a mantle of skins. The male children ran about in a state of nature until they were ten or twelve years old; the girls were provided with an apron, though of very economical dimensions.... The women ... used the paint as an ornament, while the men seldom applied it, except when they went to war and wished to appear very terrible in the sight of their enemies. Sachems and great men had caps and aprons heavily wrought with different-coloured beads. Belts were also worn of the same material, some of which contained so great a quantity of wampum as to be valued by the English colonists at eight and ten pounds sterling."[122]



CHILKAT CEREMONIAL BLANKET

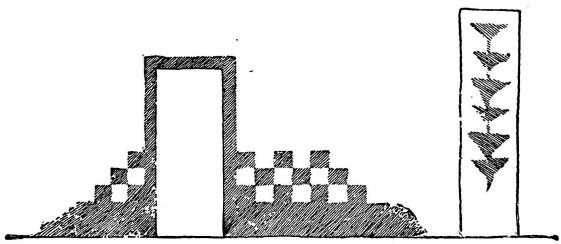
Here we discover the same desire for distinction of

individuals by dress that exists in all races, and the same desire to dress richly on the part of those possessing wealth or station, for it must be understood that wealth and station have their degrees amongst the rudest Amerinds as well as amongst the highest and amongst the Europeans. The dress in the summer always differs considerably from that of winter. In many tribes little is worn by the men in summer but the breech-cloth, and sometimes not even that. I recall one morning when I was living in the Moki village of Tewa, in Arizona, one of the dignitaries came to call upon me, as was a common custom, and he had wrapped about him a native blanket. When he temporarily let this covering drop away from his person, I noticed that there was not even a breech-cloth beneath. The small children of both sexes played about in a state of nature, though some wore a shirt, and the women appeared to have on only the one garment, made of two small black blankets sewed together on their side edges and caught over the right shoulder and under the left. The Moki women wear moccasins only in the ceremonials, or on some state occasion, or when travelling. They rarely travel.

Catlin gave a great deal of attention to the costumes of the Amerinds he travelled amongst and painted, and a reference to his works opens up a world of detail that cannot be presented here. Some of his most interesting work was amongst the Mandans, of Dakota stock, in the year 1832.[123] I will quote from him some general remarks on the Mandan costume. “The Mandans, in many instances, dress very neatly, and some of them splendidly. As they are in their native state, their dresses are all of their own manufacture, and, of course, altogether made of skins of different animals belonging to those

regions. There is, certainly, a reigning and striking similarity of costume amongst most of the North-western tribes, and I cannot say that the dress of the Mandans is decidedly distinct from that of the Crows or the Blackfeet, the Assiniboins, or the Sioux[124]; yet there are modes of stitching or embroidering in every tribe which may at once enable the traveller who is familiar with their modes to detect or distinguish the dress of any tribe. These differences consist generally in the fashions of constructing the head-dress, or of garnishing their dresses with the porcupine quills, which they use in great profusion.... The tunic, or shirt, of the Mandan men is very similar in shape to that of the Blackfeet—made of two skins of deer, or mountain-sheep, strung with scalp-locks, beads, and ermine. The leggings, like those of the other tribes of which I have spoken, are made of deerskins and shaped to fit the leg, embroidered with porcupine quills, and fringed with scalps from their enemies' heads. Their moccasins are made of buckskin, and neatly ornamented with porcupine quills. Over their shoulders (or, in other words, over one shoulder and passing under the other) they very gracefully wear a robe from a young buffalo's back, oftentimes cut down to about half of its original size, to make it handy and easy for use. Many of these are also fringed on one side with scalp-locks, and the flesh side of the skin curiously ornamented with pictured representations of the creditable events and battles of their lives. Their head-dresses are of various sorts, and many of them exceedingly picturesque and handsome, generally made of war-eagles' or ravens' quills and ermine. These are the most costly part of an Indian's dress in all this county, owing to the difficulty of procuring the quills and the fur; the war-eagle being the *rara*

avis, and the ermine the rarest animal that is found in the country." Catlin gave two horses for one of the head-dresses. This specimen came down to the wearer's feet. These are now called "war-bonnets," and are still in use among the Sioux and other tribes. "There is occasionally," continues Catlin, "a chief or a warrior of so extraordinary renown that he is allowed to wear horns on his head-dress, which give to his aspect a strange and majestic effect. These are made of about a third part of the horn of a buffalo bull, the horn having been split from end to end, and a third part of it taken and shaved thin and light and highly polished. These are attached to the top of the head-dress on each side in the same place that they rise and stand on the head of a buffalo, rising out of a mat of ermine skins and tails, which hang over the top of the head-dress somewhat in the form that the large and profuse locks of hair hang and fall over the head of a buffalo bull." This head-dress with horns "is used only on certain occasions, and they are very seldom."[125]



MOKI WALL DECORATION. PINK ON A WHITE GROUND. MISHONGNUVI, ARIZONA



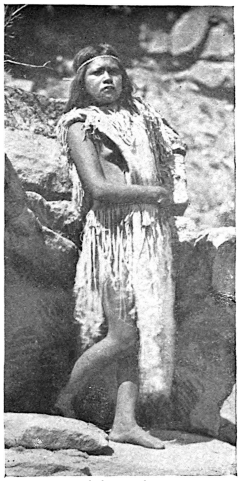
BELLACOOLAS



TOP VIEW OF CONICAL NORTH-WEST COAST HAT
Made of spruce roots, ornamented in red and black paint, with totemic device of a raven
See figure page 160

Among the Omahas, also of Dakota stock, garments, Dorsey says, “were usually made by the women, while men made their weapons.... There is

no distinction between the attire of dignitaries and that of the common people."[126]



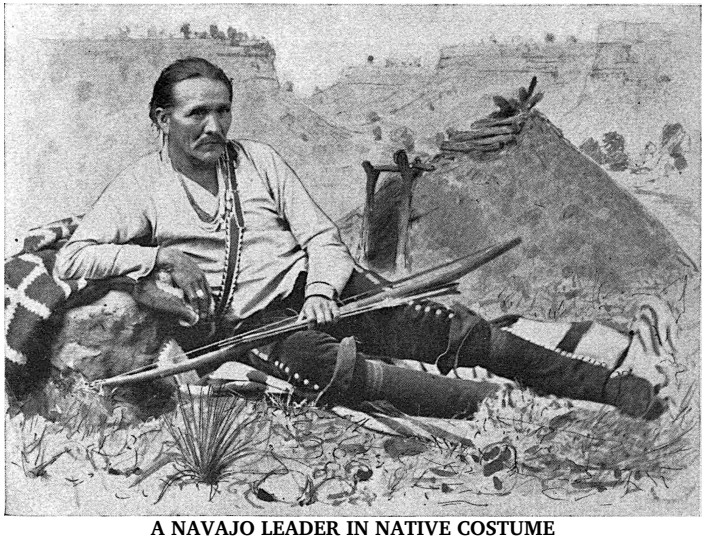
Posed by Thomas Moran
WONSIVU, A PAI UTE GIRL
From photograph by the Colorado River Survey, 1874

The Makahs of the North-west region (U. S.) manufacture a kind of cloth out of cedar bark. "The inner bark is selected, boiled, or macerated, and then pounded and hatcheled out. The bark is made to form the warp, the woof being made of grass thread. This stuff is pliable, and makes a convenient outer garment. Very pretty capes, edged with sea-otter skin, are made of it. This tribe also are the principal manufacturers of the cedar mats which are used on the Sound. These are entirely of bark, formed into narrow strips, and woven on the floor. They are thin and perfectly even in texture."[127] Among the tribes of the North-west: "The women universally wore a breech-clout of strands gathered around the waist and falling usually to the knees.... With the men no

idea of modesty existed."[128] They sometimes wear a bearskin with the hair out tied around the throat. "Their hats, when they wear any, are of the conical form common along the coast."[129] A conical wicker hat similar to the Japanese shape is found among the Tlinkits (Koluschan) and Chimmesyan up on the Alaskan coast. I saw several at Sitka in the summer of 1899, but not in use. The head covering of various tribes differs considerably. The skull-cap, woven like a basket, was never found, so far as I know, in the Mississippi region. The Pai Utes formerly wore caps, or at least some of them did, the men wearing a little buckskin affair tied under the chin with strings. The remainder of their costume often consisted of a string around the waist from which was suspended front and rear a cloth of buckskin reaching half way to the ground. Others wore fine buckskin suits; a fringed shirt and fringed leggings reaching, like those of the Dakota, to the waist. The southern Utah women wore conical caps of wicker-work, like a bowl upside down, except that they had a little point at the top. [130] The women's garment was of buckskin, attached at the neck and hanging down before and behind to below the knee, open at the sides, and bound around the waist by a buckskin sash. There was a plentiful adornment of buckskin fringe also. The feet were bare except in cold weather, when moccasins were worn. The younger women wore a narrow band around the brow composed of two buckskin strings, covered with porcupine quills, which were interwoven to hold the strings together, and the men often wore a head-dress of feathers, which stood straight up around the crown. In both men and women the hair was allowed to hang down, brushed back from the face without braids of any kind. The Navajo men wear a sort of turban; a piece of red

cloth or a bandana twisted around the brow, the hair being done up in a kind of Greek knot behind. Their clothes consist of a shirt or jacket of cotton goods, and trousers of the same stuff reaching to just below the knee and slashed up on the outside for about eight inches. They sometimes wear close-fitting breeches with leggings. This garment is generally held at the waist by a belt, which is often richly decorated by discs of silver about two by four inches elaborately engraved in their native style. The trousers are sometimes bound inside the leggings. Their leggings are of buckskin, red or black, frequently fastened on the outside by a row of silver half-globe buttons of their own make and woven garters, some three feet long, twisted around above the calf. The leggings are also applied without any buttons when they are held by the garters. The moccasin is one finely made, red or black, or the natural tan colour, with a rawhide sole turned up all round, and, like the leggings, often fastened by several silver buttons. The Navajos are extremely fond of black. The hair of the women is parted and tied in a knot behind very much the same as that of the men. Their dress is now very like that of Moki women, that is, a garment that is attached over the right shoulder, under the left, and falls about half way between the knees and the ground, usually caught in at the waist by a sash or belt. Also like the Moki women they wear a kind of combined moccasin and legging, on certain occasions. This is a rawhide-soled moccasin with a long narrow top-piece which is wound round and round the leg after the moccasin is put on, and gives an almost straight line from the knee down, almost exactly the same as the Moki custom. In fact, so far as garments are concerned, it might often be difficult to tell Navajo and Moki

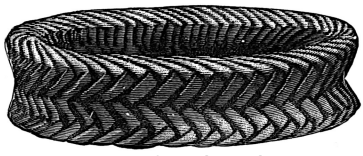
women apart. The Moki women wear their hair differently; the married ones making two cues of it which hang down on each side of the face, usually in front of the shoulders, while the unmarried ones have theirs done up in two extraordinary wheels or discs standing parallel with the side of the face or head, and attached to it by a sort of axle wound round with string. This effect is obtained by first dividing the hair into two equal parts, drawing each part to its side of the head and winding it with string just above the ear, and a little behind it. Each division is then again divided, horizontally, into two equal parts, and these parts are carefully brushed around a curved stick, like a letter U, held with the opening sidewise, the upper one down and around and the lower one up and around, till they are completely wound over the U and spread out as much as possible at the same time. Then they are tied in the middle with a string, that is, between the arms of the U, and finally, before withdrawing the U, the two portions are fully spread, till when the U is taken out, and they are further arranged, they almost meet and form a perfect wheel or circle. In ordinary practice they do not meet, but resemble a well tied bow-knot of broad ribbon; but when a girl has a fine head of hair that has been well cared for, and her mother takes a pride in dressing her hair for any ceremony or feast day, the wheel is almost perfect. This peculiar method of hair-dressing is now found nowhere else in the world, except among the unmarried women of the Coyotero Apaches, who are said to wear a coil something like it.



A NAVAJO LEADER IN NATIVE COSTUME



INTERIOR OF A MOKI HOUSE, ARIZONA
Unmarried women grinding corn; married women baking *piki*, or "paper" bread. From a model in the National Museum



PUEBLO HEAD MAT

Some of the Pueblo women tie their hair in a knot behind like the Navajo women; in fact, both Navajo women and men closely resemble the Pueblo in their dress, the reason in my opinion being that advanced before: namely, the incorporation of Pueblo stock. The Moki men also sometimes wear their hair like Navajos, but full-blood Navajos have taken up their residence with the Moki, so it may be confined to these and their children. The regular Moki method of dressing a man's hair is to "bang" it across the eyebrows, cut the side locks straight back on the lower line of the ear, and gather the remainder into a knot behind.[131] The brush used is composed of a bunch of stiff grass tied round the middle with a string. Both Navajo and Moki men as well as those of other tribes now wear white men's trousers when obtainable. The costumes worn in the various ceremonials of the Navajos, Pueblos, Iroquois, and other Amerinds are so numerous and so varied that there is no space in a chapter like this for a description of them.



NAVAJOS

In the line of embroidery comes the beadwork, see p. 125, the ornamentation with quills, and embroidery with yarns. I will only mention the embroidery of the Mokis, which is done on the ends of broad cotton sashes, with coloured yarns. This is the only form in which I have seen it. The pattern is elaborate, and often a foot or more at each end of a sash will be thus ornamented. The Pueblo women wore a roll on the head on which a water-jar was balanced. Coronado mentions this thus: “I also send two rolls, such as the women usually wear on their heads when they bring water from the spring, the same way that they do in Spain. One of these Indian women, with one of these rolls on her head, will carry a jar of water up a ladder without touching it

with her hands."[132] Some of the Pueblo women still use rings to carry water-jars on their heads. See figure on page 151.

Jaramillo speaks of the natives of the first village of "Cibola" as having clothing of "deerskins, very carefully tanned, and they also prepare some tanned cowhides, with which they cover themselves, which are like shawls and a great protection. They have square cloaks of cotton, some larger than others, about a yard and a half long. The Indians wear them thrown over the shoulder like a gypsy and fastened with one end over the other, with a girdle, also of cotton."[133] Other Pueblos of New Mexico he describes as having "some long robes of feathers which they braid, joining the feathers with a sort of thread; and they also make them of a sort of plain weaving with which they make the cloaks with which they protect themselves." In the *Relación Postrera*, the Cibola dress is described also, and I add it here because these accounts show so conclusively that the art of weaving was in full practice in this northern country before the Europeans entered it. "Some of these people wear cloaks of cotton and of the maguey (or Mexican aloe) and of tanned deerskin, and they wear shoes made of these skins, reaching up to the knees. They also make cloaks of the skins of hares and rabbits, with which they cover themselves. The women wear cloaks of the maguey, reaching down to the feet, with girdles; they wear their hair gathered about the ears like little wheels."[134] I would specially call attention to the similarity to the costume of the present Moki, even to the hair-dressing. The Seminole men had a singular way of wearing their hair. It was cut "close to the head, except a strip about an inch wide, running over the front of the scalp from temple to

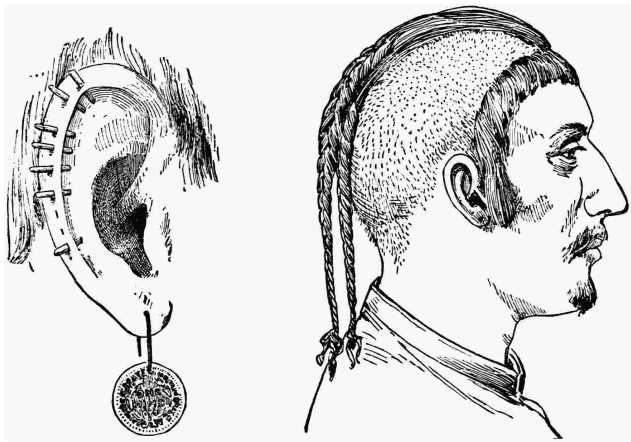
temple, and another strip, of about the same width, perpendicular to the former, crossing the crown of the head to the nape of the neck. At each temple a heavy tuft was allowed to hang to the bottom of the lobe of the ear. The long hair of the strip crossing to the neck is generally gathered and braided into two ornamental queues."[135] The mustache is worn among the Seminole, Navajo, Tlinkit, Eskimo, and other tribes. Some Eskimo shave a round place on the crown of the head. Some Amerinds also wear a small beard.



SEMINOLE MAN'S AND WOMAN'S COSTUME

Many Amerinds, especially the men, wore, as before mentioned, nothing whatever in mild weather, and even in winter the dress of some, especially in the more southerly regions, was far from elaborate. I remember one February, in the mountains of Arizona, visiting a camp of Shevwits to have a talk with the chief. Proceeding toward his wikiup, I found him near it lying naked, basking in

the sun, only partly covered by a rabbit-skin robe. He seemed to be warm and happy, the spot being a sheltered one in a canyon, and the rays of the sun being comfortably warm. In a *Journal of a Voyage to New York in 1679–80*, the authors, speaking of the natives near Sandy Hook, said: "They wear something in front, over the thighs, and a piece of duffels, like a blanket, around the body, and this is all the clothing they have. Their hair hangs down from their head in strings, well smeared with fat, and sometimes with quantities of little beads twisted in it out of pride."[136]



EAR-PERFORATING AND HAIR-DRESSING OF SEMINOLES

In war the body was generally naked in many tribes.[137] The Navajo warrior wore absolutely nothing but the breech-cloth, and I am not sure that he wore even that. In some tribes the warriors wore a head-dress, either a kind of turban or a feather head-dress. The Dakotas wore their long trailing war-bonnets of feathers, or not possessing one, certain feathers in their hair, according to their standing as warriors; and sometimes their leggings. Of course

each carried bow, quiver, shield, and such weapons of his tribe as were in vogue. On the North-west coast a protective armour was employed, and such a practice obtained in other regions, notably among the Aztecs and other Mexicans, who made a thick quilted cotton armour, as was noted in the quotations from Prescott. The subject of armour, however, belongs to another chapter. The wearing of rings in the nose and ears, and the perforation of the ears, while a part of costume, more properly belongs to customs. In the "ghost" excitement of a few years ago, special shirts were donned, and in the battles resulting from this craze, these shirts were worn because they were thought to be proof against bullets and all other weapons. "During the dance," says Mooney, "it was worn as an outside garment, but was said to be worn at other times under the ordinary dress. Although the shape, fringing, and feather adornment were practically the same in every case, considerable variation existed in regard to the painting, the designs on some being very simple, while the others were fairly covered with representations of sun, moon, and stars, the sacred things of their mythology, and the visions of the trance. The feathers attached to the garment were always those of the eagle, and the thread used in the sewing was always the old-time sinew."[138] The approved material of the "ghost-shirt" was buckskin, but where this could not be had the shirt was made of cotton cloth.

In the Far North, clothing is imperative all the year round, and about every minute of the time, out-of-doors. Yet the garments of the Eskimo often do not quite meet around the waist, so that in bending over the bare back is exposed to the cold. In their houses, too, they often wear very little; nothing more than a

kind of deerskin drawers. The material of their clothing is entirely fur-skins; though the Hudson Bay Eskimo sometimes wear trousers of jean, or denim, obtained in trade. Up to a certain age the children of both sexes are dressed much alike, and the smaller ones scrabbling about the bottom of a *umiak*, or skin boat, can hardly be distinguished at first glance from some kind of a bear cub. At Plover Bay, Siberia, where the natives resemble the Eskimo, I saw one small child in arms, that seemed to be completely sewed up in skins with the hair side in, its arms and legs looking like the stumps left after a surgical operation. Of the skin of the child nothing was to be seen except its face, its head, too, being entirely enveloped. This was in the middle of July, when the far-away Moki children would be scurrying about without a thread to disguise them. The children of the Eskimo proper, on our side of Bering Strait, were clothed, as mentioned, in skins with the fur side out. Reindeer, otter, fox, and seal seem to furnish the bulk of their furs, but a number of other skins and furs are used when they can get them. Murdoch, Boas, and Turner have given such careful detailed accounts of the Eskimo in the various regions they visited,[139] that I refer the reader to them for full information, presenting here only sufficient to convey a general idea of the clothing. “The chief material (at Point Barrow) is the skin of the reindeer (caribou),” says Murdoch, “which is used in various stages of pelage. Fine, short-haired summer skins, especially those of does and fawns, are used for making dress garments and underclothes. The heavier skins are used for every-day working clothes, while the heaviest winter skins furnish extra warm jackets for cold weather, warm winter stockings and mittens.... The man’s dress consists of the usual loose

hooded frock, without opening except at the neck and wrists. This reaches just over the hips, rarely about to mid-thigh, where it is cut off square, and is usually confined by a girdle at the waist. Under this garment is worn a similar one, usually of lighter skin and sometimes without a hood. The thighs are clad in one or two pairs of tight-fitting knee-breeches, confined round the hips by a girdle and usually secured by a drawstring below the knee, which ties over the tops of the boots. On the legs and feet are worn, first, a pair of long, deerskin stockings with the hair inside; then slippers of tanned sealskin, in the bottom of which is spread a layer of whalebone shavings, and outside a pair of close-fitting boots, held in place round the ankle, usually reaching above the knee, and ending by a string with a rough edge, which is covered by the breeches.... The boots are of reindeer skin, with white sealskin soles for winter and dry weather, but in summer waterproof boots of black sealskin with soles of white whaleskin, etc., are worn."[140]



THE GHOST-SHIRT, SIMPLE FORM



ESKIMO BOOTS

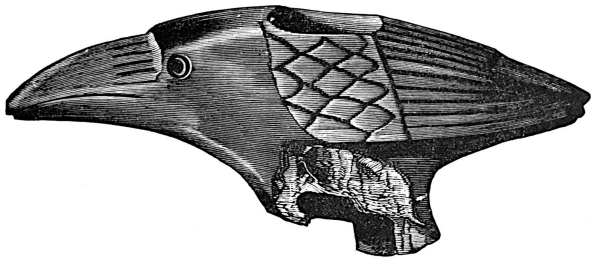
The woman's frock is much like the man's, in the Point Barrow region, only it has tails, or aprons, front and rear, rounded at the bottom. In the Hudson Bay region, this garment is shaped more at the waist, and the tails are lance-shaped and narrower, while the front one is much shorter than the back. At Point Barrow there is also worn by the men a cloak or mantle of deerskin, in extremely cold weather. These cloaks are put on over the head, and fall down all round, being fastened at the throat by strings. They are not of one piece. The men's leg coverings come only to the knee, but the women's are long enough to reach from the feet to the waist, and the moccasin is attached to the bottom. The edge of the moccasin sole is crimped to make it smaller at the top, and this is the case with the soles of the boots made. This crimping is done by the teeth. The wet-weather boots are waterproof and light, but there is a disagreeable odour about them. This odour is more pronounced in some of the hastily made stockings which are worn

inside the boots. I bought a pair of the common sealskin stockings made with hair side in at Port Clarence, but their smell was something unbearable. For a waterproof garment they take the entrails of the seal and, splitting them longitudinally, sew together the strips thus obtained in the desired shape. Coats made in this way are durable and light, and answer the purpose admirably. Dr. Kane mentions a dress he saw where a man wore "booted trousers of white bearskin, which at the end of the foot were made to terminate with the claws of the animal."[141]

In the middle and upper Mississippi region, according to Hunter, there were tribes who made blankets of the wool of the buffalo, notably the Osages, who were of Siouan stock. Their method of procedure seems to have been very like that of the Navajos and Mokis, to whom they are not related, except that they belong to the Amerind race. Hunter says: "The hair of the buffalo and other animals is sometimes manufactured into blankets; the hair is first twisted by hand and wound into balls. The warp is then laid of a length to answer the size of the intended blanket, crossed by three small smooth rods alternately beneath the threads, and secured at each end to stronger rods supported on forks, at a short distance above the ground. Thus prepared the woof is filled in, thread by thread, and pressed closely together, by means of a long flattened wooden needle. When the weaving is finished, the ends of the warp and woof are tied into knots, and the blanket is ready for use."[142]



RAIN HAT, HAIDA
See figure page 146



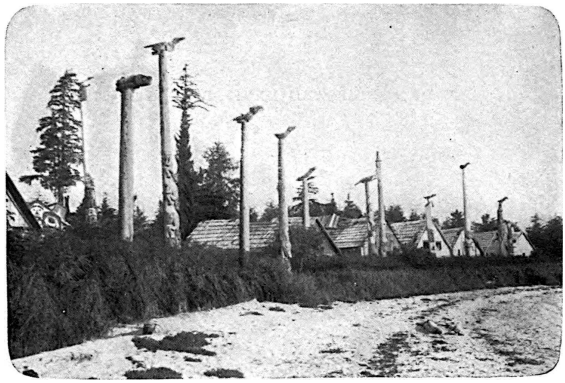
TOUCAN OF SQUIER AND DAVIS, REALLY A CROW

CHAPTER VII

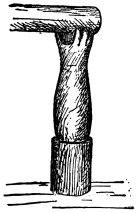
CARVING, MODELLING, SCULPTURE

THE shaping of objects in clay, wood, or stone, or other material, known as carving, modelling, etc., constitutes sculpture. Some form of these methods was in use in very primitive times for the production of weapons or tools of wood, bone, or stone. But the greatest schools of sculpture were basketry and pottery, for in the practice of these arts a sense of form and proportion could not be dispensed with. Thus sculpture finds its birth in several arts, but particularly in basketry, stone-shaping, and pottery. Taken all in all, the Mayas of Yucatan seem to have been the greatest artists and sculptors, and as we travel northward from there the skill in art gradually diminishes till, on passing the old Aztec realm, it drops off rapidly. Far to the northward the "Moundbuilders" exhibited a moderate skill and in some objects a similarity to Mexican work, and still farther to the north-westward the Haidas, Kwakiutls, etc., in their totem poles, canoes, etc., show not only a singular proficiency in carving in wood, but also

similarities to some of the Mexican work.

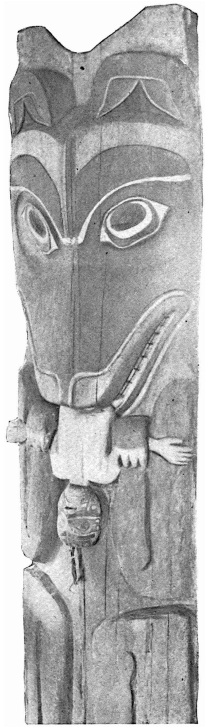


DESERTED VILLAGE NEAR CAPE FOX, ALASKA
Showing arrangement of totem poles and houses along the shore



INTERIOR HOUSE-COLUMN





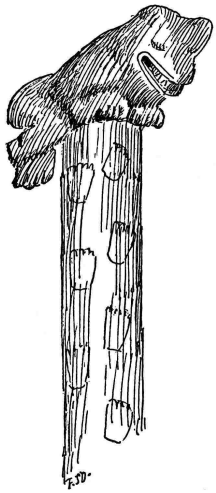
MAJOR PART OF INTERIOR HOUSE-POST FROM CAPE FOX VILLAGE, S. E. ALASKA

Presented to University of Michigan by E. H. Harriman. Height, 11 ft. 2 in.; width, 3 ft.; thickness, 12 to 15 in.; one piece of spruce. Painted in several colours. Photograph by Professor Cole, University of Michigan

Masks, pipes, rattles, and other ceremonial paraphernalia gave the Amerind sculptor much to

do. It must not be supposed, though, that all members of a tribe possessed the sculptor's power. There was as much variation as we now find among ourselves. It is not everyone of our people who can model a statue, or even carve the rudest shape imitating man. So it was with the Amerind. He had his arrow-makers, his skilful potters, his great carvers, who were employed by the less skilful to do their work. To-day, among the Amerinds of the North-west coast, there are specialists who carve the totem poles, and obtain high prices. The totem poles and house-posts are often elaborate, being covered almost from top to bottom with figures of totemic animals. The carving is often on a large scale, as the totem poles are frequently more than fifty feet in height. They are planted several feet in the ground, then there are several feet plain, and from that on to near the top they may be covered with carving, while surmounting the whole is a figure—bird, fish, or bear, or other animal—of large proportions. These poles stand in front of the house,[143] and are an indication of the clan or clans to which the person or persons who erected it belong. The Haidas and the Tlinkits specially excel in totem poles. The execution of the figures is often extremely good in a barbaric way. Besides the carved poles there are often the carved columns or posts inside the houses. These posts serve to support the two great rafters on which the jack-rafters rest, and are often elaborate. At a deserted village in south-east Alaska (Cape Fox), I saw two of these columns, each representing a huge bird, the wings being split out of cedar, quite thin, and attached to the post with a diagonally forward direction, the rest of the bird being erect and facing the room, the posts being within about six feet of the rear of the structure. Its tail was carved out of the

post in a sort of bas-relief the remainder of the post being squared up both below and above, and on the sides of the figure, except where the head was. The latter had a huge beak, of the carnivorous type. On the breast was a singular round face. The whole was brightly painted in reds, yellows, and blacks. The accompanying figure represents another of the house-posts of this village which is now at Michigan University. It was similarly painted. The carving of these tribes is done almost entirely in wood, so that had they disappeared a century or so before our coming there would have been found scarcely a trace of their work. In like manner the work of the tribes of the Mississippi valley may have disappeared—that is, supposing that they carved in wood, which is probable. There is a great similarity between the carving of the Haida and the Tlinkit totem poles, yet these tribes are of different stocks. An animal resembling a frog seems to be very common as a totem in both stocks. Human figures are also carved on the poles, and strange heads are frequent.



TOTEM POLE WITH BEAR ON THE TOP WRANGELL

The Haidas have become famous for their gigantic canoes carved from single logs and elaborately decorated.[144] The other Amerinds of this region also dig out fine boats from the huge logs they obtain so easily in the forest, but there are none equal to those of the Haida, who, indeed, require specially good boats for navigating the waters around their island, Queen Charlotte's. They are the best carvers of all the tribes now living north of Mexico. Their work is grotesque, corresponding with the singular mythology of the artists and their inability to render accurately the forms they see about them. Combinations of human and animal forms are often seen, such as the panther-man found by Swan in this region—a crouching figure with an attempt at a panther's head and forelegs, with the hind legs human. One of the most remarkable of all the Haida works from an artistic point of view is the group called the "Bear-mother,"[145] now in the National Museum at Washington, and made by *Skaowskeav*, one of the tribe. It apparently shows European influence. The lines are more flowing and soft than the ordinary Amerind method of execution, and the conception is more in range with European ideas. This may be accidental, however, and merely in the line of the sculptor's development. The material is slate. The subject is a child at the breast of the "Bear-mother." The story of the bear-mother, as told by J. G. Swan, is that "a number of Indian squaws were in the woods gathering berries when one of them, the daughter of a chief, spoke in terms of ridicule of the whole bear species. The bears descended on them and killed all but the chief's daughter, whom the king of the bears took to wife. She bore him a child,

half human and half bear. The carving represents the agony of the mother in suckling this rough and uncouth offspring." From an art standpoint, one failure in the execution of this conception is that the child does not suggest sufficiently its half-bear character. Nevertheless, it is an extraordinary work for an Amerind.



TERRA-COTTA STATUETTE, CHIRIQUI. ACTUAL SIZE



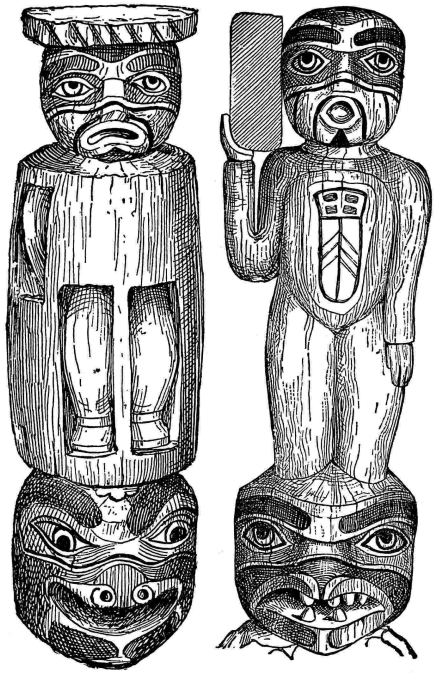
THE BEAR-MOTHER, HAIDA, N. W. COAST

All the Amerinds of the North-west coast carve wooden masks, but here again, the Haidas excel, though the Tlinkits are not far behind. It is the same with the other work, boxes, rattles, etc. Some of the bowls, hollowed from a single piece of wood, and carved on the exterior with their strange figures, and polished, have a decided artistic merit. The Innuit also make wooden masks, but they are crude when compared with those of Queen Charlotte Island, or the mainland in that vicinity. One feature of all these North-west masks, specially noted by Dall,[146] which resembles Mexican carvings, is the protruding tongue touching an animal. The protruding tongue is an

index of life if firmly held forth, according to Squier, while if it is loose and dangling at one side it signifies death or captivity. Dall concludes that the touch of the tongue symbolises the “transmission of spiritual qualities or powers.” In the totem poles this protruding tongue touching an animal is common, while frequently the tongue protrudes without touching any other person or thing. A totem represents the guardian spirit of the individual or clan, and therefore the closer the association with it the better; hence the idea of placing the tongue upon it.



WOODEN MASKS, N. W. COAST

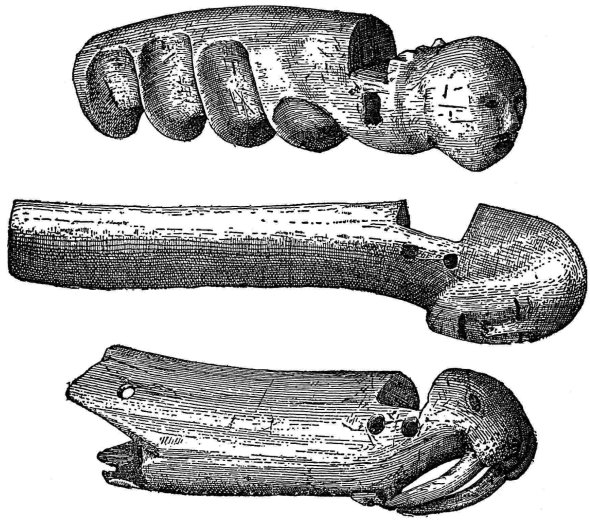


KWAKIUTL CARVING, N. W. COAST

"A person," says Boas, "may have the general crest of his clan and, besides, use as his personal crest such guardian spirits as he has acquired. This accounts partly for the great multiplicity of combinations of crests which we observe on the carvings of these people.... The crest is used for ornamenting objects belonging to a member of the clan; they are carved on columns intended to perpetuate the memory of a deceased relative, painted on the house front or carved on a column which is placed in front of the house, and are also shown as masks in festivals of the clan."[147] Some of the grave monuments of the Kwakiutls, the Chimmesyans, the Tlinkits, and others of the region are ambitious carvings and represent considerable labour on the part of the sculptor. One grave I saw at

Cape Fox was presided over by two huge wooden bears, the whole sheltered by a neat roof on posts and surrounded by a balustrade. The animals must have been at least four and a half feet high. Boas describes a grave-monument bird carved out of cedar bark, which is six feet high and about twelve feet from tip to tip of the extended wings. This bird is upright like the one carved on the house-post mentioned above, and, like that, has on its stomach the carved representation of a face. This bird's wings were originally painted black to represent feathers, but this decoration has worn off. It is now in the American Museum. The Kwakiutls also have carved some statues in wood representing chiefs in a state of nature. These are extremely crude, but are superior to much of the Moundbuilder work as shown in the pipes and other carvings that have been preserved, and not greatly behind the Mexican. Double-headed birds and animals figure prominently among the carvings and drawings of the North-west coast tribes, such as the double-headed "thunder-bird," the double-headed snake, etc. Boas obtained one of the latter among the Kwakiutls which he describes as having a head at each end and a human head in the middle. It is forty-two inches in length and about six inches wide. It is "worn in front of the stomach and secured with cords passing around the waist." The fabulous animal this affair represents has "the power to assume the shape of a fish. To eat it and even to touch or to see it is sure death, as all the joints of the unfortunate one become dislocated, the head being turned backward. But to those who enjoy supernatural help it may bring power."[148] These North-west tribes seem to love to carve, and decorate almost everything that will admit of it in this manner. In the vicinity of Fort Rupert there are on

the beach a number of rock carvings. These represent faces of sea monsters, and also some of them human faces.



ESKIMO CARVED IVORY DRUM-HANDLES. ½

Amongst the Eskimos carving is limited, generally, to a sort of engraving on bone and ivory, except in the matter of masks, which are rudely shaped out of wood without any of the elaborate finish that is observed in the work of Amerinds farther south. The wood they have had to work with is not the kind that promotes carving, and ivory is a rather difficult material to shape. Nevertheless, they occasionally, form some attractive little heads from it, to adorn the end of a harpoon line or something of that sort. They also shape their drill bows and other implements to some extent and decorate them with neat engraving. Some of these decorations are very pleasing, and exhibit the same taste for symmetrical ornamentation that is found throughout the continent. When they attempt to represent form they are generally

successful in giving it the proper character with less of the childish grotesqueness that is seen in most Amerind work. How much the long intercourse with Europeans on whalers has modified the art efforts of the Eskimo it is not possible to judge. Murdoch[149] gives illustrations of seals and whales shaped by the Point Barrow Eskimo, but aside from the *character* of the animal being generally fairly well rendered, there is little that is artistically interesting in the work. What I mean by character is that you can generally tell what is intended by an Eskimo carving, which is not always the case with the sculptured efforts of other Amerinds, though the finish may be better. Boas gives illustrations of the carved work of the Central Eskimo,[150] which show the same characteristics as the Western.

The Far Northern tribes, as a rule, are inferior to the other Amerinds, in sculptural work, yet the Eskimo, mechanically, were, in many respects, apparently in advance of all others. They possessed the lamp, the only stock on the continent who did, but, after all, this shows only the adaptability that saved them from destruction. In a world without fuel and with plenty of seal oil, they would never have survived if they had not invented a way to secure heat from the oil. The Amerind of the forested regions had no need for a lamp. The possession of the lamp, therefore, is no indication of higher mental powers, but of a more severe environment. Nor, on the other hand, is the limited amount of their carving an indication on their part of inferior mental endowment. It is, again, the result of circumstances, as pointed out above. In a region without suitable material or climate for extensive carving, they did not carve, that is all. Place them for a few generations in the region of the Haidas, and they

would begin to develop many different habits and traits.

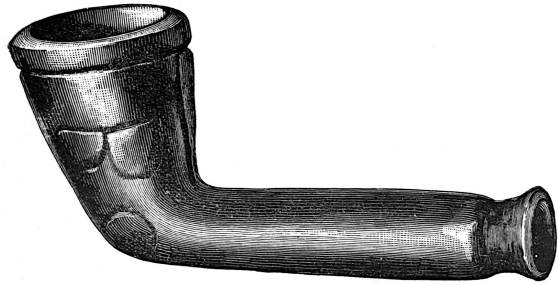


SPECIMEN OF MOUNDBUILDER SCULPTURAL SKILL WITH HUMAN FIGURE
Height of jar, 10½ in.; width of shoulders, 8 in.

On the Atlantic coast, few specimens of sculpture have, thus far, been found, nor has any carving of consequence been disclosed. In New Jersey some rude heads in stone have come to light, but such finds are rare. As the bounds of the Mississippi valley are entered, however, the art remains immediately increase in importance, but not to the exaggerated extent claimed by many writers. The carvings and sculptures of the Mississippi valley are, like all Amerind products in this line, crude, and there is no warrant for the claims that the occupants of the region were not “Indians,” so far as these remains testify. The most striking work found up to the present is that of the head-shaped vases from Pecan

Point, Arkansas, but as I have pointed out before,[151] these vases were not modelled free-hand, but were the result of a process, are in fact death-masks, built into the vases. While it was a clever thing to accomplish these in that way, yet it is a mechanical method, and has little to do with artistic skill. Thomas Wilson says of these vases that they "divide themselves into two distinct groups. The specimens forming the first group are death-masks, as becomes more and more evident the more the objects are studied; the other group, while of the same general form as the first, the human head being represented, has the face and features wrought upon it free-hand, as in sculpturing, without the aid of mould or cast."[152] It may be added that the second group is far inferior to the first, and is quite in line with the rest of the remains of this district.

The tobacco pipes of the region were lauded as perfect examples of the sculptor's art, but if one gives them critical examination, it is at once plain that they are not out of the Amerind line, and, what is more, that as specimens of sculpture they are pretty bad, because it is difficult to decide just what they represent. Even the Eskimo give their work character enough to distinguish it, yet the Moundbuilder did much of his carving so poorly that there has been frequent diversity of opinion as to what it was intended to depict. Henshaw took up the matter, and has shown that the degree of excellence of representation in the carving of the Moundbuilder pipes, so long extolled, has been overrated.

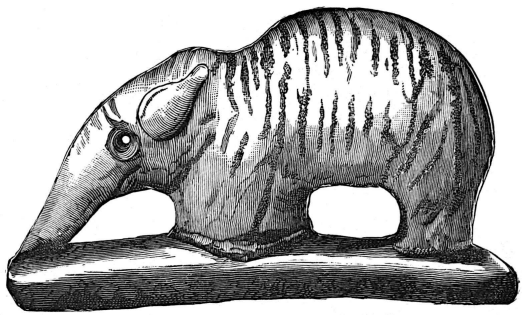


STONE PIPE FROM NORTH CAROLINA MOUND

The tobacco pipe, bearing, as it did, a peculiar relation to the sacred paraphernalia and ceremonies of the Amerinds, received much attention from them and was frequently elaborate, from the Amerind standpoint, in its details. The earliest form of pipe was a straight tube seen in Mexican carvings and also found in various parts of North America. In the Eastern United States one is found which is designated as the "Monitor." I suppose this name came from a resemblance to the famous first turret man-of-war, the United States ship *Monitor*. The base of these pipes was slightly curved downwards, the bowl rising from about the centre of the platform, on the convex side. Many of these show marks of steel tools.[153] Squier and Davis, who published their work in 1848, discerned wonderful artistic skill in the Moundbuilder pipes, and they discovered an intimate acquaintance between the Moundbuilder artists and far-off tropical birds and animals, probably because in those days it was thought that an "Indian" was absolutely incapable of producing anything. Especially was great stress laid by Squier and Davis upon certain pipes said to delineate the manatee. Theories of origin and migration were founded on this supposed knowledge, and other writers accepting these deductions founded yet other theories upon them; and they were *all* wrong. The

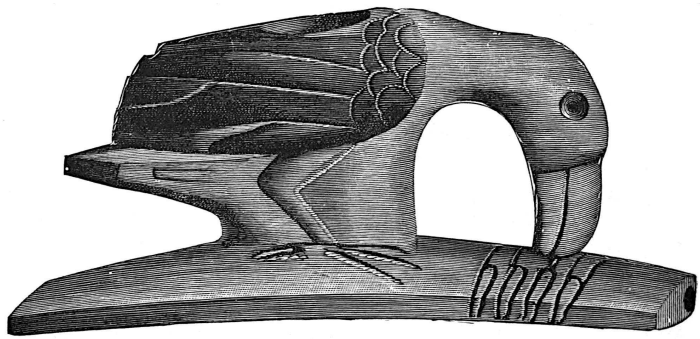
trouble seems to lie in the fact that the archæologists of some years ago not only were not naturalists, but they were not accurate and drew their conclusions from insufficient data. The attitude of the archæologist of to-day is exceedingly cautious, and before pronouncing a pipe carving a manatee, or any other animal, he would surely institute cautious and careful comparisons. This Messrs. Squier and Davis seem not to have done, nor did any of their followers or successors, being content, as Henshaw points out, to accept Squier and Davis's statement as absolute. Henshaw demolishes their claims and shows that no manatee is represented and that all the pipe carvings are of birds and animals that had their range in the country of the Moundbuilders or not far from its borders. What they called a toucan he identifies as a crow, or raven, and in this decision several other ornithologists fully agree. The nasal features are plainly shown, and the "general contour of the bill is truly corvine." See figure page 161. Thus is this supposed tropical acquaintance easily disposed of and the crow, certainly not a rare bird in that locality, substituted. A turkey buzzard is shown to be a hawk, and other foreign types claimed by Squier and Davis are disproved with ease. Out of forty-five carvings on pipes figured by them only five, by Henshaw's tests, are correctly named. Some carvings, which they were unable to identify, Henshaw places without any effort. As for the so-called manatees, he believes they were intended for otter. The manatee is an earless animal with many peculiar features which do not appear in the Moundbuilder carvings, while ears do appear. This is what I mean by not giving "character" to carvings. It is a matter, largely, of perception. The Eskimo appears to have this perception developed to a considerable degree, and

when he delineates an animal he knows he marks strongly its peculiar features, whatever else he may do. The element of imagination also comes in, for Amerinds often produce drawings or carvings of animals they think they have seen, or as they appeared to them in a sudden and fleeting glimpse, or vision.



SO-CALLED ELEPHANT PIPE, IOWA

Only two of the "elephant" pipes have been found and both by the same person. There is a doubt as to their genuineness. Even if genuine they are far from depicting the mastodon



TOUCAN OF SQUIER AND DAVIS, POSSIBLY MEANT FOR A YOUNG EAGLE



TRIPOD VASE, CHIRIQUI. ⅓. LEGS MODELLED TO IMITATE FISH

It was a lack of ability to reproduce accurately the lines and character of *any* object which caused some of the Moundbuilder pipes intended to represent the common otter to look like something else. As a matter of fact, these Moundbuilder pipe carvings, about which so much that is unwarranted has been written, are not superior to the carvings of the Haidas, or other stocks, and indeed, if anything, are not equal to them. They certainly do not compare for a moment with most of the work of the Mexican tribes. A further important conclusion of Henshaw's is that "there is no reason for believing that the masks and sculptures of human faces are more correct likenesses than are the animal carvings,"[154] which is exactly in accord with my own opinion, not only as concerns the work of the Moundbuilders, but of every other Amerind tribe. They were not sculptors of a kind that could reproduce a likeness to an individual. Their work was always *general*; they seldom drew or painted *from the object*, as an artist or sculptor of our race does, but they accomplished

their result by memory, imagination, and “rule of thumb.” The surprise of the Europeans at finding anything at all in the art line, coupled with a wide ignorance on art matters, has awarded all the Amerind carvings and sculptures, as is well illustrated in the Moundbuilder case, a false degree of excellence. The Amerinds of the Mississippi valley probably also carved wood, but their work in this material has, of course, long ago decayed. They worked other things, like shell, and some of the shell carvings are strikingly like Aztec drawings. In this shellwork there are a great many discs and gorgets, engraved with figures of spiders, rattlesnakes, birds, geometrical designs, and representations of the human figure. There are also rude shell masks of the human face, but these are primitive in the extreme. It must be borne in mind that this region was occupied for long ages, and *by many different tribes*, so that the work found is probably from different sources, though all Amerind. A class of singularly shaped stones is found in the Mississippi valley and northward, mainly north of the Ohio, to which the name “bird-stones” has been applied because of their resemblance to avian forms. No satisfactory explanation of their use has been advanced.[155]



SHELL GORGET, MISSOURI. ACTUAL SIZE

A number of stone statues of the human figure have been unearthed from Georgia to Tennessee, varying in height from three or four inches to something over twenty. They are all of the crudest description, and so far as any resemblance to the type of man who made them is concerned are absolutely valueless. They are undoubtedly human forms, that is all; not another characteristic, except sex, indicated by breasts, is presented. They are mostly in a squatting posture and on one or two there seems to be a suggestion of the hair dressed behind. Effigy bottles of earthenware from Tennessee are similarly crude and primitive. There is little, therefore, in the whole Mississippi valley or on the Atlantic coast, in the line of carving or sculpture, that could not have been executed by Amerinds that

have been known to our race, many of them living in the same localities where the art remains have been found. The superlative rank awarded Moundbuilder art is unwarranted.



BIRD-SHAPED EARTHEN BOWL, ARKANSAS. ⅓

Directing our attention now to still another region, we find in the South-west a vast deal that is absorbingly interesting. Fortunately the people were, many of them, still there when the first Spaniards came into the country in 1540, so that we have data to prevent the attributing the works found there to some mysterious race. It has been attempted in the case of the "Cliff-dwellers," but the investigations of competent ethnologists have effectually settled that matter, and checked the romantic tendency except in the case of a few who will not learn. The ethnographic condition of the South-west since we have known it probably represents also what

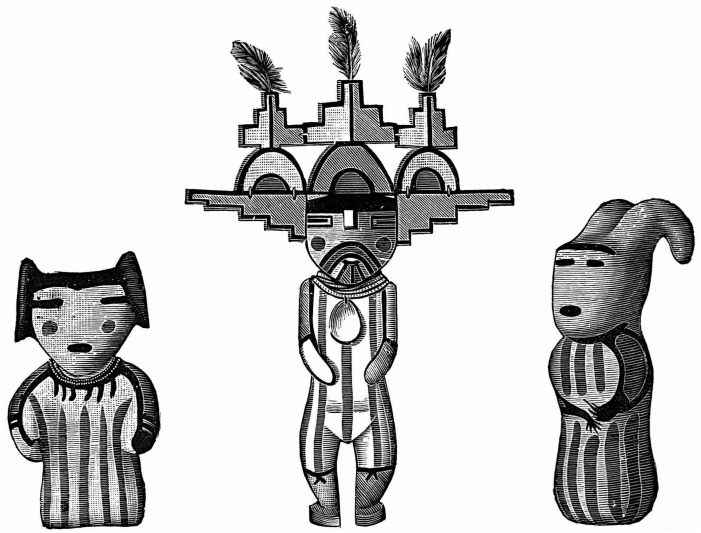
prevailed in the Mississippi region, that is, *a number of different stocks existing in different stages of culture*, distributed in patches, not uniformly.



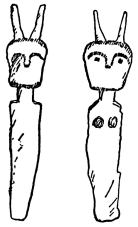
SHELL MASK, VIRGINIA. ½

All of them pitched their camps or built their houses as expediency dictated, and when cause arose to render them dissatisfied with their site, whether cliff-house, village, or camp, they moved to a more desirable place, leaving behind what they could not easily carry, as well as their houses. Thus in the course of a long time the area presented the appearance from the numerous remains of having a larger population than was really the case; though I may add that I believe the population was at one time somewhat greater than has usually been

admitted by the best ethnologists. These various stocks carried on their daily avocations, and when the results were in some indestructible material, many of them were preserved to us, which, taken in connection with the productions of the modern tribes, give an excellent and correct impression of the life and occupations of the inhabitants extending far back into the past.



Terra cottaWoodTerra cotta
MOKI SCULPTURAL SKILL WITH THE HUMAN FIGURE



THE ALOSAKA (MOKI)



Side

SCULPTURAL ART OF CHIRIQUI
Fragmentary figure in grey basaltic rock. ½

The Shoshonean is one of the stocks still extant in that and more northerly regions, and spreads far south to the lakes of Mexico. It exists to-day in several stages, the Mexican or Nahuatl, the Moki or Hopi, and the numerous bands of Utes.[156] Other stocks probably had equal variation in culture within their ranks, this variation being sometimes due to the absorption, as in the case of the Navajos, of a more cultured tribe. Many of these tribes did no carving whatever, and the region of our South-west is poor in this sort of remains. The Pueblos, while possessing other artistic talents of a high order, do not seem to have done much in the line of carving. They execute the ordinary fetiches with little or no shape, and they also produce a kind of small doll for the children and some that are used in ceremonies, figure page 178, but all these, and all the masks in ceremonies, are fearful things to look upon, bearing little or no resemblance to anything human; shapeless, botched up masses of hideousness, usually not carved or modelled, but built up out of various stuffs. Some of

them model effigies in earthenware, but these attempts do not amount to much. I have never seen any wood carving, from this region, worth mentioning. A. M. Stephen made a sketch of two figures in wood with small knots or horns called the Alosaka, which I copied, but they are primitive to the last degree. These figures were about four feet high, and were of cottonwood, apparently very old. Figures above. They were discovered by accident in a cave near the ruins of Awatuwi and removed. When the loss was learned by the Moki they requested the return of the images, which was granted, and they have not been seen since, nor does anyone outside of the custodians, or at least no white man, know where they are. Around the Moki towns I saw not a single attempt at rock carving, nor do I remember in extensive journeys over the South-western region ever seeing any relief carving whatever. Rock scratchings, erroneously termed "etchings" by many writers on these subjects, I have seen in great abundance, but not an attempt at sculpture worth noticing. There may, however, in some of the villages, be carvings nevertheless. Governor Prince found at a ruin near Cochiti a number of rudely formed stone figures of human shape. Nearby there are two panthers carved life size in the tufa which forms the surface rock of the locality. They "lie side by side," says Bandelier, "representing the animals as crouching with tails extended, and their heads pointing to the east."[157] Their length is six feet, one third of this being tail. The height is two feet and the breadth across the shoulders fourteen inches, and across the rump seventeen inches. They are about twenty-two inches apart. Around them is an irregular pentagonal enclosure, "made of large blocks, flags, and slabs of volcanic rock, some of which are set in

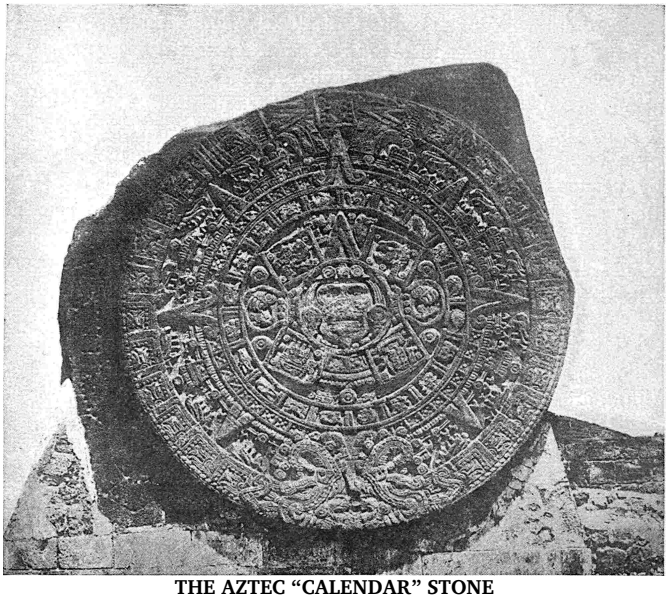
the ground like posts, while the majority are piled on each other so as to connect the upright pillars.... When I last saw the monument it looked like a diminutive and dilapidated Stonehenge."[158] Another pair of similar panthers occurs at not a great distance off at a place now called the *Potrero de los Idolos*. The size is about the same as the others. "One of them is completely destroyed by treasure hunters, who loosened both from the rock by a blast of powder, and then heaved the ponderous blocks out by means of crowbars. After breaking one of the figures to pieces they satisfied themselves that nothing was buried underneath.... The imperfections of the sculpture are very apparent; were it not for the statements of the Indians, who positively assert that the intention of the makers was to represent a puma, it would be considered to be a gigantic lizard."[159]



SHELL GORGET, TENNESSEE. ⅔

Apparently a human figure, with face in profile to the left of the circle near the top. The nose is cut away by a perforation

The metates or mealing stones, abundant in modern and ancient villages, and which in the Far South are elaborately carved oftentimes, are, in the South-west, so far as I have observed in the field and in reports of investigators, never decorated in the faintest degree. Articles, also, of various kinds that among the Haidas or Tlinkits would be covered with carving, have here not a vestige of it. Nor is there any carving about the house timbers or the stones that enter into the wall construction, places where the Aztecs, and especially the Mayas, lavished their skill. The Mokis make little clay images which they fire for the children, but they are without merit. Nor do the Navajo, the Pima, the Apache, Yuma, or any of the other stocks attempt anything in the direction of carving, so that it seems safe to say that the South-west has not produced any carving worthy of note, either in modern or ancient times. The ruins so far as known are as barren of carved articles as the modern occupied houses.



THE AZTEC "CALENDAR" STONE

Proceeding southward, however, when we approach the vicinity of the City of Mexico, examples of carving appear, and it is quickly evident that the Aztecs gave great attention to this form of art. One of the most remarkable specimens is the so-called Calendar Stone dug up under the present city, and now in the Mexican National Museum. It has been called a sacrificial stone, but Bandelier thinks it may have served rather as the base for another stone, holding the rope of a captive doomed to the "gladiatorial" sacrifice. For my part I incline to the opinion that it is an astronomical affair. The date carved on the top is the 13th Acatl or A.D. 1479 of our time, according to the accepted calculations. In the centre is a head, supposed to represent the sun, and around it are twenty figures, standing for the twenty days of the Mexican month. Then come eight divisions by what appear to be arrow-heads, four being extended farther toward the centre than the

others and also curled up at the ends or flukes, and one of these four ending in an elaborate sort of bow-knot ornament which covers a wide space at what is now the lower edge as it stands. Each of the eight divisions is again divided by a kind of crown which is smaller than the smaller arrow-heads, and then there is a still further subdivision made by a dot, on a line with the base of the crown. This gives thirty-two points, or exactly the number of points on our mariner's compass card, so that this carving can be "boxed" as any compass card can be. The N., E., and W., are more prominent than any other points but the S., which has the decoration referred to. Then come the N.E., S.E., S.W., and N.W., with each set of intermediate points diminishing in importance.[160] It looks as if our ancient Aztecs had found a mariner's compass washed ashore and perpetuated it by thus carving it with mythological significance.[161] Stranger things than this have occurred among Amerinds. But I prefer to believe that the Aztec astronomer worked out the points of the compass for himself, for these directions exist of course in every land independent of the compass, and the moment the Amerind began to work in astronomy he was forced to recognise the thirty-two natural directions that were open to him. No doubt the Mayan and Mexican observatories were somewhat similar to that of the Shah Jahan at Jeypore in India, where circular stones of different sizes formed a part of the observing apparatus. The Mayan and Mexican astronomical knowledge was probably equal to any extant in the fourteenth century.



AZTEC SCULPTURE, THE INDIO TRIST

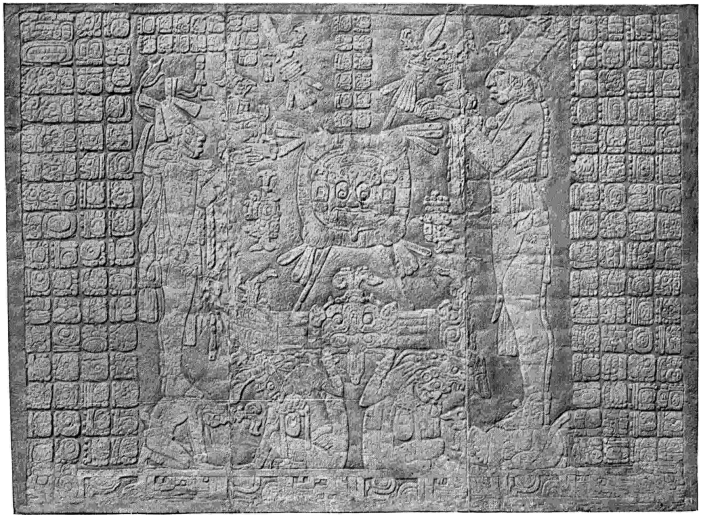
Another type of Mexican carving is seen in the statue of Teoyaomiqui, the god of war and death, of which the two faces are different. Bandelier believes this to be a statue of the war-god Huitzilopochtli.

Another remarkable statue given mention by Bandelier is the “Indio Triste.” This is a squatting figure of an Amerind executed with more simplicity than is usual with Amerind work in this region. Bandelier considers it a torch-bearer, a supposition borne out by evidence he advances, and also by the arrangement of the hands and arms, which are brought out forward of the chest as if clasping something in the empty space between the fingers. This statue is forty inches high and two feet wide. A comparatively small number of Aztec sculptures have been found. Almost all were destroyed or buried by the zeal of the early priests. Under the City of Mexico and in other places there are probably many lying intact, and some day they may come to the light. “The art of sculpture in aboriginal Mexico,” says

Bandelier, “while considerably above that of the Northern Village-Indians, is still not superior to the remarkable carvings on ivory and wood of the tribes of the North-west Coast and often bears a marked resemblance to them.”[162]

Proceeding on southward, the next great group of carvings is that ascribed to the Mayas, and extending, in a general way, from the Isthmus of Tehuantepec to the borders of Honduras and somewhat beyond. The people formerly occupying this area were extremely active in the line of carving, and there are preserved to us tablets, figures in bass-relief, statues, monoliths, and other stone- and wood-work that, taken together, easily bring this people in the very front place among Amerind artists. Their buildings were most elaborately ornamented with carving in stone, or wood, and with modelling in stucco, and there were many tablets bearing carved inscriptions. One of the most famous of these tablets adorned a beautiful building called in modern times “The Temple of the Cross.”[163] It stands at Palenque. The tablet was affixed to the rear wall of an inner chamber, termed by Europeans the “Adoratorio,” and was in three sections, the total dimensions of which were ten feet eight inches wide, by six feet four inches high. One section of this tablet remained in place at the time of Charnay’s last visit, one was in Las Playas, and the other, the third, is in the Smithsonian Institution. At each extreme end of the whole composition was a mass of the calculiform writing; next came two figures separated by a peculiar design in the centre, which somewhat resembles a cross, and it was this design that gave the name to the tablet. While the execution is remarkable it is nevertheless primitive, and similar to other Amerind art in quality and conception. It is

a high development of Amerindian sculptural ideas. Another similar tablet exists in the so-called “Temple of the Sun.” A cast of this was made by Charnay and a photograph from this cast is given in figure on page 185.[164]



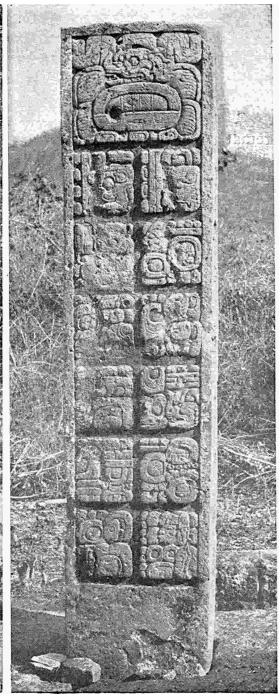
SANCTUARY TABLET, TEMPLE (TEOCALLI) OF THE SUN, PALENQUE



"ALTAR" IN FRONT OF STELA D, COPAN

At Copan twenty-three stelæ, or monolithic monuments, elaborately carved with human figures and hieroglyphs, have been found. Each had in front a sculptured block designated as an altar. Their average height is twelve feet, and their breadth and their thickness each about three feet. Stelæ and so called idols have been exhumed around Lake Nicaragua, but all remains grow less important towards the south except in Chiriqui, as well as towards the north. Indeed, here in Yucatan seems to have sprung the living fountain that watered all the desolation of the Western world.





STELA NO. 6, COPANBACK OF STELA NO. 6



PUMA-SHAPED STOOL OF GREY ANDESITE, CHIRIQUI. ¼

The stelæ at Copan are some of the most artistic and altogether remarkable sculptures found on the continent. They are highly decorative, and the execution of the intricate designs with the poor stone tools at their command is extraordinary. But all the productions of the Mayas pass easily beyond those of any other stock on this continent. Some of the conventionalised animal heads used as gargoyles are exceedingly well done and so also are several works called “singing-girls” (see figures pages 19 and 79). There are no geometric patterns at Copan, and the designs and execution are of a high order, yet at the same time thoroughly Amerindian. The rattlesnake enters into many of the designs and is represented by itself frequently. It was an animal of great importance to all Amerinds from the thirty-eighth parallel down. Charnay gives an illustration of what he calls votive stones, that are apparently the representation of the rattle of the revered reptile. The segments are clearly indicated and altogether the design seems to me unmistakable. The region of the South-west and Mexico is also the richest in species of any part of America, no less than “eight out of a total of seventeen species occurring at or near the boundary between the United States and the

Mexican Republic." In southern Arizona seven different species are found. "Their centre of distribution appears to be the tableland of Mexico with its extension northward into the south-western United States."[165]



HEAD SCULPTURED IN STONE, CHULTUNES OF LABNA, YUCATAN

One of the "Temples of the Cross" at Palenque is flanked at the entrance by two well-constructed figures, one on either side, supposed to represent the Mayan war and rain gods.[166] These figures are in low relief, covered with the customary Amerind trappings and head-dresses of this region. On each tablet there are some calculiform characters. Many of the ruined buildings still exhibit a wealth of ornamentation either carved in stone, modelled in

stucco, or constructed out of rubble and stucco. Some of the carvings, notably certain heads at Uxmal, have formed the basis for much discussion. The latter were supposed by Waldeck to be representations of elephants' trunks, but there is no foundation for this supposition. They more likely represent ceremonial masks with long noses. Something similar, though lacking the curve, is seen in some of the remarkable funeral urns found in the Zapotecan tombs.

The statue of Chac-Mool, found at Chichen Itza by Le Plongeon, is an example of what was accomplished when the figure was attempted without any of the accessories of masks, draperies, etc.[167] It is a large reclining figure, crude and primitive. Some of the work at other places is more symmetrical, as, for instance, the Lacandon idol described by Charnay. "This idol is very beautiful and unique of its kind, for nothing like it has been found either in Tabasco or Yucatan. It represents a figure sitting cross-legged, the hands resting on the knees ... the face now mutilated is crowned by an enormous head-dress of a peculiar style, presenting a fantastic head with a diadem and medallions, topped by huge feathers, like those on the columns at Tula and Chichen-Itza."[168] This idol was found at Menché, where there is a lot of excellent work in the line of carving, some of the wooden lintels being particularly interesting. It is impossible in a brief chapter to convey more than a slight impression of all this elaborate carving. The reader who desires to obtain a full comprehension of the work should study Maudsley's text and illustrations in the *Biologia Centrali Americana*.

Where modelling was accomplished by the building-up process with stones and mortar the

results were sometimes gigantic. Stephens found an enormous head made in this way at Izamal at the base of the palace of Hunpictok. He described it as being seven feet eight inches high. “The features,” he says, “were first rudely formed by small rough stones, fixed in the side of the mound by means of mortar, and afterwards perfected with stucco so hard that it has resisted the action of air and water for centuries.” The stone composing the chin alone measures one foot and six inches. The face had an extremely large mustache. This singular specimen of the Yucatan Amerinds’ modelling skill has, since the visit of Stephens, completely disappeared. At the same place is another, however, still intact.



LARGE BUILT-UP HEAD AT IZAMAL

This one is thirteen feet high and is constructed in the same manner as the one that is gone.

Everywhere throughout Yucatan and the contiguous region the architecture is overloaded with ornamentation which many large volumes would barely be sufficient to describe. In Nicaragua, as well as in Honduras, there are found many carvings and sculptures, statues, stelæ, etc., but they are rarely

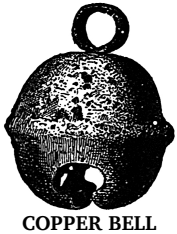
equal to those found in the Maya ruins. It must be said, however, that the examination of these states has been even less thorough than that of the Maya region. Tribes of Nahuatl stock built and laboured in the country below the Maya, and in Costa Rica there are indications that the remains belong to Amerinds who differed from both Maya and Nahuatl.

Some of the supposed metates or mealing stones found in Nicaragua are carved with legs and artistically decorated. One figured by Squier is a particularly beautiful specimen. It is a thin curved slab, concave side up, and has four legs. One end projects considerably beyond the legs, apparently forming the head or end where the operator sat or kneeled, and is carved in a wide band all the way across. In Chiriqui there are similar stones. Another class of carved remains found in Chiriqui is apparently a sort of metate, but it differs from the latter in being round, and Holmes designates them as stools, for want of a more exact term.[169] Some wooden stools have recently been obtained in Central America which are so nearly like the affair described by Squier as a metate, that it is probable the latter was also a stool. The figure on page 188 illustrates this class. They have a depressed upper surface and are carved basalt in one piece. An example of the round is given above. To carve an object like this from solid basalt must have been a work of great duration. It is in their metal- and claywork, however, that the Chiriqui Amerinds specially excelled.

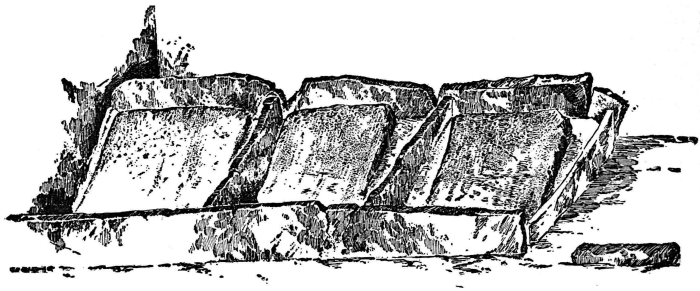


STOOL OF GREY BASALT, CHIRIQUI. ⅓

All works are dominated by the customs and religious ideas of the Amerind race, which were practically the same everywhere in different stages of development. Nowhere do we find a touch of idealism, which is such a marked characteristic of the work of the European race. The highest of it marks a development in art below the Egyptian. As in picture-writing we trace the growth of letters, so by the aid of the Amerind sculpture and carving we have a line of art progress from infancy to the present time.



COPPER BELL FROM TENNESSEE



PUEBLO MEALING STONES

CHAPTER VIII

SHELTERS, DWELLINGS, AND ARCHITECTURE

THE Amerind of North America has generally been considered a shiftless and indolent being, but the preceding pages have shown, I think, that this estimate is an error, and the following chapters, together with the present one, will even more conclusively demolish that false assumption. The Amerind to be sure was not a white man, but it must not be forgotten that the constant holding of the white man's nose to the grindstone is not so commendable as it is often said to be, for it is not choice with him but necessity born of his ways of living and his great numbers. Put him in comparatively small numbers on a vast continent rich and fertile and abounding in game, and it is not likely that he would shut himself up in a factory or in an office, where he is only a counting machine. The Amerind was as industrious as his environment demanded. Doubtless had his development not been interfered with by the Discovery, he might have

arrived in time at the same condition of pressure that compels us to labour incessantly.

Almost everywhere on this continent are discovered numerous evidences of Amerind industry and toil. From the brush shelter of the Pai Ute of Arizona to the vast stone structures, richly ornamented, of Yucatan, is an immense range, and within these limits are to be found about every kind of a refuge from the elements that mankind has been able to devise. Mud, boughs caves, wood, adobe, stone, ice, snow, wicker-work, wattling, skins, in fact, every material and every possible hole, existing in nature, have been utilised by the Amerind, and the materials have been given every variety of shape. In nothing, perhaps, has his struggle with environment, and the moulding effects of the environment, been more clearly exhibited than in the forms and materials of the dwellings he has been compelled to invent. Other evidences of his perseverance and exertion are discerned in great aqueducts, in long irrigating canals, in reservoirs, in huge earthworks, and enormous mounds that sometimes rival in magnitude the giant constructions of Egypt.

The Amerind dwellings may be divided into three general classes,—temporary, portable, and fixed. The two classes, temporary and fixed, only are usually recognised by ethnologists, but it has seemed to me proper to add the third class, because of the wide use of the portable tipi, and other forms of tent. The temporary houses, those abandoned on moving camp and seldom occupied again, may be represented by the Pai Ute wikiup; the portable, carried from place to place for years, by the tipi of the Dakotas; the fixed, or those which are occupied either for an extended period or periodically, by the stone or

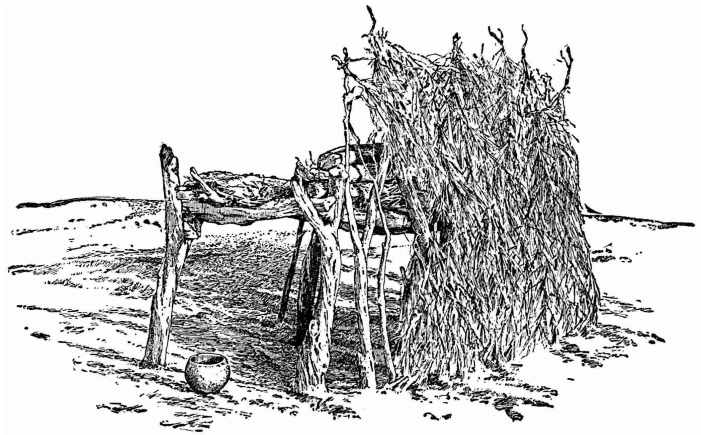
adobe house of the Pueblos, or the wood house of the Iroquois, or the wood and earth house of the Eskimo. [170]



PAI UTE WIKIUPS, NORTHERN ARIZONA

Outside of a natural cave or rock shelter, the wikiup of the Pai Ute exhibits about the lowest type of house used by man. It is said the chimpanzee makes a rude hut of boughs and branches, but even that could scarcely be less simple than the Arizona wikiup. This is composed merely of several branches arranged in a semi-circle, or rather more than a semi-circle, eight or ten feet in height, their tops together, and covered with boughs of cedar or pine or any other convenient brush. About one third of the circumference is open to the south, and opposite this side the fire is built a few feet away. The Pai Ute is surrounded by remains of excellent stone dwellings constructed long ago by Amerinds who are believed to be of the same general stock, but he has never tried to improve his wikiup of his own accord. The Utes, his kindred on the north, live in good tipis, but the Pai Ute appears never to have noticed the fact.

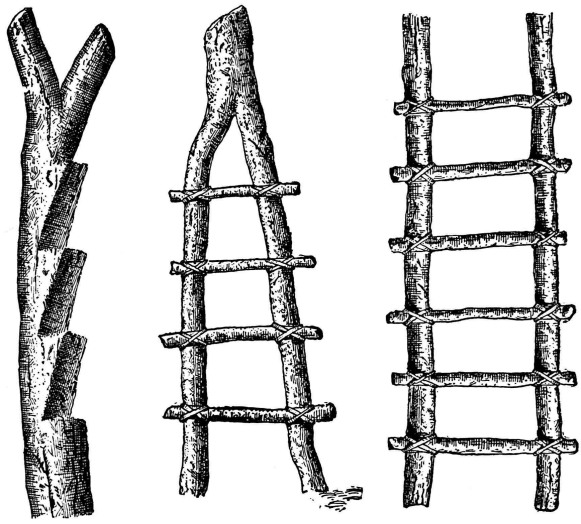
The Mokis, also allied to him, live not far to southward in excellent houses, yet he has never attempted to emulate them.



MOKI KISI CONSTRUCTION

In the kisi construction of the Mokis we may perhaps see the beginning of even the wikiup. The kisi is a sort of windbreak and sun-shelter lightly constructed of boughs and made in two ways, one called kishoni, being simply poles stuck in the ground in the arc of a circle with the concave side towards the north, and interlaced with twigs and branches to form a shade. The other kind is built by planting several posts with crotches at their tops in the ground in the form of a parallelogram and laying other posts or poles across from crotch to crotch and covering these with poles to form a platform or roof. Against the whole, on the south side, poles and branches are erected to form a shade. These affairs are put up in the fields to protect the crop tenders when there is no convenient cliff or ledge whereon to erect a better structure of stone. Doubtless out of these shelters, now seen in the field structures, originally grew the firm adobe and stone house, by

one step or improvement after another, and probably all house construction had some such simple beginning. In a forested area, however, the easy construction of a comfortable house out of poles and bark would delay any development of a durable stone or adobe structure; the adobe, indeed, would not be durable in a humid climate. Protection and subsistence dictated the region a tribe or a stock should occupy, and the region usually determined the character of the house or shelter. House building, in its beginnings, is largely a result of environment, and was developed or modified accordingly. The tribes that were compelled to live in a sterile, dry country, where game and wood were both scarce, were forced to provide themselves with different food and different shelter from those which occupied a well-wooded country abounding in game. A few skins and poles, in the latter case, would quickly produce a house. In the arid region, however, man was not provided with such convenient material. His shelter from the sun cost him much labour and he was obliged to transport his necessary wood long distances. Additions to the shade to make it more comfortable were therefore obtained by piling up stones or scraping together the mud after a rain, and these operations being repeated, a development of skill was the inevitable result; skill which eventually produced a wall all round the sun-shelter, with the beams of the latter resting upon them instead of upon posts.



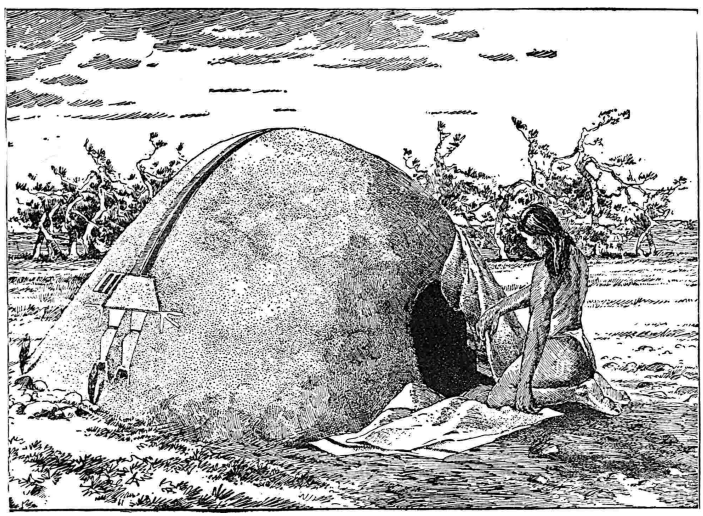
PRIMITIVE AMERIND LADDERS



A NAVAJO HOUSE

It seems, therefore, altogether probable that stone and mud house building originated in arid regions; but in a region treeless, like our great plains, the inevitable outcome in the line of a shelter was the portable tipi (teepee), because there bison hides were at hand for covering, but poles of the proper sort were difficult to secure and were carried along. In the forest, neither portable tents nor stone houses were necessary. It would only be when population was dense enough to destroy the game and timber, or when a people were forced to an arid region, that the stone house would develop. The Iroquois was a forest Amerind, and he built a house of wood that

was excellent in construction and answered his purpose admirably. The Navajo occupying an arid region has been content with a rude shelter of boughs and branches or with boughs or poles covered with mud. They have never profited by the example of their Moki neighbours, and built substantial houses,—one reason, and the chief one, being that their habit of never occupying again any shelter where death has occurred has precluded it, for they do not care to bestow great labour on a structure that they may be called upon any time to abandon. There are then other causes besides ability, or inability, to build substantially that determine the character of the Amerind house.



A SWEAT HOUSE

Bandelier states that the Pimas “dwelt in scattered hamlets, the houses of which combine to-day the mud roof of a typical New Mexican pueblo with the temporary framework of frail branches characteristic of the roaming savage.”[171] The roof is dome-shaped, but it is similar in material to the Pueblo mud roof,

so that there we have a sort of a cross between the Moki field shelter, already mentioned, and the Navajo hut or hogan. The stock from which the present Pimas descended are supposed to have built the remarkable structure in Arizona known as *Casa Grande*, found in ruins by the first explorers. Tribes alter their methods of building, either from summer to winter or at different epochs. The Omahas at one time made lodges of wood, at another of earth, and at still another time they dwelt in tipis of skin. If a stone-house-building tribe should migrate to a region where neither loose flat stones nor adobe clay could be readily obtained, they would be forced to use timber.[172] The Zuñi languages and traditions point to the occupancy by the Pueblos in early times of brush houses like those of the Pai Utes. The Mohaves live in low huts of branches covered with mud.

The communal principle of living pervaded America and largely determined the size and character of the dwellings. A number of families usually lived together, in the same house, or in a group of rooms or houses. The “long-house” of the Iroquois, called by them *hodénosote*, and the clustered fortress-houses of the Pueblos, are good examples of the results of the practice of the communal principles adhered to by most of the Amerinds. It is also believed by some of the best authorities, like Bandelier and Morgan, that the Mexican and Mayan houses were largely due to the same cause.

Among the Omahas the tipis were usually grouped according to gentes.[173] Tipi and wigwam are frequently used by us as synonymous, and in some dictionaries a picture of a tipi is made to represent a wigwam.[174] This is an error due to unfamiliarity

with different forms of Amerind dwellings. The tipi is generally a portable structure while the wigwam is always fixed, and the latter is also of a different shape. Tipi is a Dakota term and wigwam is Algonquin. Tipi is really the plural for “house,” the singular being “ti,” and “pi” a termination indicating plurality.[175] It is constructed by arranging a number, sometimes as many as twenty or thirty, long poles, previously tied together near their tops, in a circle of about ten or fifteen feet diameter. This conical frame is then covered with bison hides sewed together in one sheet, or in modern days with canvas, shaped properly and laced or pinned together along the middle third of the junction of the covering mantle. The upper third is left loose, and its pointed ends are extended up and out by means of outside poles stuck into pockets in their extreme upper corners, according to the direction of the wind, to let the smoke escape from the fire built in the middle of the interior. If the wind blows straight at these flaps they are brought close together. Sometimes an extra skin is adjusted at the top so that it can be placed on any side to accomplish this object. The lower third is left open for a doorway, another skin being adjusted before it with a stick to spread it near its upper end, which end is attached to the tent. The bottom of the tent cover is held down by stakes or pins driven into the ground. In case of high winds, stones or other weights are placed on the bottom edge of the skins to keep them down. In summer the Omahas, and other tribes of the Dakotas, erected, when convenient, an elliptical lodge covered with bark, the roof being rounded and the construction being generally similar to the Algonquin elliptical wigwam. It was not more than seven feet high, while the tipi is twelve to twenty or more.

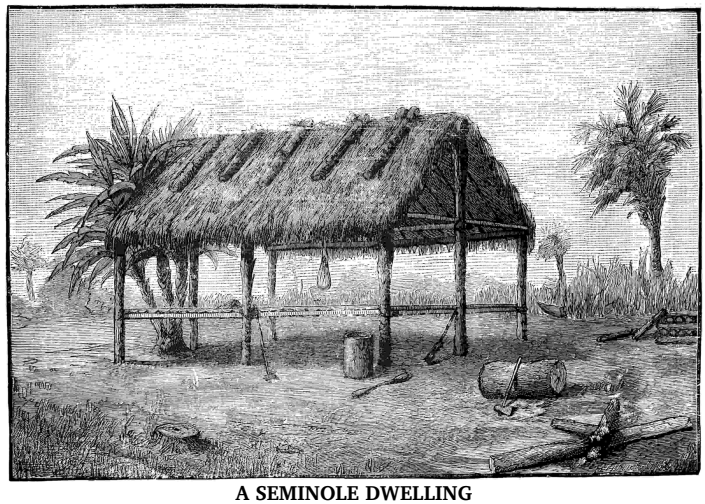
These tribes also sometimes built earth lodges, chiefly for summer use, the roofs of which resembled in construction those of the Pueblo houses, though they were conical. A number of posts were set up in the ground to support in their crotches the transverse beams upon which numerous slender poles, about two inches in diameter, were laid to reach almost to the top where a hole for the exit of smoke was left. Against the outer series of posts all around slabs of wood were set up and the whole was then covered with earth a foot or two thick after matting and a layer of grass, or grass alone, was placed on the rafters or roof poles. This lodge was circular, the roof being conical, and it was entered through a covered way about ten feet long and five feet wide, the outer opening of which was protected by hanging bison hides. The supporting poles or posts were arranged in two concentric circles, in large lodges, the inner set being higher than the outer. Compartments within opening toward the fire were formed of willow matting, or skins.



AN OMAHA TIPI

The regular tipi was decorated in accordance with tribal customs. Dorsey has published some careful notes on this as on other matters connected with the tribes of the Dakota stock, and Catlin has also given descriptions. The decorations were often the result of a vision. If a man had a vision of the aurora he depicted it on his robes and tent, the latter having a band of paint around the bottom, above which was a zigzag border from which, on one side, three stripes were drawn to the top of the tent, four on the other, and one in the rear. If he had a vision of the night or of some other “superterrestrial object, he blackened the upper part of his tent and a small portion on each side of the entrance.” Sometimes a star was also indicated, and night was represented by a black band

above the middle or at the bottom. A tent similar to the Dakota tipi is in wide use among the Amerinds. Morgan states that the Dakotas were living in bark-covered houses when first discovered, in villages, in the present state of Minnesota, and that when they were driven "upon the plains by an advancing white population, but after they had become possessed of horses, they invented a skin tent eminently adapted to their present nomadic condition. It is superior to any other in use among the American aborigines from its roominess, its portable character, and the facility with which it can be erected and struck."[176] While this is probably accurate as concerns the Dakotas, it is likely that other tribes invented a similar tent for themselves, before the appearance of the Dakotas on the plains.[177] Three tipis among the Omahas were sacred, and sheltered three sacred objects, the Sacred Pole, the Sacred White Buffalo-Cow Skin, and the Sacred Bag. These are all now in the Peabody Museum at Cambridge. They were built like the common tipi.



A SEMINOLE DWELLING

The wigwam of the Algonquins was built in two general ways, using bark or mats for covering. One form is made by planting elastic poles in the ground and bringing their tops together, and binding the whole with horizontal poles. It is unlike the tipi, because it is not portable, because the poles are flexible, and because the sides curve out from bottom to top instead of being straight lines. It is covered with birchbark. It is from ten to sixteen feet in diameter on the ground, and from six to ten feet high. The fire was built, as in the tipi, in the middle of the floor in a slight depression, and the usual outlet for smoke was left at the top. “Such a lodge,” says Morgan, “would accommodate, in the aboriginal plan of living, two and sometimes three married pairs with their children.”[178] The Menominee-Algonquin form of wigwam was made by planting in the ground about three feet apart, approximating the form of an ellipse, strong saplings some two inches in diameter, leaving at each end an opening for a doorway. The poles are then bent over toward each other and tied in an arch with strips of bark. Horizontal poles are tied on to the upright ones for stiffening, and the frame is then covered with bark or mats overlapping each other like shingles. The usual smoke outlet is left in the top. A mat curtain takes the place of a door. There were seldom, or never, regular doors in any Amerind houses on the continent before the Discovery, the opening being closed by curtains or mats. Another Menominee shelter, described by Hoffman, was made by “putting five or six saplings on each side of a parallelogram; the ends are left open, and the top of each sapling on a given side is then bound down over its opposite fellow to form a roof somewhat resembling a wagon-top. Horizontal saplings are then bound around the

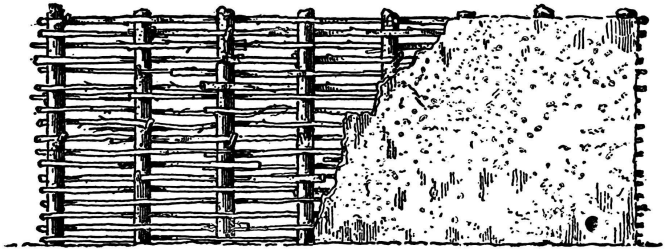
framework to make the structure secure, and over all are laid, longitudinally, a series of long strips of pine bark the upper pieces overlapping those below, while a large piece is placed over the highest part of the roof, which thus sheds the rain or melting snow.... The bedding is spread on the ground and usually covers the entire floor."[179]

The eastern portion of the continent below Labrador, being well-forested, the Amerind houses there appear to have been entirely of wood, or sometimes of wood and mud combined. For this reason nothing of any of them, except occasional earth rings, is to be found and, so far as remains of houses are concerned, our wonderful, surpassing Moundbuilders appear to have had no houses. Turning to other Amerinds, however, who occupied the country when the whites arrived, we glean a fair idea of what the houses of the Mississippi valley may have been at their best. They varied in design in the same locality, of course, according to the tribe, in the same way that I have mentioned that in the South-west we find to-day Amerinds living in the most primitive form of dwelling not many miles away from others living in high types.

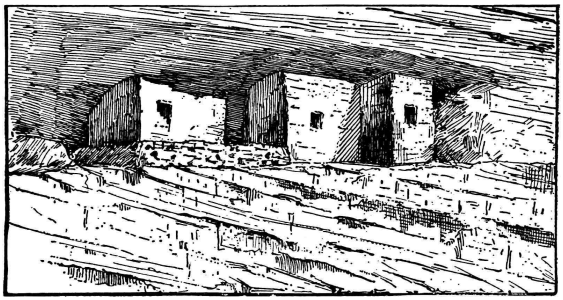
Some of the Mississippi valley houses were doubtless excellent structures though built of wood, or of wattling plastered with mud. Many of the mounds, squares, and circles were connected with buildings, generally forming the foundations for dwellings or other structures as in other parts of the continent.[180] In other words, they were often platforms for houses. The reasons for building a house on a platform raised above the surrounding lands might be many; one simple one was a desire to keep the floor dry in wet weather. The floor was

earth, and earth on a level during long rains got uncomfortably damp if not wet. It would be natural in building, after such lessons, to elevate the floor of the house, which was done by rearing a platform of earth. This gave good drainage, and besides in a malarial region would be more healthful, and furthermore added to the defensive qualities. The habitations being built upon platforms, it would not do to build sacred structures on low ground. Man seldom looks down upon his spiritual constructions. Hence the higher the sacred building could be placed, the more sacred it seemed, and the huge flat-topped mounds of the Mississippi valley and Mexico were the result. Some of the Florida Amerinds were still living in dwellings reared on platforms of this kind, and so were others in the Southern United States, at the time of the first visits of the whites. The mounds, as a rule, are on the bottom lands along river courses, though in places where there are higher terraces these have frequently been chosen. Thomas quotes the following passage from Garcilasso: “The town and the houses of the cacique Ossachile are like those of other caciques in Florida.... The Indians try to place their villages on elevated sites; but inasmuch as in Florida there are not many sites of this kind where they can conveniently build, they erect elevations themselves in the following manner: They select the spot and carry there a quantity of earth, which they form into a kind of platform two or three pikes in height, the summit of which is large enough to give room for twelve, fifteen, or twenty houses, to lodge the cacique and his attendants. At the foot of this elevation they mark out a square place, according to the size of the village, around which the leading men have their houses.... To ascend the elevation they

have a straight passageway from bottom to top, fifteen or twenty feet wide. Here steps are made by massive beams, and others are planted firmly in the ground to serve as walls. On all other sides of the platform the sides are cut steep."[181] Thomas quotes further from Garcilasso: "The chief, whose name was also Guaxule, came out with five hundred men to meet him and took him in the village (pueblo) in which were three hundred houses, and lodged him in his own. This house stood on a high mound (cerro) similar to others we have already mentioned. Round about was a roadway sufficiently broad for six men to walk abreast."[182] Again he quotes Le Page Du Pratz, who visited the Natchez in 1720: "As I was an intimate friend of the sovereign of the Natchez he showed me their temple, which is about thirty feet square, and stands on an artificial mount about eight feet high, by the side of a small river."[183] There was also still another reason for building on mounds or elevated platforms; the reason, or at least one great reason, why the Mayas and Mexicans built on them, namely the desire to protect the foundations. In Louisiana the Taensas, in the time of La Salle, built of "sun-baked mud mixed with straw, arched over with a dome-shaped roof."[184] Now a structure of this kind if reared on ordinary ground would soon be destroyed by the rains and moisture sapping its foundations, but by placing it on an elevated platform, where its footing would be comparatively dry, it would endure a long time. A sacred house would be likely to be so placed, if not others.



MISSISSIPPI VALLEY METHOD OF USING JACAL CONSTRUCTION, ACCORDING TO THOMAS



CLIFF OUTLOOK, CANYON DEL MUERTO, ARIZONA

Every tribe had some kind of a sacred structure, the Omahas carrying from place to place the three sacred tents referred to. The sacred structures, too, were generally of the same style as the house of the chief. Each village of the Natchez had a house devoted to the dead, besides others dedicated to different sacred objects. The death-house was oval, "having a circumference of one hundred feet—a simple hut without a window, and with a low and narrow opening on the side for the only door."[185] Here were "garnered the choicest fetiches of the tribe, of which some were moulded from clay and baked in the sun. There, too, were gathered the bones of the dead; there an undying fire was kept burning by appointed guardians as if to warm and light and cheer the departed."[185] "Hard by the temple, on an artificial mound of earth, stood the hut of the Great Sun; around it were grouped the cabins

of the tribe."[185]

It seems unnecessary to give any further space to show that the mounds that have aroused so much discussion and romantic writing were, many of them, the foundations for various structures reared by Amerinds as we know them.

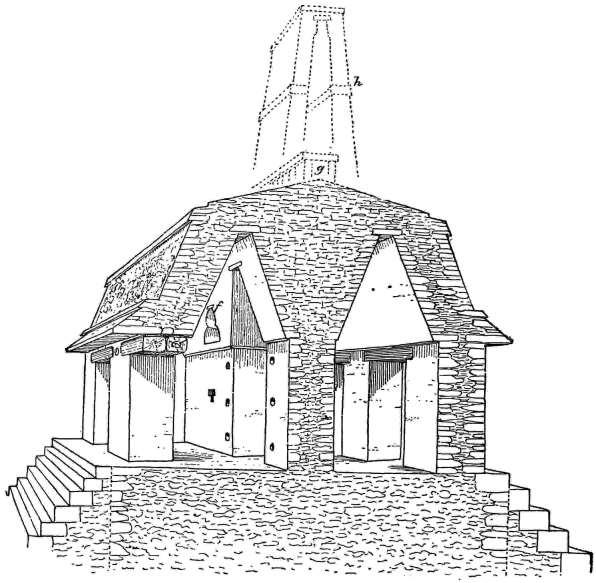
Morgan advanced a theory that the hollow square earthworks were the foundations for long buildings, at one and the same time dwellings and a part of the defences, the interior area being used for a work place, children's playground, etc. Many Algonquin houses were made of a parallelogram shape, with straight sides about eight feet high and a rounded roof. These houses were fifty or more feet long, and the matting with which they were covered could be readily removed to let in the sun and air. As a rule the villages were surrounded by palisades. The Iroquois, as well as most other Amerinds, lived in permanent villages, which were at first stockaded. They used three kinds of houses; a triangular lodge made of poles with bark for a covering, used in hunting, and the *ganosote* or smaller bark house constructed in the same way as the third kind, the *hodénosote* or "long-house," which was built to accommodate a number of families. This was sometimes a hundred feet long, and from it came the name *Hodenosaunee* by which the great League of the Five (Six) Nations was known to the world and to themselves. It was made by planting poles in the ground and binding others across them to make a strong frame of the shape of a parallelogram, upon which a roof of triangular pattern was built out of poles covered with bark. Sometimes the roof was round like that of many Algonquin tribes, and that of the ganosote was very frequently round. The height

of the sides was about ten feet. The ganosote was about fifteen by twenty feet and fifteen feet high, with inside a kind of double berth built against the longer walls like the berths in a ship. It would accommodate eight persons. The entrance was closed by skins or by bark hung on wooden hinges. The covering was bark held in place by an outer set of poles tied through to the inside ones. The long-house was divided into a number of chambers six or eight feet wide with a passageway through all from end to end where the doors were. “Between each four apartments, two on a side, was a fire-pit in the center of the hall, used in common by their occupants.... Raised bunks were constructed around the walls of each apartment for beds.”[186] These structures constituted the village which was surrounded by a palisade, sometimes a double or triple row. The houses were placed without arrangement; and when the league grew powerful the palisade was dispensed with. The Lenapé “constructed small wattled huts with rounded tops thatched with the leaves of the Indian corn or with sweetflags.... In summer light brush tents took the place of these.”[187]



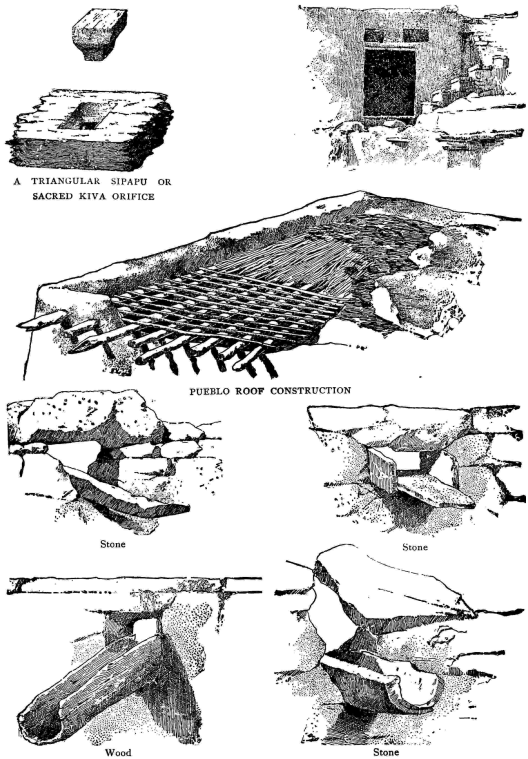
Holmes’s Archæological Studies in Mexico

HALL OF COLUMNS, MITLA
Photograph by A. V. Armour



W. H. Holmes

TRANSVERSE SECTION (SOMEWHAT GENERALISED) SHOWING CONSTRUCTION OF PALENQUE BUILDINGS, YUCATAN
***f*, trefoil opening through medial wall; *g*, *h*, two principal varieties of roof comb**

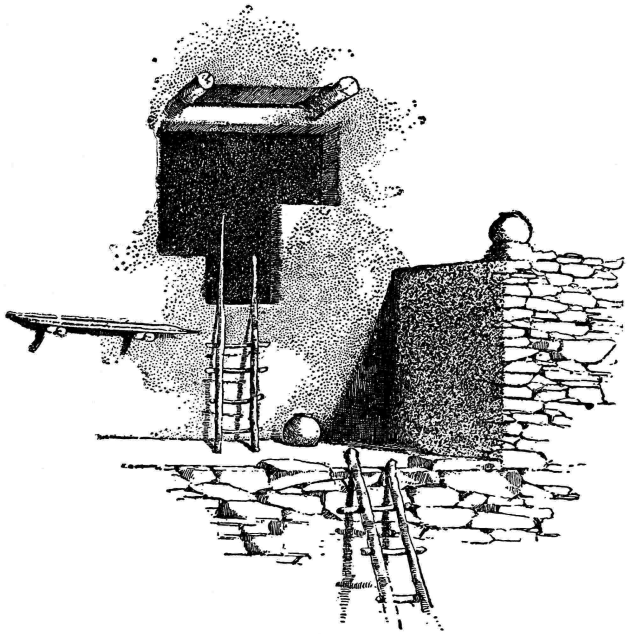


SOME MOKI ROOF DRAINS
SOME DETAILS OF PUEBLO HOUSE ARCHITECTURE

On the North-west coast the native houses are usually built of cedar slabs. These slabs are split out of the wide trees[188] and the walls are obtained by securing them in an upright position to a frame about ten feet high. On this rests the roof of split shakes, bark, or boards, laid on rafters which are supported in the middle by two long, heavy beams, running the entire length of the house, and themselves borne up by four huge posts, often carved with totemic emblems. The general outward appearance of these houses is much like an ordinary low one-story house or barn of our own, except that in the middle of the roof there is a large square hole

for a smoke outlet, the fire being made on a patch of sand or earth that forms a square about nine by ten feet in the middle of the room, the size depending on the dimensions of the house. They are usually about thirty or forty feet square,[189] the interior forming one large room, sometimes having a platform on one or two sides or all the way round about six feet wide and two feet high. This is divided by thin partitions into small compartments, which are covered about six feet above the floor with a ceiling of thin boards. A curtain in front makes a room of it. These houses vary somewhat in the different localities, but the type is about the same from the Puget Sound region to Yakutat Bay. Some of the Sound Amerinds give but one pitch to the roof. Many of the natives now build a house of sawed materials and roof it with shingles so that their modern villages, like the one at Sitka, present outwardly few Amerind signs, as they usually have chimneys, too, instead of smoke holes. Where they have the latter, boards are stuck up above the ridge to form a windbreak, or a more perfect arrangement for preventing back draught is applied in the shape of a large solid shutter so pivoted in the middle line that it can be tilted from one side of the ridge to the other. Among some tribes there are several smoke holes with adjustable boards that can be worked from below with a pole. The entire front gable of a chief's house or an assembly house is often ornamented with a huge totemic design, painted on smooth boards that fill the whole space. In front of the house stood the tall pole bearing the totems of the inmates carved, one above another, with a full relief totem adorning the top. Small houses were built to hold the boxes containing the ashes of the dead, and the roof was sometimes surmounted with a totem carved in wood, or the

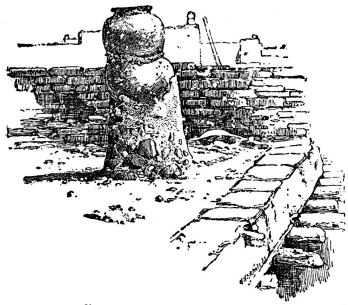
totem was erected on a small pole nearby, or placed under the roof.



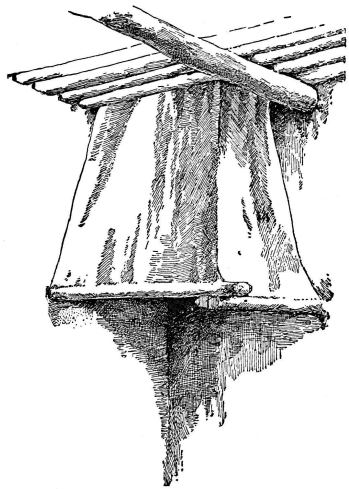
MOKI NOTCHED DOORWAY, SO MADE THAT LARGE BUNDLES COULD BE TAKEN IN
The transom was probably at first a smoke outlet

In all the constructions of the Amerinds of the North-west coast we perceive the powerful influence of surroundings on a primitive people. The region abounds in superb cedars with a grain so fine and straight that the logs can be readily split into slabs a couple of inches thick, that are admirable material for building purposes. Then there are plenty of young straight hemlocks, firs, and cedars for rafters and framework, so that these Amerinds, like those of the cliff region of the South-west, had their building material almost ready made. Being largely fishermen, they were not well supplied with skins, so that it was not easy to make pole lodges covered with them, as

was the case with many Amerinds of the interior, where trees were absent or hard to split and where skins were plenty.



A ZUÑI CHIMNEY, MOKI THE SAME



ONE FORM OF MOKI CHIMNEY HOOD

In California a variety of houses was built, as there are many different stocks and conditions. The Yokuts made them of tule mats in the shape of an “A” tent with a door at the front. A half dozen or more of these were placed in a row and above them a flat sun-shelter of branches laid on a platform of poles

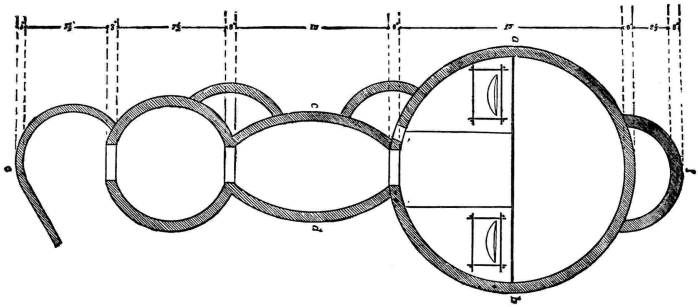
supported by crotched posts set in the ground. Others build a hut of slabs or bark brought to a point and open on one side, like a tipi cut in two. Others again live in wikiups made by covering a square framework with boughs, leaving one side open. When the side of an Amerind hut is left open in this way, the opening always faces the south, except in hot weather, when it generally faces the other way. Another California tribe lives in earth lodges entered from the top through a hole or hatch with steps on the outside. This lodge was made by excavating a couple of feet and putting this earth on the covering framework, for a roof. In the mountains where wood was plenty they frequently used no earth at all, showing how quickly they adapted themselves to circumstances. The Modoc "excavates a circular space from two to four feet deep, then erects over it a rounded structure of poles and puncheons, strongly braced up with timbers, sometimes hewn and squared. The whole is warmly covered with earth, and an aperture left atop, reached by a centre pole. Before the coming of the whites secured them against the constant assaults and incursions of their enemies, their dwellings were slighter, consisting generally of a frame of willow poles, with tule matting overspread."[190] Another tribe of the Pacific Slope, the Makhelchel, build cabins "of slender willow poles set upright in the ground, with others crossing them horizontally, forming a square lattice-work."[191] The Yokaya have a lodge or dwelling composed of a "huge framework of willow poles covered with thatch, and resembling a large flattish haystack." The Karok "excavate a round cellar, four or five feet deep and twelve or fifteen feet in diameter. Over this they build a square cabin of split poles or puncheons, planted erect in the ground and

covered with a flattish puncheon roof. They eat and sleep in the cellar ... and store their supplies on the bank above next to the walls of the cabin."[192] The Maidu make a hut of slabs placed together in something the shape of a tipi, with a low, square projection for an entrance.

Passing northward to the Aleuts, we find "houses built with the floor somewhat below the level of the outside soil, the walls of whale-ribs, sticks of wood, or upright stone walls, covered outside with mats, straw and finally turf.... The roof was formed by arching whale-ribs, or long sticks of driftwood, matted, thatched, and turfed like the sides, with a central aperture. A platform, somewhat raised, around the sides of the house afforded a place for sitting and sleeping. Later each village had a large house or *kashim*, which served as a common work-shop, and a lodging for strangers, as well as for a town-hall for their discussions and festivals.... Still later, in a period not greatly antedating the historic, the Aleuts began to build large communistic dwellings with features peculiar to themselves, without doors, and entered by the hole in the roof, the inmates descending on a notched log placed upright. These large yourts were divided, by partitions of wood, stone, or matting, into small rooms like the state-rooms of a steamer, but without doors; open toward the center of the yourt, and each accommodating one family."[193]

It will be noted that we have again changed materials of construction; and why? Because the Aleutian Islands are devoid of timber, devoid of good building stone that an Amerind could get at, and he resorted therefore to what there was—driftwood, whale-ribs, turf, etc.[194] The house called by the

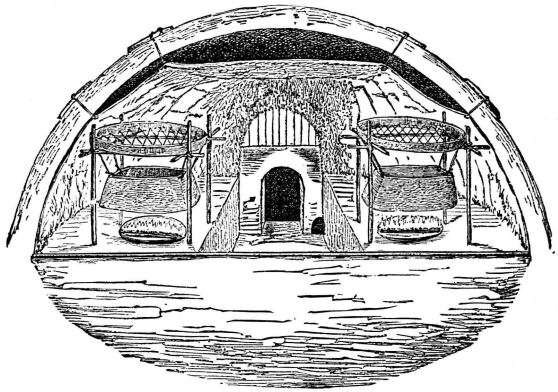
Russians *barabára* seems to have been originally made of turf even to the roof, and I saw examples in the summer of 1899 at Unalaska and on St. Paul Island. The turf or sod was cut into slabs and laid up like stones.



GROUND PLAN OF ESKIMO SNOW IGLU

Continuing northward we reach the vast treeless arctic regions, where cold is the great enemy, and the reader wonders what man can do here in the way of architecture. He has done considerable; amongst other things he devised the only true arch found on the continent, and constructed one of the most admirable and unique dwellings in the world. This he built out of the snow which fell about him and prevented him from securing other material. The invention of the snow house by the Eskimo, or Innuit, as they call themselves, was one of the greatest triumphs over environment man has ever accomplished. I refer, of course, to the perfected snow house, the dome-shaped *iglugeak*, commonly called by us *igloo* or *iglu*. *Iglu* is the Innuit generic term for "house," the distinctive name for snow house being *iglugeak*. This snow house is begun by selecting a suitable deep drift that is compact enough to permit homogeneous blocks to be taken from it, with the snow-knife, which is a bone tool shaped like a short sword. Latterly steel saws are employed when

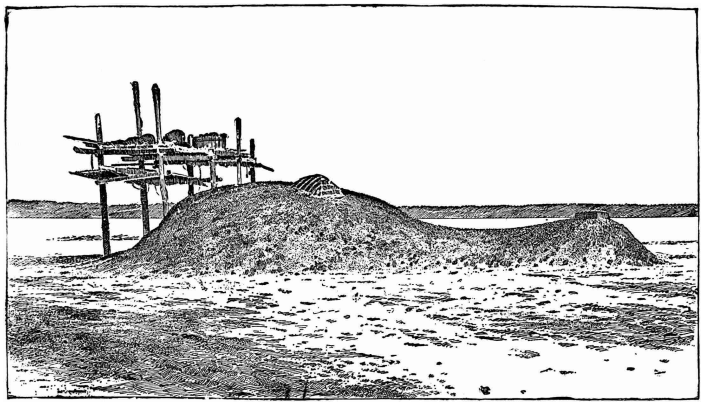
they have them. In the pit formed by removal of blocks of snow the builder works at his walls, the bottom of the excavation finally forming the floor of the house. The first block is bevelled down to a wedge shape with the point toward the beginning, and the worker goes on round his circle, and when he comes again to the wedge his wall rises upon the first portion and continues thus in a spiral fashion to the top, constantly narrowing till at last one block fills the opening. It takes two to adjust this, though one may build a small house successfully to that last point. By building spirally and therefore continuously, there is always support on two sides for the last block laid. The edges are slanted at the same time to bring the tiers gradually toward the centre. Joints and holes are filled with snow, though a small hole is left at the top for ventilation. As the heating of this house is done with lamps there is little smoke. For camping purposes a small snow house is built, seven feet diameter and five feet high, in about two hours. When made for permanent use the house is about twelve feet high and fifteen feet diameter. Plenty of light comes through the snow, but a window of ice or seal intestine is often placed over the entrance, which is reached by a more or less extended passage, with vaults for storage, by the way.



SECTION OF SNOW IGLU

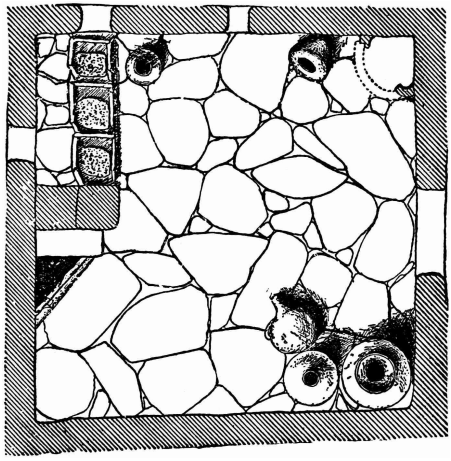
But though this house is so cleverly built, and is warm, and proof against everything but mild weather, the Innuit, if he can, will build a permanent winter house of drift wood, stones, earth, and sod and whale-ribs. These from the outside look like mounds of earth, and as soon as warm weather comes are nothing but wet cellars, which the inhabitants quickly abandon for the time, erecting with their walrus and seal skins a summer tent, called a *tupek* or *topek*. The Point Barrow tupek is something like a tipi, without a smoke hole, as the fire is built outside when they can secure wood to build one. All the Alaska Innuit now use canvas tents of the “wall” pattern, when they can procure them.

The Amerind of the interior of the northland, where timber grows, utilises it and the skins of the animals he kills. The Nenenot about Hudson Bay occupy, all the year round, a tent almost identical with the Dakota tipi.



AN ALASKA ESKIMO WINTER HOUSE, POINT BARROW
Interior and sections p. 221

No construction on the continent shows more skill than the Innuit snow iglu. The winter houses, of snow or other material, are usually occupied by two or more families. Many interiors of snow houses are lined with the summer tent covering to prevent the drip of the walls from falling on the occupants.

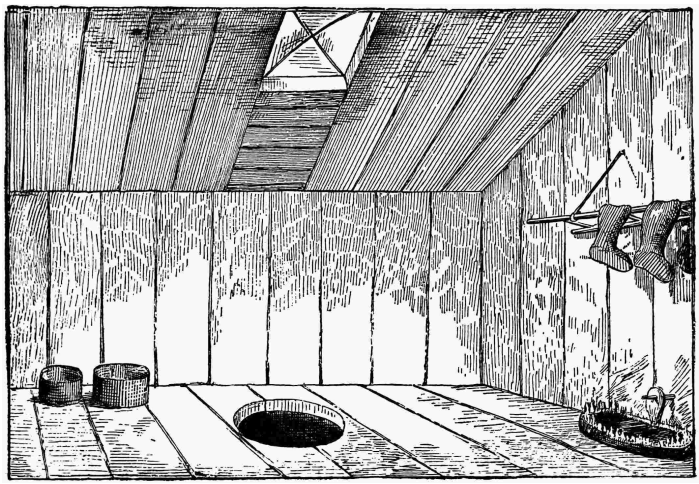


INTERIOR GROUND PLAN OF A MOKI HOUSE

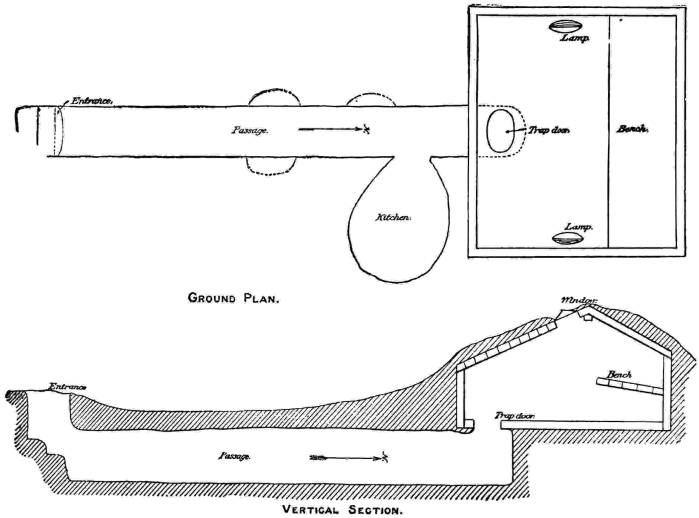
As the polar regions developed the snow-house; forest regions, bark and mat houses; barren plains,

portable tents; so arid regions, where disintegrating cliffs furnished an abundance of flat slabs of stone, evolved stone houses, and broad dry valleys or plains lacking cliffs, timber, or large game, but yielding good clay soil, produced houses of mud or adobe; or, according to conditions, such combinations of these materials as were easiest and most practicable. It is next in order to review the houses of the arid regions constructed of stone, adobe, jacal, cajon, pisé,[195] etc., and the cavate lodges. To do full justice to the subject of houses would require a separate volume, but enough may be given here to present a general view. The occupied villages of the South-western United States are similar to the ruins found throughout that region, and the cliff-dwellings, which some writers would clothe with mystery, as has been mentioned, were no more mysterious than the occupied dwellings of the Moki; or any other Pueblo village, which, fortunately, remains inhabited by the builders.[196] The cliff-dwellings were constructed in cliffs simply because it was expedient to build them there and not because the builders were a race apart from other Amerinds. The canyons where the cliff-dwellings occur have bottom lands that are fertile and easily irrigated, both by stream water, and after the Pueblo fashion, by guiding shower waters with hoes amongst the corn. This in itself was a sufficient object for building in the canyons, and the huge, natural conchoidal alcoves that occur in the faces of the prevailing formation were attractive places to build in for several reasons, one of which may have been protection from assault and the weather, and another the frequent presence of springs at the back of these cavities. These springs have almost vanished, in many cases have entirely disappeared, owing to slightly drier conditions now

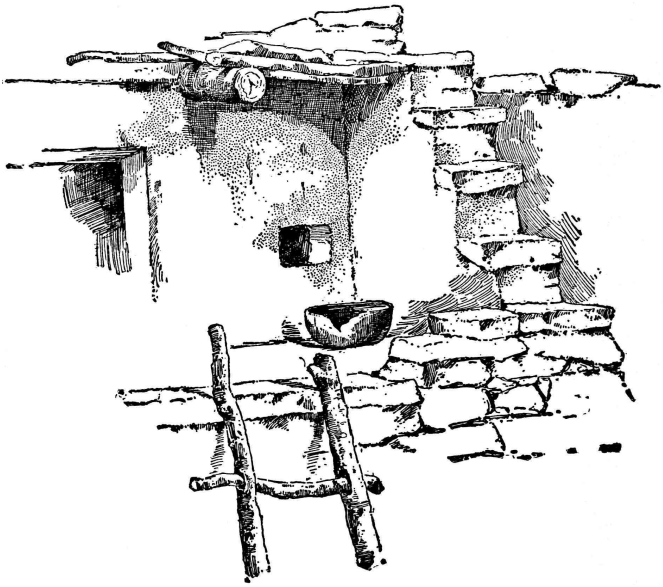
prevailing. But I have frequently noticed at the back part of many of the cavities that had no ruins, or few ruins, to cover it up, a moisture that might at times increase to a dripping, or even flowing, that would furnish enough water for the daily supply of a considerable Amerind village. The construction is the same as other Pueblo houses of stone.



INTERIOR OF WOOD AND EARTH IGLU



AN ALASKA ESKIMO WINTER HOUSE OF WOOD AND EARTH, POINT BARROW



STONE STEPS AT ORAIBI

The inhabited pueblos, like the ruins, usually consist of a number of rooms built adjoining or on

top of each other, like a lot of square boxes placed in rows or in a pyramidal pile, or like a series of steps, with the total height at the back often straight down. One or two single-room houses are first built, and then additions are made from time to time till the pile grows to a considerable height; three or four stories.[197] Groups of these groups built near each other form courts between. The lower tier of rooms, in olden times, was not entered from the ground, but from the roof through a hatchway, a ladder leading up on the outside and down on the inside. The upper rooms, or houses, were entered from the roofs of the lower ones; that is, the roofs of the lower rooms formed the floors of the upper ones, and also balconies in front of the rooms. I occupied for a time one of these upper rooms in Tewa, on the "East Mesa" at the Moki towns, and I found the roof in front of my door a delightful place, commanding a view of the whole mesa and a hundred miles beyond. I could also reach the top of my house easily, by a sort of stairway formed on the edge of the prolonged wall that separated me from my neighbour, and as this was the summit of the village my view was superb. Such stairways are common in all the villages. The ladders by which the various roofs are reached are now much like our own, but rudely made, and the upper ends are often very long, extending in many cases far above the house-top. The walls, about a foot thick, are of stone slabs laid in adobe mortar, and are generally built up by the women, who take their own time to the work, adding a few stones whenever they feel like it. Beams of small tree-trunks, six to eight inches in diameter, form the basis of the flat roof.[198] They are laid across the top of the walls and the ends, if too long, usually allowed to project beyond. These are covered

with smaller poles laid about a foot apart, and on these are spread slender willows or reeds, with a layer of grass or twigs next, on which a layer of adobe mortar is laid and earth trodden down on top till it is firm, when a finish is made with another coat of adobe mortar. A slight pitch is given to the roof. No plumb-line, level, or square was used by the Amerinds anywhere on the continent so far as is now known. Sometimes the floors are paved with irregular flat sandstone slabs, but in most houses the floor is formed by a coat of adobe mortar which is patched and renewed as needed. Moccasined feet are not hard on such a surface, but my heavy soled shoes were the despair of the owner of my habitation. The hand is used as a trowel. The chimney is usually at one corner, and did not exist in America previous to the sixteenth century. A hood is built down from the roof to within about three or four feet of the floor, to catch the smoke, and outside the chimney is built up about three feet, sometimes with stones, but more frequently with large earthen pots with the bottoms knocked out. The hood is formed of sticks plastered with adobe mortar. Doorways were formerly of the notched variety[199] closed by a curtain, and the hatchways were closed by a mat of reeds. In later times the doorways have become like our own, and doors, too, have been made out of sawed boards. My door at Tewa was hung on hinges and had a latch and string. Glazed windows have also been adopted in many houses. The Rio Grande pueblos are built of adobe bricks, and so, largely, is Zuñi, but there is little adobe in the Moki towns, except in the form of plaster and mortar. The Rio Grande pueblos were largely constructed of adobe when first visited in 1540. The Pueblo Amerind frequently abandoned his village for one cause or another and built a new one

elsewhere, so while his village may be called a permanent one it was not much more so than villages of the Algonquins and Iroquois.

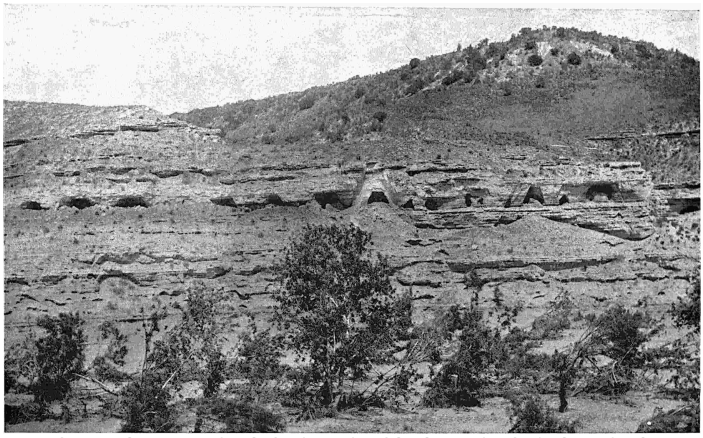


CLIFF-DWELLING, EASTERN COVE OF MUMMY CAVE, CANYON DE CHELLY, ARIZONA

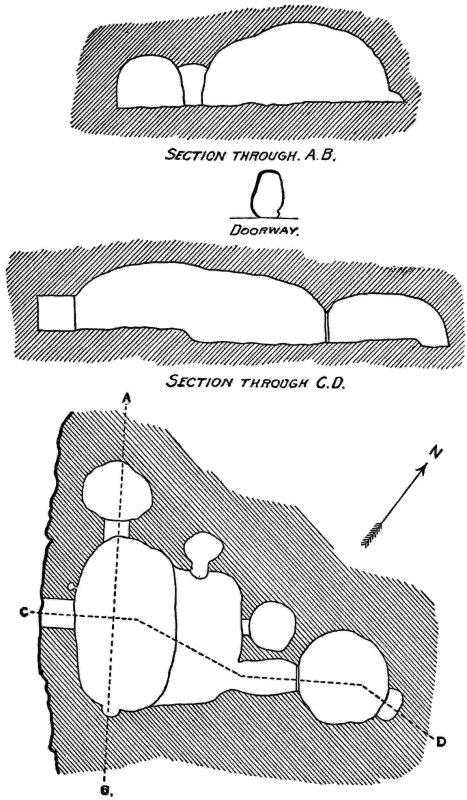


HOUSES IN WALPI, ONE OF THE MOKI TOWNS, ARIZONA

In this are well seen the plastered and unplastered walls of stone, the ladders of ascent, the "end wall" steps, the notched doorway, with transom, the projecting roof beams, a rabbit-skin robe hanging on the wall above the right-hand ladder, and also on the left the entrance to a passageway through to another court



GENERAL VIEW OF A GROUP OF CAVATE LODGES, ARIZONA



PLAN AND SECTIONS OF A CAVATE LODGE

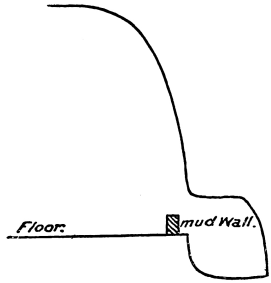


DIAGRAM SHOWING POCKET AT BACK OF SOME CAVATE LODGES

It was probably a receptacle for water which dripped slowly

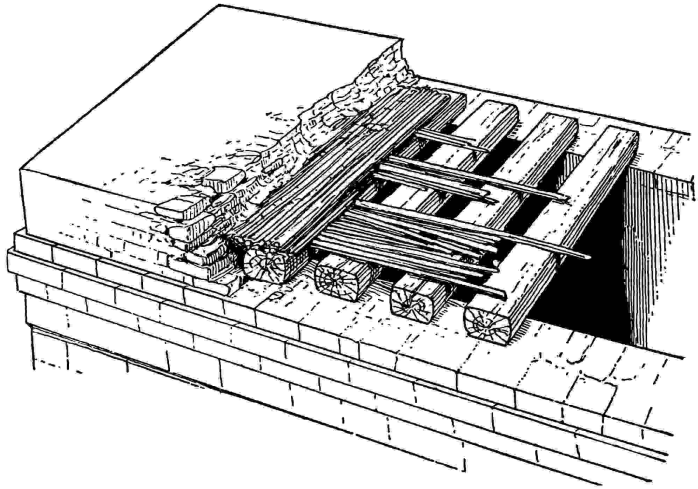
from the rock in wet seasons

Besides houses, some of the Amerinds of the Southwest dwelt in shelters excavated wholly or in part in the face of a cliff or mountain, or hill. There are four localities where these cavate lodges occur in numbers, the northern Rio Grande valley, the San Juan River valley, the San Francisco mountain region, and the Rio Verde valley in Arizona. There are in these places thousands of cavate lodges. They average in size two or three rooms, sometimes communicating by a ledge, sometimes, often, in fact, with excavated connections. Some of the Verde group[200] are cut back a long distance into the rock —forty or fifty feet. The rooms are both oblong and circular, about seven feet high and ten by seventeen feet in size, or eight or ten feet diameter, according to the shape. There were no chimneys, the fire-pits being near the entrances. Nor were there any windows, the doorway being the only opening to the outside. Floors were levelled by filling depressions with adobe clay and low ridges were built up of the same material, probably to keep the inmates off the bottom, which must have sometimes been damp. Poles or willows laid across the ridges with skins on them would have made a flooring. Depressions at the back walls appear to have been made to hold water, and doubtless at times there was a “seepage” of considerable amount, as I have suggested regarding the open conchoidal caves occupied by the Cliff-dwellers. What appear to be stepping-stones are found in some entrances, as if water at times flowed out. The Verde group are in a soft grey sandstone, the Rio Grande in tufa, the San Francisco in cinder hills. These cavate dwellings are simply another form of Amerind residence due to necessity or expedience.

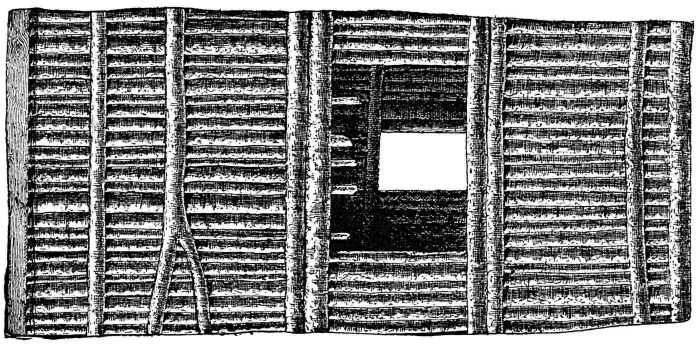
[201] In other places there are some that were undoubtedly merely farming outlooks, occupied only during the crop season, just as there are cliff houses for this purpose, and also houses erected singly in open valleys. But many cavate lodges were actual residences for a period of years, owing to circumstances of one kind or another. The Cliff-dwellers may still be found among the Tarahumaris of northern Mexico. Schwatka describes some who "had walled up the outward face of a cave nearly to the top, leaving the latter for ventilation." Many small cliff-dwellings in other places were so made to allow the smoke to escape. That is, the wall along the outer edge of the cavity was not carried quite up to the rock above, so that the smoke could drift out. There was, therefore, no roof over the dwelling, but it was sheltered by the overhanging rock. Many more examples of this adaptation of the dwelling to circumstances might be added.

There are ruins scattered all over the South-west, many of which were built by the same set of Amerinds, and do not represent a vanished population. Still, I believe that the population was at one time much greater than it was when our acquaintance with it began. Internecine wars resulting from a diminution of water-supply; diseases introduced by the whites; and also the attacks and absorption of tribes by the wilder Amerinds, being some of the causes of the diminution. It would not be possible to describe even all the prominent ruins here, but I will mention several. Beginning easterly of the Rio Grande, we find the Pecos Ruins first of importance. There are also remains of a large adobe Catholic church and a convent here, not finally and fully abandoned till about 1840. The ruins consist of two chief buildings on a low table, surrounded by an

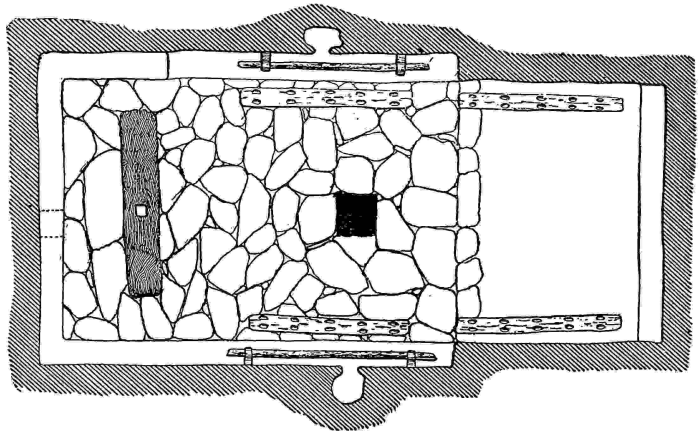
artificial wall. The buildings were in the form of rectangles, with courts within, one 55 by 440 feet, and the other 170 by 350 feet. In places, they were three or four stories high, terraced, Pueblo fashion. The construction was slightly different from the ordinary, as the upper floor and roof beams rested mainly on heavy upright posts set into the walls, and not directly on the walls themselves. The whole framework was thus independent of the enclosing walls, very much as our modern steel frame buildings are. The walls were of sandstone slabs, and were from one to two feet thick. Another group of important ruins, and about the finest specimens of the stone buildings of the ancient Pueblos, is that of the Chaco, in north-western New Mexico.[202] There are eleven chief ruins, and many smaller ones. The principal ruins were once houses three, four, or perhaps five stories high, all built of sandstone slabs and blocks obtained from the débris of the cliffs. Some of the walls are still standing to the height of thirty or forty feet. All are not uniform in the way the stones are laid, the variation being due to building at different times, and to a variation of the available supply of slabs. The stones were usually laid so closely, and so carefully chinked with spalls, that the outside of the walls resembles a smooth mosaic; though adobe mortar and rubble were freely used in the interior. Lintels, as was generally the case throughout America, were of wood. The date of the abandonment of these buildings is not known. They were first mentioned by Gregg, in 1844.[203]



W. H. Holmes
THEORETIC ROOF CONSTRUCTION OF MITLA

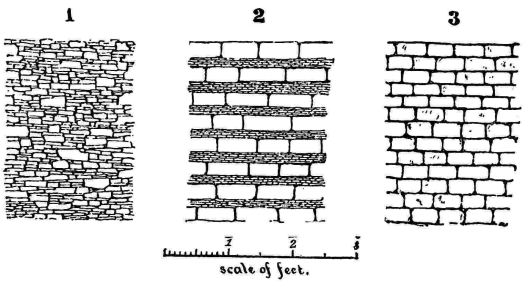


CEILING OR ROOF PLAN

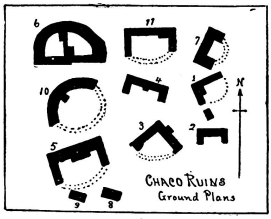


GROUND PLAN OF A KIVA AND CEILING PLAN OF ANOTHER

The entrance is by ladder through the hole in the ceiling, which is also the smoke outlet. The floor is paved with slabs of stone, and is about 12 inches higher at the right-hand end. There are places on each side for the looms, blankets being woven in the kivas. The fireplace is the black square. At the left is the plank containing the sacred orifice called the sipapu. The foot of the ladder rests on the edge of the raised portion of the floor

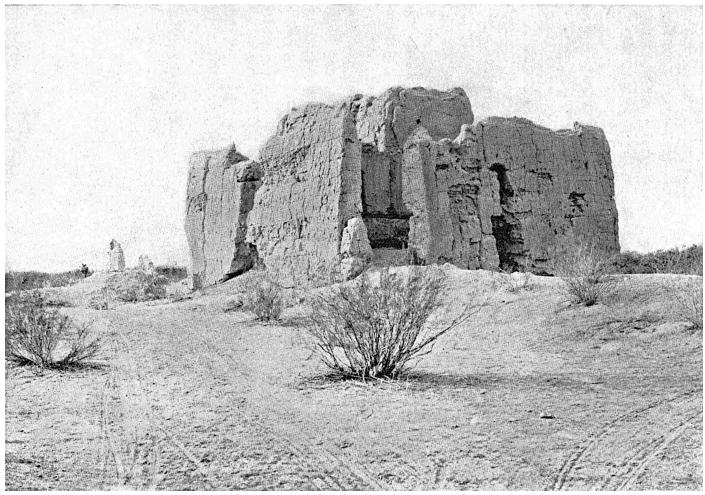


CHACO RUINS MASONRY
2 and 3 not found in modern Pueblo architecture



From Hayden *Report*

There were many round towers of stone in the South-west, also the work of the Pueblos. Some stand alone but most of them are near other ruins. Often they were built with two or three concentric walls from two to five feet apart. A double-walled tower on the Mancos had an outer diameter of forty-three feet. Some of them may have been watch-towers, but those connected with other buildings were perhaps religious structures, or were used somewhat as the kiva[204] is to-day. The kiva is a room now usually square, in part, or wholly, below the general surface of the locality, used as a kind of club-house, council-house, lounging place, and meeting place for members of the society to which it belongs; and also a lodging place for the men; women are generally excluded. In Zuñi, the kivas are rooms on the ground floor. Many ancient kivas were round.



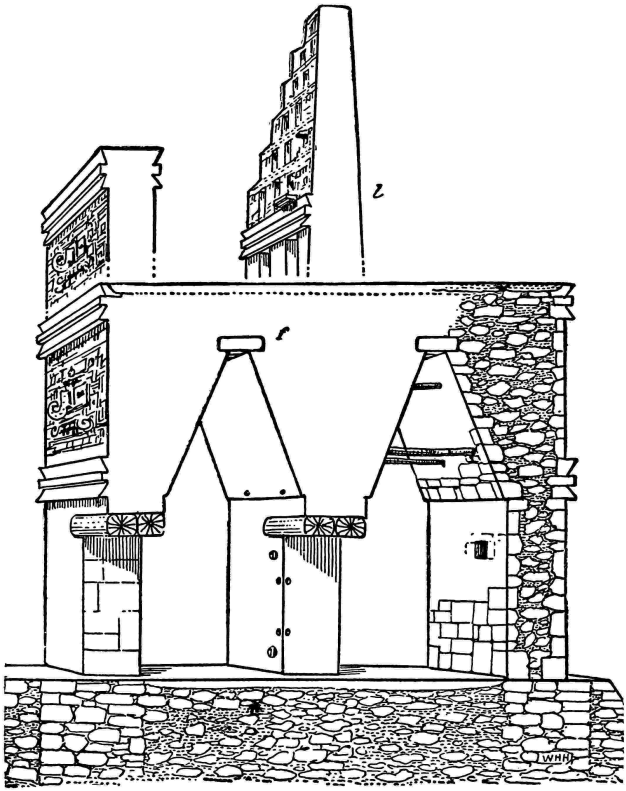
RUIN CALLED CASA GRANDE, ARIZONA

Adobe brick and adobe clay in various forms were largely employed by the South-western and Mexican Amerinds, and there are evidences that some tribes

in the Mississippi valley also used it. In the Rio Grande valley the adobe is made into large bricks, sun-dried and laid up with a mortar of the same material. Otherwise the villages are much the same as those described. One of the best modern examples of the adobe construction is the village of Taos in north-eastern New Mexico. (See illustration page 3.) Another method of employing adobe is seen in the famous ruin called *Casa Grande*, near Florence, Arizona, which our government recently repaired so that it will endure for a considerable time. This was made by the cajon method; that is, the adobe mud was rammed into large chests or boxes of wicker, without top or bottom, and when the material was sufficiently dried to hold its shape the frame was removed and the operation repeated till the wall was finished. The ruin referred to is only one of a number that were still standing in an area of about sixty-five acres in 1744, when Father Sedelmair saw them. He described the present ruin as having four stories, but only three are now distinguishable at the highest part. Its age is unknown. Its builders are supposed to have been the ancestors of the present Pimas, though probably there was considerable difference in the matter of culture. Father Kino, in 1694, was the first European to see the place and it was a ruin then. It was doubtless a communal dwelling like all the other large structures of the Amerinds of this region. Its size on the ground is forty-three by fifty-nine feet. Partitions three or four feet thick divide the interior into five rooms, the middle one having higher walls than the rest. The adobe blocks are two feet high, three to five long, and three or four across, and are almost as hard as sandstone while dry. There may have been upper stories of plastered wattled posts. Another famous ruin similar to this is the *Casas*

Grandes in Chihuahua, Mexico. It is built in much the same way as *Casa Grande*, and there are more buildings there standing. Probably there were at one time a great many structures of this kind in that region, and there may be others still standing in less explored parts. In the Salt River valley many of the buildings were of a somewhat different type again, as concerns their wall construction.[205] The Hemenway Expedition excavated a great many sites and found that the walls were often adobe rammed in between two series of posts wattled with reeds and cross-braced with sticks, the outer part of the wattled frames being plastered with adobe mortar. The thinner walls were constructed with only one line of wattled posts plastered on both sides, after the manner of the Mexican construction known as jacal, which is a set of poles fixed in the ground and then plastered on one or both sides with mud. The upper stories of some of the Rio Grande structures in the early times were made of wood probably plastered this way, which explains why in the southern part of New Mexico there are not now found higher standing walls of ruins or evidences of several stories.[206] Examples also have been seen in South-western Colorado, where a kind of wicker-work was built on the top of a wall and plastered on both sides. In the Salt River ruins the existence of the wood-work was indicated by the cavities left by its decay. There were also other structures built without the wattled frames. The cajon and pisé construction are very much alike, one being a Spanish and the other a French term, except that any pounded or rammed earth construction might be pisé, while the cajon is distinctly made by ramming earth into a box.[207] Therefore the *Casa Grande* would be a clear example of cajon, while the Salt River construction of adobe

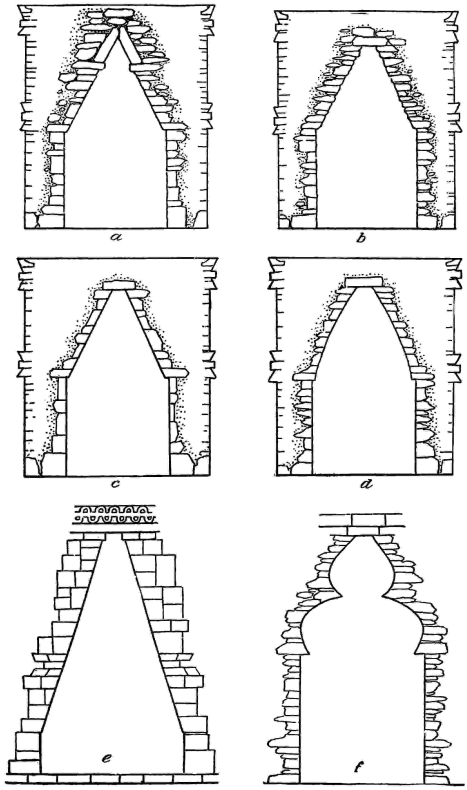
rammed between the wattled frames would be pisé; and the plastered wicker-work would be jacal. The pisé and cajon method is very old all over the world. It is still to be found in France and England. In France the pisé box is about three yards long, one yard high, and about half a yard wide. The readiness with which the Amerind took advantage of his resources in the architectural line is again apparent in these great adobe structures of the Amerinds of northern Mexico and the South-western United States. It is not sensible, therefore, when some style of construction is discovered differing from that which we have been accustomed to see, to ascribe it to some mysterious race.



W. H. Holmes

TRANSVERSE SECTION OF AN ORDINARY YUCATEC BUILDING

***f*, capstones of corbel vault; *l*, roof crest or comb. Such a building stood on the top of a mound**



W. H. Holmes

FORMS OF THE MAYA CORBEL VAULT

In southern Mexico they erected extensive cities or pueblos because there they were more crowded together than anywhere to the northward, but these cities were essentially the same as the more simple towns in the northern country. At Tlascala “the houses were built, for the most part, of mud or earth; the better sort of stone and lime, or bricks dried in the sun. They were unprovided with doors or windows, but in the apertures for the former hung mats fringed with pieces of copper, or something which by its tinkling sound would give notice of anyone’s entrance. The streets were narrow and

dark."[208] This extract from Prescott might picture a New Mexican pueblo instead of one of the towns encountered by Cortez which have been often so romantically described. The copper on the mats was probably more for Amerind ornament than for the purpose stated by Prescott. While in some respects the Aztec towns may have been more elaborate than the New Mexican towns, there was probably not much difference in their method of construction. "The principal buildings and temples of the city were covered with a hard white stucco which glistened like enamel in the ... morning sun."[209] This was perhaps a wash of gypsiferous clay similar to that used by the Mokis, or it may have been similar to the zahcab of the Mayas, which was a singular and abundant white earth used by them as a stucco. It was found in pockets.



W. H. Holmes

GROUND PLANS OF YUCATEC BUILDINGS
Tablets at x

"The dwellings of the common people were also placed on foundations of stone which rose to the height of a few feet, and were then succeeded by courses of unbaked bricks, crossed occasionally by wooden rafters."[210] These rafters were the projecting ends of the poles, as in the Pueblo country. The adobe houses in Mexico are now often built on stone foundations, for it is the foundation that is sapped and undermined by the rains. The upper walls of adobe stand well in a climate of that sort. Prescott says of the houses of the "dignitaries" and of the "principal nobles" that "They were low, indeed; seldom of more than one floor, never

exceeding two. But they were spread over a wide extent of ground; were arranged in a quadrangular form, with a court in the centre,"[211] all of which sounds suspiciously like a communal dwelling, as Morgan maintains the Aztec houses were. The Aztecs were crowded around the lake of Mexico, and also built out over the water on piles. Houses raised above the water or ground were nothing unusual in America. Some of the North-west coast Amerinds built dwellings which were "raised and supported near thirty feet from the ground by perpendicular spars of very large size" with "access formed by a long tree in an inclined position from the platform to the ground, with notches cut in it by way of steps about a foot and a half asunder."[212]



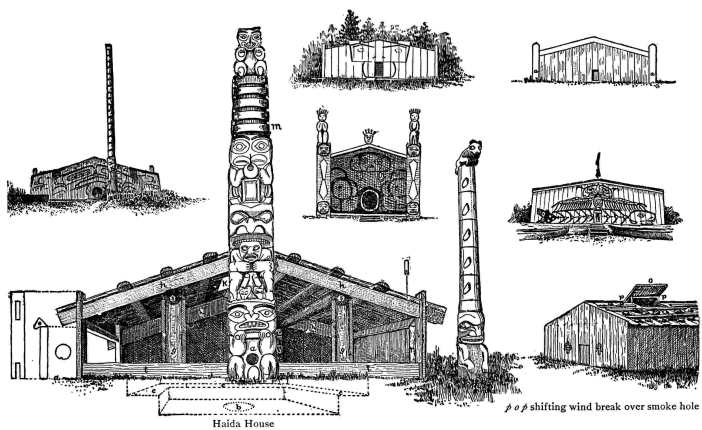
KWAKIUTL HOUSE FRONT
The thunder-bird lifting a whale. The beak was carved and fastened on Construction: wood—split cedar planks, tree trunks, and poles. Site: edge of the sea

So far as the Aztec houses are concerned, "None of the Spanish descriptions," asserts Morgan, "enable us to realise the exact form and structure.... But for the pueblos, occupied or in ruins, in New Mexico, and

the more remarkable pueblos in ruins in Yucatan and Central America, we would know very little concerning the house architecture of the Sedentary Village Indians."[213]

Morgan believes all were joint tenements, but in this he may be mistaken, for the life of the Aztecs seems to have passed to a point somewhat higher than that of the New Mexican Amerinds, and a further development of Aztec life certainly included a further development of their house-life also.

Within a day's journey of the City of Mexico, Saville investigated some interesting ruins of an old "temple" erected, according to a tablet found there, in 1502, the signs on the tablet representing a rabbit and ten dots, or ten *tochtli*, corresponding to this date. It was built of rubble stone covered in many places inside with stone carving that had been painted.[214] There were also ornaments in stucco. The outer walls are nearly six feet thick. It is on the top of a high, cliff-like mountain difficult of access, near the Mexican town of Tepoztlan. Another splendid ruin near this is the Temple of Xochicalco. See illustrations, pages 23 and 31.



NORTH-WEST COAST HOUSES AND TOTEM POLES
End left open to show construction. Dotted lines give section of floor. *m*, totem pole; *c c*, bench; *b*, fireplace; *k*, smoke hole; *g g*, house posts

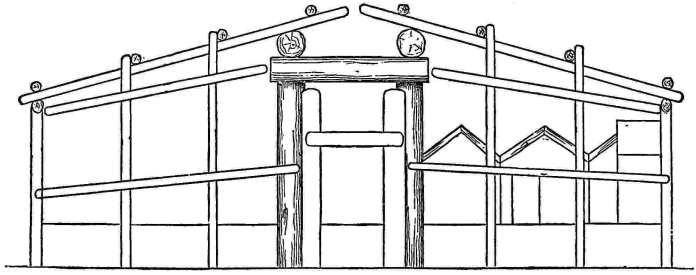
The greatest group of architectural remains on this continent is that of the Maya region, mainly in Yucatan. For a full description of many of these buildings the reader is referred again to the admirable work of Maudsley. The Mayas were the greatest architects as well as the greatest artists and greatest in almost everything of all the Amerinds, and if Goodman is correct in his rendering of some of their chronology they occupied the region more than ten thousand years.[215] Mound-like foundations supported the buildings, which generally rose as from a terrace, though sometimes the mound was very high and very steep, with small space around the building crowning it. At Copan,[216] which was in ruins before the Spaniards arrived, there is a great main terrace from which mounds rise, the latter bearing the buildings. The casing of the mound and the walls of buildings are of nicely dressed oblong stones usually without mortar. The joints were not broken here, nor in other Maya work. The mound slopes were terraced at five-foot intervals and the steps were about five feet high. The so-called “triangular arch” probably existed here as it did at the other Maya ruins. It was made by advancing the courses, several feet above the base of an opening, gradually toward each other till they met above, where a large slab was usually laid across to bind the whole together. The ceilings or roofs of many rooms in Maya ruins were wholly made this way. It has also been called a corbel arch, though it is, in fact, not an arch at all. See illustrations, pages 210, 235, and 237. There was no arch in Amerindian architecture besides the one the Eskimo constructed in his snow hut. The rooms are generally long and narrow in all

the Maya structures and no windows existed. The Maya inability to span wide spaces was the cause of the narrow rooms and buildings. At Uxmal the two main rooms of the so-called Governor's Palace are sixty feet long and only eleven to thirteen feet wide. The walls of all the structures are very thick, though certain walls, as the rear ones, are usually thicker than the others and have no openings, the latter, as a rule, being along one, two, or three sides. This was a probable survival of earlier defensive constructions similar to the communal fortresses of the Puebloan type as particularly exemplified in the ruins of the Chaco in New Mexico, where there were no rear openings. See ground plans, page 232. At Palenque are some fine examples of the Maya construction. The largest is called the palace and is 180 feet wide, 228 feet long, and 25 feet high, with fourteen doorways on the side and eleven at the ends. It was one story in height, as were all Maya buildings. There is a vast amount of carving and stucco modelling around them. One of the most unique constructions is that called the "Temple of the Cross," number one, or two, or three, by different explorers, there being two structures much alike. See note 2, page 184. This is on top of a high mound, and is fifty feet front, thirty-one feet deep, and about forty feet high. The roof was something like our gambrel type, being the same all around without gables, with a level platform about three feet wide along the ridge, from which arose a peculiar stone and stucco, latticed, superstructure in two stories, the first about seven and the second about eight feet high. See illustrations, pages 210 and 235. There was abundant stucco ornamentation over the exterior, and on each side of the entrance was one of the figures referred to in the last chapter.



Holmes's *Archæological Studies in Mexico*

RUIN OF EAST FAÇADE AND IGLESIA, "PALACE" CHICHEN-ITZA, YUCATAN



ELEVATION OF KWAKIUTL HOUSE



VIEW IN THE MOKI TOWN OF MISHONGNAVI, ARIZONA
Construction: stone slabs laid in adobe mortar. Site: barren summit of a mesa. The ladders were pulled up in time of danger

The mortar used is said to have been a cement made of one part slaked lime to two parts of zahcab. This was used by all the ancient Mayas and is used still in that country. It is, however, doubtful if slaked lime was known to the ancients. There is no evidence of it. At Mitla is yet another type of house ascribed to the Zapotecs.[217] It is in the Mexican State of Oaxaca. The human figures and animal carvings and forms seen in the Yucatan ruins are absent. The rooms are the same, long and narrow, with no openings except the doors. One of the most unusual features is a great hall 12 by 121 feet, with six round stone columns standing at intervals of about fifteen feet down the middle. See illustrations, pages 9 and 209. These average about twelve feet high and nine feet in circumference. The walls are forty-eight inches thick, of roughly broken stones laid in courses in plenty of adobe mortar, the outer parts of all the buildings being faced by slabs of stone containing the ornamentation, which is wholly geometrical. Some adobe brick walls are forty-six inches thick. The columns are out of the common because they are single stones, but built up piers are often used in Pueblo architecture, and the North-west coast Amerinds use the column in wood very frequently to support their large longitudinal rafters. One of these which I sketched in an Alaskan house at Cape Fox is given in the illustration, page 162. The roofs at Mitla were wooden beams covered with earth and stone slabs. See illustration, page 230. There are other ruins all through Honduras and Nicaragua and the rest of Central America. Squier says: “In Honduras, as also in San Salvador, I heard of remains and

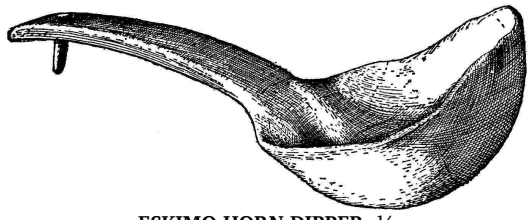
monuments equal to those of Copan in extent and interest."

At the time the Spaniards came into Yucatan the Amerinds, according to Herrera, were dwelling in timber huts thatched with grass or something similar. The dense unexplored forests of the Yucatan region are filled with ruins which have never been seen by white men, at least that is the supposition of archæologists like Saville and Charnay. The Maya house was divided, according to Landa, from side to side by a wall with doors, the back part being sleeping quarters. The front portion was whitewashed or painted in designs and was open the whole length, with low sheltering eaves. In the rear there was a doorway leading from that part. A lengthwise division into two main parts was a characteristic of almost all the Maya buildings now found in ruins. The structures were generally wide and shallow, and subdivided into a great many rooms. It is more in the ornamentation of the buildings and the stone roofs than in anything else that they differ from structures farther north. The interior masonry is frequently a rubble, with the dressed and carved stones on the outside as a facing. Bandelier thinks that some of the stone walls in New Mexico are quite as well constructed as some in Mexico proper. But however this may be, there is nothing north of the City of Mexico that compares in architectural excellence with the Yucatan structures, albeit in some respects there is a strong resemblance between the latter in plan and conception, and the Pecos and other northern ruins.

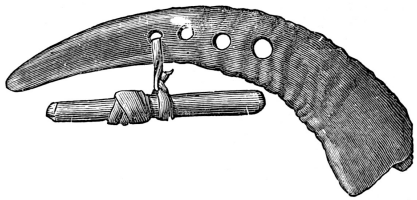
The communal principle of living had much to do almost everywhere with the size and character of the Amerind houses. Situation was determined by

expedience and necessity; material of construction by environment. Throughout the continent the Amerind was a village dweller, and except in the Far North and on the northern Californian and North-west coasts he was generally a tiller of the soil, growing, often in large quantities, maize, beans, squashes, cotton, and some other products according to locality. His large communal buildings were in part fortresses to protect the families against marauding Amerinds of a less prosperous and cultivated type, and against the occupants of other towns, for in general it may be said that there was little political cohesion in the various tribes, though the Aztecs and Iroquois are examples of exceptions that arose from time to time.

There is nothing in any of the remains, so far developed, that indicates foreign influence, prior to the Discovery. Every architectural work on the continent is purely Amerindian or modified by contact with other races subsequent to 1492.



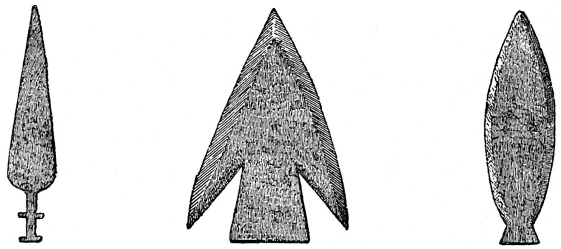
ESKIMO HORN DIPPER, ¼



HORN ARROW STRAIGHTENER, ¼

CHAPTER IX

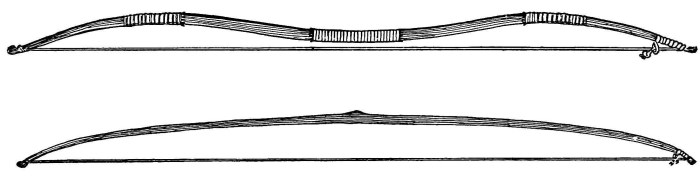
WEAPONS, ARMOUR, IMPLEMENTS, AND TRANSPORTATION



War Arrow War Arrow Hunting Arrow
MODERN IRON ARROW-HEADS OF THE OMAHAS

THE Amerinds were practically all in the so-called Stone Age of culture; that is, they were unacquainted with the *common use* of metals. Some tribes worked silver, gold, and copper, to a limited extent and in an ornamental way, and a high authority asserts that the Eskimo have known iron for nine hundred years. Those Eskimo who came in contact with the Northmen on the North-east coasts very likely saw specimens of manufactured iron, and possessed some, nearly a thousand years ago, but it was a bare acquaintance, and this and the limited working of the other metals do not affect the general statement

that the Amerinds were practically a Stone-Age people. Even the Maya, with all their varied skill and knowledge superior to any other Amerinds, still used stone tools for carving in stone. They had no way of sufficiently hardening the metals they could secure and their stone tools were far more serviceable. So the tools, weapons, and implements throughout the continent were chiefly wood, bone, and stone, with a few exceptions in Mexico, Central America, and the Mississippi valley. In the last region there was some working of copper obtained from the rich deposits of native metal in northern Michigan,[218] but the main thing they could do with it was to beat and grind it into shape with stones. Arrow-heads, spear-heads, chisels, and knife-blades of copper have been found in the Mississippi and Atlantic regions, but there is no certainty that all of them were made by the Amerinds.[219] The Spaniards and other Europeans were speedily engaged in a considerable traffic with the Amerinds in which copper was an important medium of exchange. Large quantities were therefore early brought into the country from Europe, and we do not always know in what form. It is certain that the traders would try to give it the most attractive shape, and if arrow-heads were found to be good, it would not take long to manufacture them. This is not to say that the Amerind could not have made the implements or copper articles thus far found, but only to question whether he did make all of them.

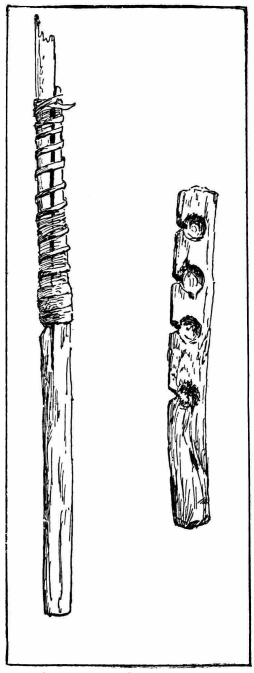


FORMS OF THE BOW

The chief weapon of all Amerinds was the bow and

arrow.[220] The bow was made in a number of ways and of various kinds of wood, and of horn, reinforced as a rule by a backing of sinew. The arrow-shaft was most frequently of service-berry wood when it could be had, and also of reed with a tip of some solid wood. The heads were of chipped stone, or bone, or latterly of bottle-glass, or often, for small-bird shooting, without any head whatever. A few heads were of copper, and in modern times hoop iron is used. Amongst all the Amerind bows that I have ever seen, one made from the horns of a mountain sheep, with a portion of the skull as the central part, was the finest and most graceful. It was exactly the shape of the typical bow wielded by the little god Cupid, and I have always regretted that I did not purchase it at the time, for I have never seen one since. I saw it in southern Utah in 1875.[221]

I have sometimes thought that the bow and arrow were a development from the primitive fire-drill, through the bow-drill and spear. Some day by accident or design perhaps the drill stick sprung from the tightened string, the idea of substituting the spear for the drill stick was suggested, and the greatest invention in its effect on humanity man has yet seen was born.



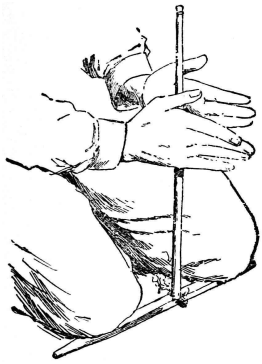
PAI UTE PALM-DRILL

Drawn by the author from a specimen obtained by him in Arizona, 1875. Lower part of shaft of greasewood about 5 in. long and ⅜ in. diameter. Hearth of cedar (Juniper). Upper part of drill shaft is omitted.

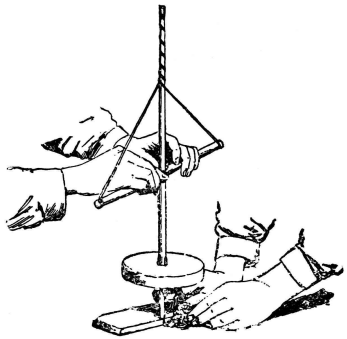
There are three or four forms of fire-drill, but the palm-drill—that is, the kind that was rotated between the palms of the hands—was the earliest, most widespread, and most compact and portable of all. It consisted of a shaft of wood, or reed with a piece of some harder wood attached to it; or, where the hard wood was not long enough, it was spliced on to another piece of wood. The illustration above

shows a drill and hearth I obtained from the Pai Utes of Arizona in 1875. These Amerinds were using such drills for fire-making at that lime. The other portion of the apparatus, the hearth, is made of cedar, or any soft and suitable wood. It has cavities cut into it to receive the rounded, blunt end of the shaft, and on the sides of these cavities a little notch is cut to allow the air to get at the superheated wood dust and to permit the dust to be quickly thrust into the tinder which is placed beside and beneath the hearth. This hearth, which is an inch or so in width and about a quarter of an inch thick, is held securely down by the foot or knee, and the drill stick rapidly revolved back and forth in an upright position, with the lower end in one of the cavities. The revolving motion is secured by the palms of the hands, which are allowed to slide down the shaft to gain downward pressure, each time being brought quickly back to the top for a repetition of the motion, so that it is practically continuous. A pinch of sand is sometimes added to increase the friction and create dust more speedily. The superheated dust, or spark, is skilfully flung into the tinder of moss or rubbed-up bark and a few puffs of breath bring a flame. All the materials are kept very dry, and an expert will secure a fire in a few seconds under favourable conditions.[222] This was the common form of fire-drill throughout the continent. The "*new-fire*" of the Aztecs,[223] produced at the termination of their fifty-two-year cycle, when all fires were permitted to die out, was obtained with a fire-drill similar to the one described. Even when a tribe had better means of obtaining fire, it would preserve the primitive method in its religious ceremonies. Before the invention of the fire-drill it was of the greatest importance to guard and preserve the fire that had perhaps been procured from a great

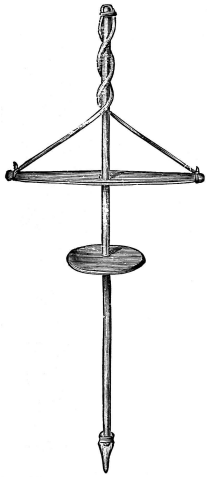
distance or from some forest conflagration which had passed away. Hence it assumed a sacred character, and those who were entrusted with its preservation were high priests. Eternal fires, or undying fires, were the result at first of the necessity of preserving fire, and later, when the friction-drill was discovered, those who possessed the knowledge of it were correspondingly endowed with power over the remainder.



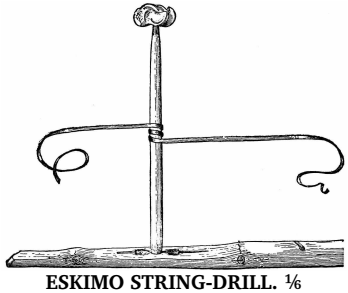
THE PALM-DRILL (FIRE-MAKING)



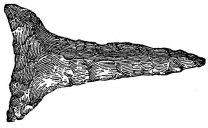
THE PUMP-DRILL (FIRE-MAKING)



PUEBLO PUMP-DRILL. ⅕ (FOR BORING)



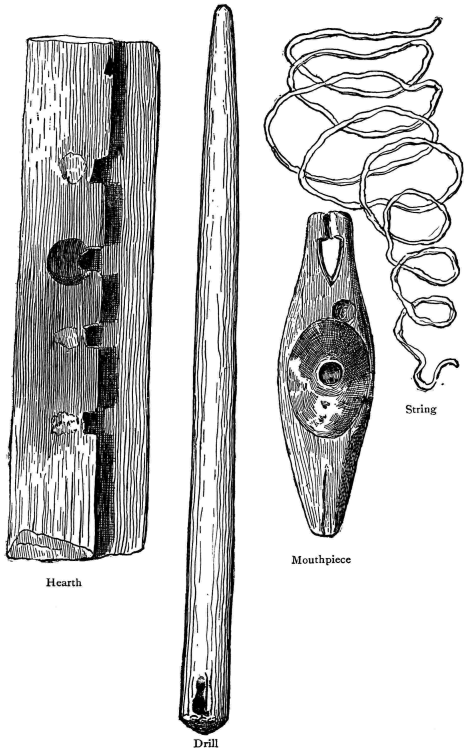
ESKIMO STRING-DRILL. ⅙ (FOR FIRE-MAKING WITH MOUTHPIECE)



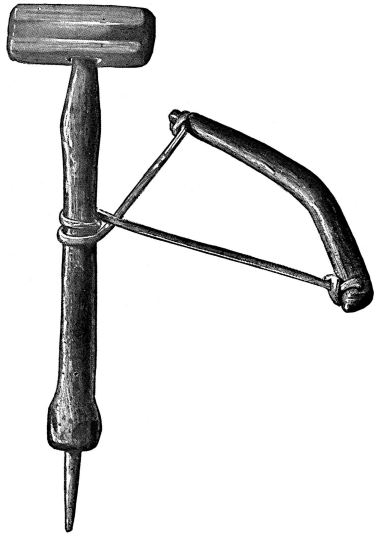
DRILL-POINT OF CHIPPED FLINT

After the palm-drill comes the string-drill, wherein the drill is operated by means of a cord twisted about it, the ends being pulled back and forth, and the top of the stick being held firm by insertion in a socket,

the latter being grasped in one hand or, when there was only one operator, taken in the mouth. The old Eskimo drill is of this description, produced probably because the surroundings compelled swifter and harder revolutions of the stick to obtain the desired results. A further development is the bow-drill, used by the Eskimo and others, where instead of pulling the ends of the string a bent piece of wood, or bow, is attached to them, the movement of which back and forth rotates the stick. This is used with a mouthpiece for a socket. Another form, but one seldom used for fire-getting, is the pump-drill, where the stick connected with the ends of the cord runs across the drill stock, and sometimes has the stock passing through it, the string being so adjusted around the stock that an up-and-down motion of the crossbar imparts a rotary, reciprocating movement to the stock. This is the form used by the Pueblos for stone drilling, etc.[224] The fire-drill entered into the religious ceremonies of most tribes, and, conventionalised in the so-called cross of the Palenque tablet, which is a development, according to Bandelier, of the fire-drill through ornamentation, it puzzled the Europeans, causing them for a time to imagine that Christianity had preceded Columbus to the New World.



SET OF FIRE-MAKING TOOLS, BRISTOL BAY ESKIMO, ALASKA
Showing stepped hearth. Mouthpiece is set with a socket-bearing of black stone

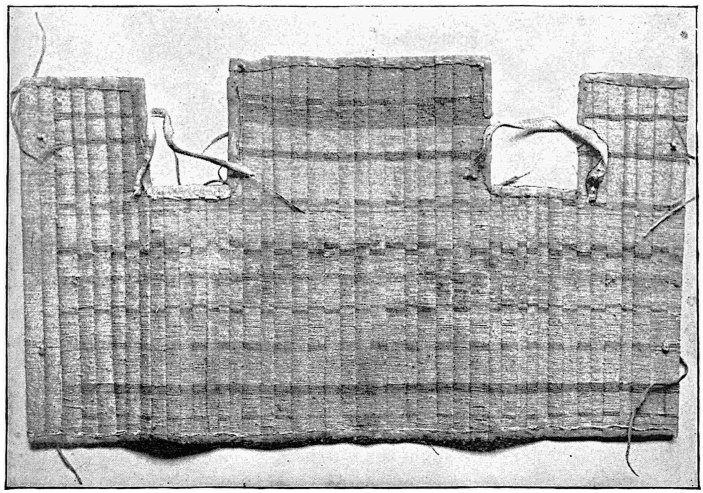


ESKIMO BOW-DRILL

To return to the bow again, the length of it varies in different localities. In a densely wooded country, a long bow would often be in the way, and this and other reasons would make it shorter. The average length is about forty inches. The string is made of sinew, well twisted and, at the ends, braided. Arrows are of different kinds in the same tribe: some blunt or with wood points sharpened for bird shooting, or for other small animals; arrows adapted for deer; for large fowl; and others still for heavy game like bison or bear. The head of the game arrow was set in the plane of the string—that is, the notch was quite or nearly in line with the head, and, when adjusted to the bowstring, stood at a slight angle, the bow always being held diagonally across the shooter's body. The head would thus strike between an animal's ribs. War arrows, on the other hand, had their notches so placed that the head of the arrow went from the bow in a horizontal position, because the ribs of a man lie that way.[225] It will be seen that

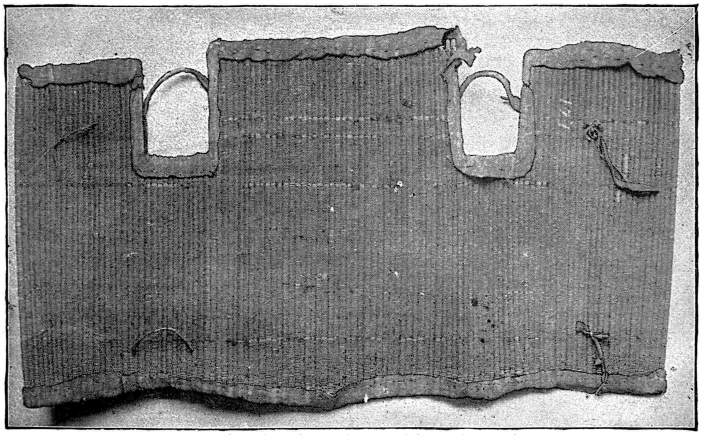
the head was not at right angles to the notch, for in that case it would not have been projected horizontally. The adjustment of the notch to produce the desired position would always be regulated by the habit of holding the bow. Since the rifle came into use, little attention probably has been given to this point. The arrow-shaft is round, about a quarter inch in diameter, and from twenty to thirty inches long, though some are longer.[226] Long ones are usually made of reed with a hardwood tip, upon which the head is mounted; this, as noted above, now being of hoop iron. Stone heads formerly were the chief method of tipping the shaft. In 1875 I purchased a number of these from an old arrow-maker of the Pai Ute tribe. The other end of the shaft is feathered. This is done by attaching split feathers to it with the web cut narrow, for the purpose of giving it guidance. This feathering is a distinguishing feature, and an expert can place the maker of an arrow by the style of feathering. Feathers of birds of prey are almost invariably employed. The number is sometimes two, but generally three. They are attached by strands of moist sinew wound around the ends and when the sinew is dry it becomes a smooth firm band. Three zigzag grooves are scratched down the shaft, some say not, as popularly believed, for the purpose of aiding the flow of blood, but because this is the lightning symbol, and is intended to endow the arrow with speed and certainty. But Dorsey says the Omahas told him their object was to increase flow of blood from the wound. Poisoned arrows were made by dipping the points into rotting liver or rattlesnake venom, etc. These were used for war. The arrow-shaft when first made is by no means always straight, but the Amerind invented a piece of horn or stone with perforations

through which the heated shaft is drawn till it is straight. See illustration at head of this chapter. Quivers are all very similar in plan also, usually comprising a case for the bow, one for the arrows, and in some tribes a pouch containing arrow-making tools. The Eskimo make their quivers of sealskin, other tribes use cat, deer, panther, otter, etc. The spear doubtless preceded the bow and arrow. It is little used by the interior tribes, but in the form of the harpoon, as well as the regular spear form, is common among the Eskimo and other coast Amerinds.[227]



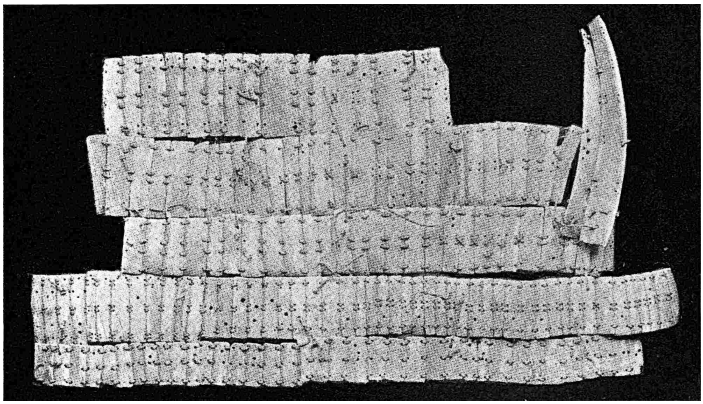
MODERN ROD ARMOUR OF THE KLAMATHS, OREGON

Made up of 44 oval rods of pine wood. The cord is of native hemp and cords made of sisal, the latter probably derived from ropes of white make. Cords are coloured red and yellow. Bound with buckskin painted red; shoulder-straps of buckskin; tying straps at the sides. Width, 38 in.; height, 21 in.



HUPA ROD ARMOUR, CALIFORNIA

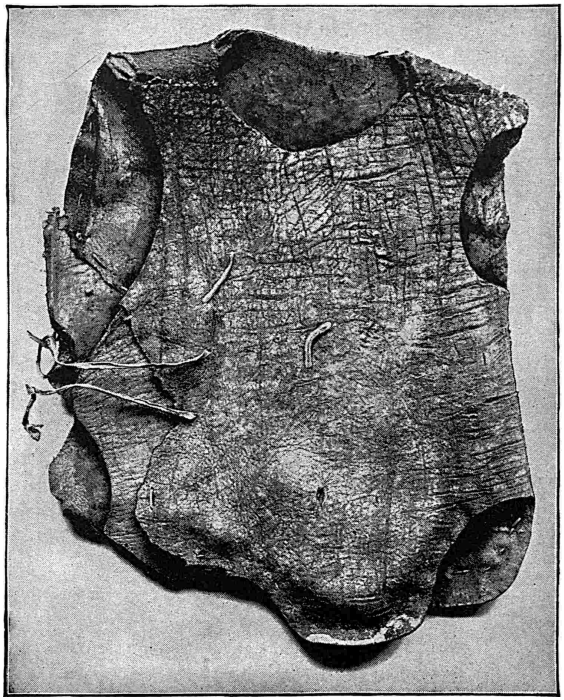
"Made of 118 peeled rods, woven together with native twine, bound with buckskin on upper and lower edges and arm-holes. Shoulder-straps of leather; six horizontal stripes of red cord cross the front. The red lines denote the number of enemies slain or captives taken; also the rank of the wearer. This class of armour was in common use among the Natanos and Kennucks before the introduction of firearms; but it is now obsolete, nearly." Width, 41 in.; height, 21 in.



ESKIMO PLATE ARMOUR, DIOMEDE ISLAND, BERING STRAIT

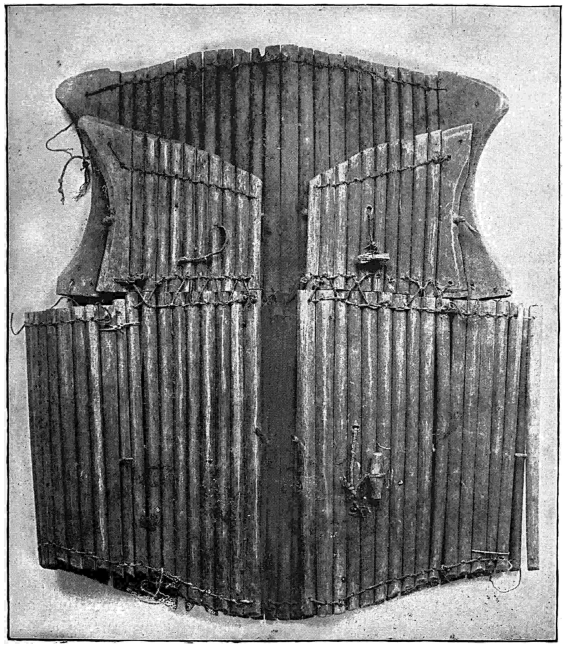
"Made of five imbricating rows of plates of walrus ivory of unequal size in the different rows, pierced with from 6 to 13 holes, lashed with sealskin thongs." 164 plates in all. In form, lashing and adjustment of plates it is identical with certain types of Japanese armour. Width, extended, 49 in.; height, 24 in.

In armour, the Amerind was inventive, as in everything else, and he devised some excellent means for defence for the body[228]; and borrowed one form, according to Hough, from Asia. His shields were made of wood, basketry, cotton, and rawhide, and were usually circular. The commonest material was rawhide, which was often contracted and hardened by fire, and then covered with buckskin. It was variously ornamented, and the decoration was the outcome of many a religious ceremony conducted according to long-established rules. It was "invariably held on the left arm, usually by a simple thong of buckskin attached to the interior." Many shields have two covers, each held on by a gathering string. In New Mexico and Mexico some tribes used one that could be shut up like a fan, and the Navajos had one that was made of cedar rods tied together with cords.



TLINKIT SKIN ARMOUR, ALASKA

"Made of tanned hide; two thicknesses; sewed along the upper edge. The 'swallow-tail' portion is reinforced with two extra thicknesses, making four in all. The coat is very heavy. The sewing is done with sinew. Width, 25 in.; height, 33 in."



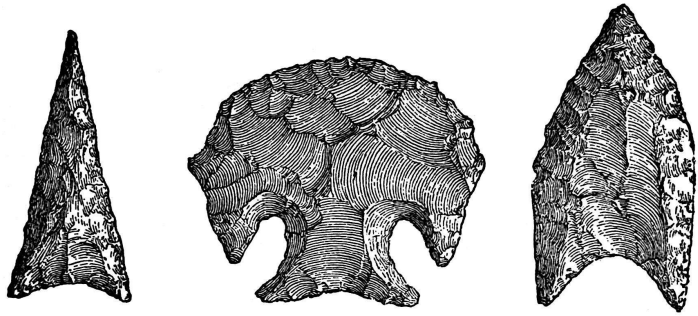
PREHISTORIC ALEUTIAN ROD ARMOUR

"The small rods composing it are about ¾ in. diameter, painted red. Width, 40 in.; height, 25 in. Position as on the body. It was fastened behind with two loops of sinew, into which wooden buttons were inserted"

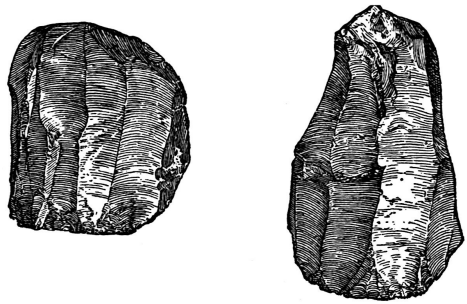
The body armour was made of rows of overlapping plates, lashed together, of slats, of rods, of skins, and of cotton padded. The plate armour is the one that was borrowed from Asia; a migration apparently across Bering Strait. The cotton-padded armour was confined to the Amerinds of Mexico and Central America, but the other varieties were distributed over the whole area. In the plate armour, "small, flat, oblong plates of ivory or bone pierced near the edges with from four to six or more holes," were lashed in series with rawhide thongs. The coat, made in this way of a number of rows, was tied at the back with thongs, or had a toggle fastening. Some of these plates in iron and in copper have been dug up at

Cape Prince of Wales and on St. Lawrence Island. This armour is very similar to that of the Japanese, and if it was wholly an imported idea, it was probably a comparatively recent one. The Tlinkits used the slat armour and also a rod armour, the former being made of very hard wood fastened with cords of sinew. A Tlinkit greave has also been found among the collections in the National Museum, so that it is probable that the North-west coast Amerinds protected arms and legs as well as body. The Iroquois are also reported to have used armour of rods both on their limbs and their vital parts. The rod armour was formed by sewing or lacing together with native twine a series of straight slender rods sufficient to pass around the body and tie in front, with places for the arms, and straps over the shoulders. The skin armour was simply a sort of heavy, sleeveless shirt made of thick hide, doubled and reinforced and otherwise rendered as nearly as possible proof against arrow or spear. In Mexico, where the padded cotton armour was chiefly worn, a breastplate of the same material was put on under it. The common Aztec soldiers wore armour of "reeds, grass, and hides, or 'nequen cloth, coated with India-rubber."[229] Veytia says the "private soldiers painted the upper part of the body to represent armour, but from the waist to the thighs they wore short drawers, and over them fastened around the waist a kind of kilt that reached to the knee, and availed them somewhat for defence. Across the body was a sash made of feathers that passed from the right shoulder to the left side of the waist."[230] Many Amerinds also wore in conjunction with the various kinds of armour, a helmet, ranging from the feathered war-bonnet to a heavy mask-helmet of wood. The Tarascos of Mexico, according to Brinton, specially

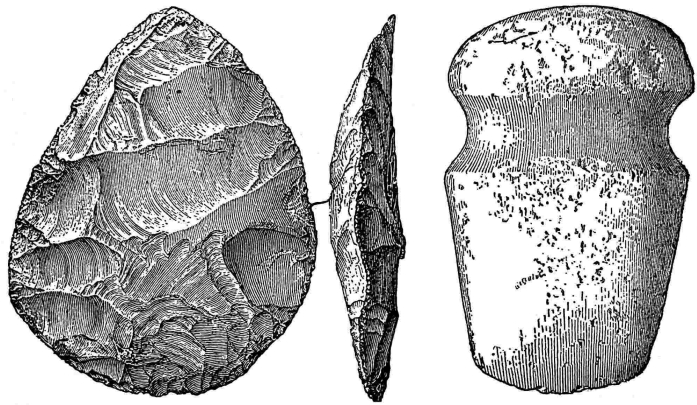
excelled in defensive armour, which "consisted of helmet, body pieces, and greaves for the legs and arms, all of wood covered neatly with copper or gold plates, so well done that the pieces looked as if they were of solid metal."[231] The Mayas wore cotton armour similar to that of the Mexicans, and bore a shield also. Breastplates of copper have been found in the Atlantic region, and many of the Amerinds there used body armour of wood, skins, and bark.



CHIPPED FLINT CHIPPED FLINT BLUNT ARROW-HEAD, GEORGIA CHIPPED FLINT IMPLEMENT, TENNESSEE



SPECIMEN "CORES," OR BLOCKS OF FLINT From which flakes were struck off for making arrow-heads, etc. Usually about 3 in. long in the U. S., but longer elsewhere



SPECIMEN OF CHIPPED FLINT DISCS, CALLED "TURTLEBACK," MISSISSIPPI VALLEY GROOVED STONE AXE, TENNESSEE (GROUND)

Another kind of defensive armour, though its qualities were purely imaginary, is the so-called "ghost-shirt" (see illustration, page 157) made of cloth or skin, and resembling the ordinary war-shirt of the Dakota. This shirt came into notice during the "Ghost Dance"[232] excitement that began about 1890 and lasted for six or eight years. It was worn by all men, women, and children who accepted the "Ghost" doctrine, either as an outside or under garment, and it was implicitly believed that no bullet or other weapon could penetrate its sacred material.[233] As already remarked in another chapter, the Amerinds in modern times, of at least the United States region, usually went into battle naked. The only defensive armour was, as Mooney records, "his protecting medicine," which consisted of "a feather, a tiny bag of some sacred powder, the claw of an animal, the head of a bird, or some other small object, which could be readily twisted into his hair or hidden between the covers of his shield.... Its virtue depended entirely on the ceremony of the consecration, and not on size or texture. The war-paint had the same magic power of protection.... The

so-called ‘war-shirt’ was worn chiefly in ceremonial dress parades and only rarely on the warpath.”[234] Just when the armour which protected by its intrinsic strength was abandoned for the protection of the “medicine” is not, so far as I am aware, at present known. At one time, it seems quite certain, the material protection of armour was almost universal over the whole of North America, while in our latter day no one ever saw an Amerind fight with armour on. The idea of going into battle nude was that the warrior’s movements were unincumbered, while his “medicine” afforded him ample protection. A Navajo who posed for me for a picture in Arizona described the Navajo manner of going to battle, but never mentioned armour, or any kind of protection. He said they always went naked, with even their hair untied from its customary knot and falling loose on the shoulders.

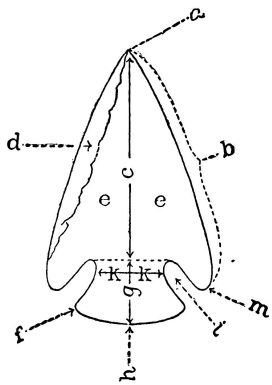


DIAGRAM EXPLAINING TERMS TO BE USED IN DESCRIBING STONE WEAPONS

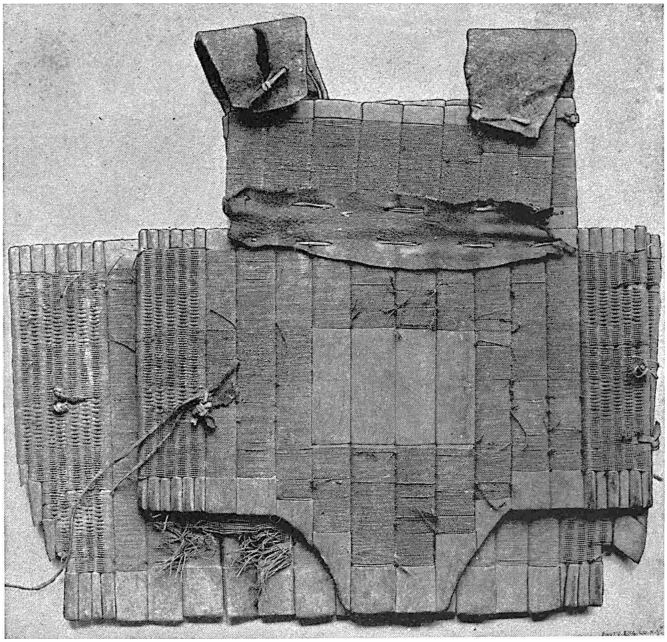
***a*, point; *b*, edge; *c*, face; *d*, bevel; *e*, blade; *f*, tang; *g*, stem; *h*, base; *i*, notch; *k*, neck; *m*, barb, or shoulder**

Stone arrow- and spear-heads are found in all parts of the continent, but they are almost always chipped, seldom ground. Maguire, who has made a special study of this subject, declares chipping to be one of the most difficult of arts. “On examination,” he says, “it is found that every rock has been worked in the best and most economical method which its texture admits.” The usual way of making arrow-heads was to place the bit of stone previously flaked from a nodule or fragment and brought near the shape by percussion, on the palm of the left hand, which is protected by a glove or a piece of buckskin, and hold it there by the fingers of that hand while the right brings a down pressure to bear on the edges by the point of a slender piece of horn or bone. The chips spring off and the operation is continued till the desired shape is attained. I tried this method once on a flake of chalcedony I had picked up, and had no difficulty in bringing it to an arrow-head shape. Maguire has made a great many successfully. Chisels, axes, and mauls were made the same way or were ground into shape, a groove being made in the axes across the sides to receive a split stick that was bound on for a handle. It is almost unnecessary to say, perhaps, that there never could have been a time when all tribes were equally proficient in the art of stone working, some being skilful when others could make nothing.[235]

In this country we know so well the origin of the stone implements found in the fields that we smile when we read of people in Europe treating them as charms and talismans. “When kept in a house they protect it from lightning; the water in which a celt has been boiled is a remedy against rheumatism; and sick cattle are cured by drinking water in which a celt has been placed.” The Amerinds frequently treat

them as medicine.[236]

Some tools were produced in the rough at various sites, or workshops, located at the quarries. Those in Ohio described by Moorehead are probably the most extensive in North America, except the obsidian mines of Hidalgo, Mexico. “The magnitude of the deposit is such,” he says, “that it has given to the locality the distinctive name of Flint Ridge.” It occupies an area about eight miles long by three wide. Here thousands of cubic yards of earth had been removed to reach the flint beneath. “Acre after acre has been so thoroughly excavated that scarcely a single foot of earth and stone retains its original position. Hundreds of wagon loads of spalls cover the ground.” One of the pits formed in this extremely hard stone is almost a hundred feet in diameter and more than eighteen feet deep. The method employed was to build a fire on the rock and then throw cold water on the spot till the edge was broken through and they could knock flakes off of the under side with stone hammers. These were put roughly into shape at some nearby spot and then perhaps taken far away to be finished. This flint formed better tools than that found on the surface.[237] Many of the blades were often piled together for some unknown reason. In sinking a well in a corner of a mound in Illinois, eighteen large flint spades were found a few feet below the surface, closely packed together, and Moorehead found in Ohio the largest “cache” ever brought to light. This formed a mound in the Hopewell group, six feet high and sixty feet in diameter at the base, and contained over seven thousand flint discs about the size of a man’s hand.[238]

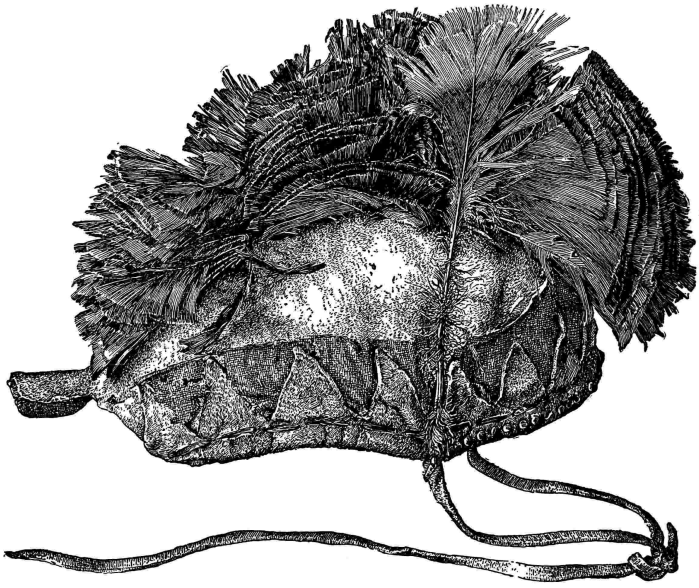


TLINKIT SLAT-AND-ROD ARMOUR, ALASKA, FRONT VIEW

"Made of slats and rods of hard wood, 1¼ to 1½ in. wide, $^{5}/_{16}$ in. thick, woven together by means of fine sinew cord so as to admit of considerable flexibility. The rods and slats are pared down to form channels for the reception of the cord weaving. The front and back portions are woven separately. The neck portions are made up of short slats, and sewed on by means of a strip of rawhide 1½ in. wide. The shoulder supports are of very thick elkhide, the one on the right being fastened by a slash and toggle. Width of rear portion, 24 in.; height, 20 in.; width of front portion, 18 in.; height, 19 in."

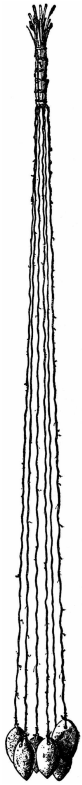
Some spear-points found are more than a foot long and three inches wide, and they vary from this down to what may be termed large arrow-heads. Some writers claim that only the very small smallest heads were from arrows, but this would vary according to the tribe and the game hunted, just as we have various bores to our rifles. The stone arrow-heads of the Pai Utes twenty-five years ago were small, but the smallest were often attached to the longest arrows. The method of securing the head to the shaft

was generally similar everywhere. A notch being cut in the end of the stick, a small quantity of pitch, asphaltum, fish, or animal glue, or cement, was placed in it, warmed, and the stone head squeezed into position, where it was held by wrappings of wet sinew thread which, drying, gave it a firm grip, and yet when moistened by blood would allow the head to come off in a wound. The sinew was variously applied, according to the shape of the head. The triangular head was held on by passing the sinew over the outer edges, while in that with a tang, which went well down into the shaft, the sinew was wound round and round the shaft and over the tang at the same time. All iron heads were made and mounted in the latter way. In the leaf-shaped head with deep notches, the wrapping was thoroughly protected by the depth of the notches through which it passed. The hafting of knives was much like that of arrows and spears, the ordinary stone knife looking much like a spear-head, and probably some implements that are classed as spear-heads were knives instead. Many were double-edged, while others were single. Some of the diminutive stone implements resembling arrow-heads were drill-heads or awls, and also heads for the children's play-arrows.[239] There is also a great range in the size of the stone axes and hammers, from mere toys to those so large as to be unwieldy. Grooved stone axes are found all over the continent, except in the mounds of Ohio. Like other stone implements, they have often been used successively by various tribes. Those used to-day by the Mokis and Zuñis are some they have found, and they use them as pounders and pestles. Many of the axes and hammers were weapons of war.

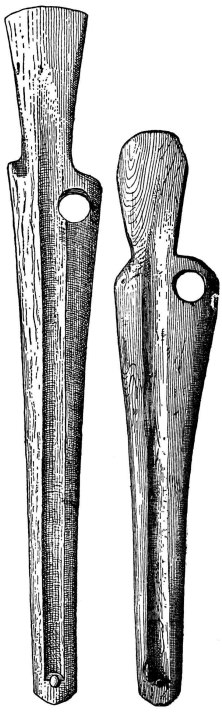


APACHE WAR-BONNET

The Amerinds were so skilful in the use of stone tools that it is related that in the early days of the West they would skin and dress a deer with a stone almost as quickly as a white man could do it with a hunting-knife. For this purpose they would pick up a thin stone and with a few sharp blows from another stone bring it to a cutting edge. Skins were dressed by scrapers of bone or stone to remove superfluous flesh. Pins were used for stretching them on the ground.



ESKIMO BIRD BOLAS.
1/6



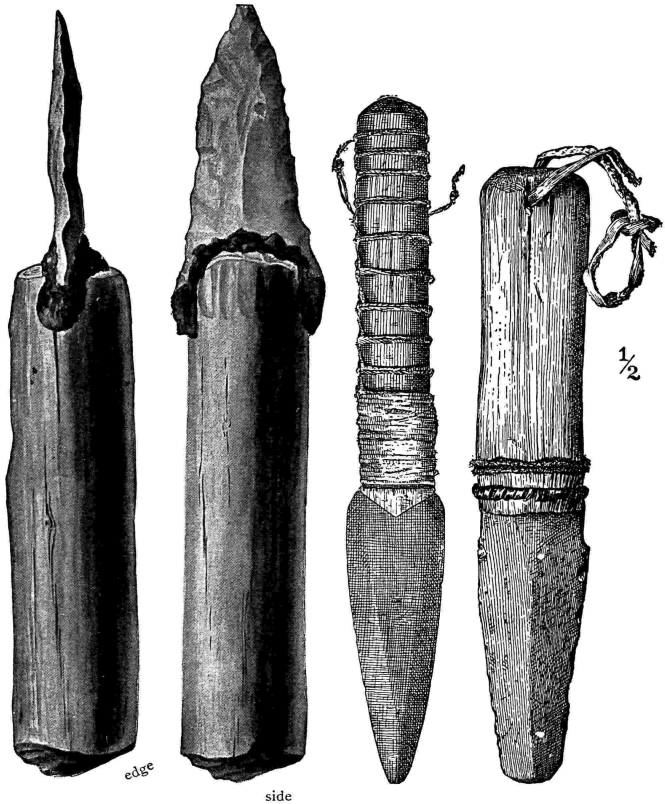
ESKIMO THROWING-BOARDS FOR DARTS. ¼

Among the Eskimo the harpoon reached a high state of perfection, and many of their weapons are beautifully made. Bone, wood, and ivory were utilised for the shaft, and a specially unique one was made from the single horn of the narwhal. Spears or lances were also used for land animals before they had firearms. They are now pretty well supplied with the latest Winchester rifles. The harpoon to-day has a blade of thin iron or steel set into an ivory or bone piece which has a hole through it that retains in place a sealskin thong to which a line is attached. The bottom of the ivory piece has a socket in it that fits on to the lance shaft. When the harpoon strikes an animal's body the head of it then hangs there on

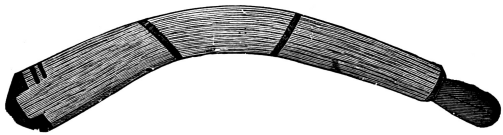
the end of the line, coming loose from the shaft. There are various forms of the harpoon for different animals, and they are also of different sizes according to the weight and strength of the owner. Formerly the blades were of slate, jade, or flint. Floats of sealskin inflated are used to mark the place of a capture, so that carcass and harpoon can be easily recovered. The Eskimo had a wolf-killer that was ingenious. A stout piece of whalebone, about a foot long and half an inch broad, was sharpened at the ends and then frozen in a piece of blubber in a Z shape. The wolf swallowing it, its own heat released the whalebone, which penetrated the sides of the stomach and killed the animal. Each tribe had a varied assortment of implements according to locality and occupation, and it would not be possible even to mention them all in a single chapter, so I shall give only the most important. The bird spear of the Eskimo is a singular weapon. The shaft is laid on a short board fifteen to eighteen inches long, which has a groove to receive the shaft, a handle, and a hole for the first finger. A spike in the shaft prevents slipping, and when the board is hurled forward by a strong wrist motion, the fingers let go the shaft, which, leaving the board, flies forward to the mark with considerable force. These spears are also used by the Aleuts. The Eskimo also use for bird killing six or seven ivory balls, each attached to a string about thirty inches long, the ends of the strings being supplied with tufts of feathers. The balls spread apart in flying through the air and cover a wide space. For war all tribes had clubs and tomahawks. The Mexicans used some with blades of obsidian set in both edges.

In the line of throwing weapons is the *pūtchkohu* of the Mokis, a first cousin to the Australian

boomerang. It is effective at thirty or forty yards, but does not return. It is a flat piece of curved oak, sawed out of a bend of a limb, about twenty inches long, one quarter to one half inch thick, and two inches wide, with a small handle at one end. It is thrown with the concave side forward.



Ute stone knife. Handle of wood and blade set in a dark cement
Eskimo slate knives. Handles of wood
AMERINDIAN KNIVES



MOKI THROWING-STICK, OR PUTCHKOHU. ⅕



PUEBLO PLANTING STICK. 1/10



ZUÑI WOODEN SPADE.

1/10

Used for shovelling snow from roofs and for taking bread from ovens

Nets were used for fishing and for hunting. The Pai Utes made a good net of cord, from milkweed or sagebrush bark, about as thick as telegraph wire. It was about fifty feet long and three feet broad, and was propped up on the ground on a number of slender rods, one net being joined to another's end until a large semi-circle was formed into which rabbits from a large area were frightened by noises. Caught in the meshes, they were soon despatched by their pursuers. Many Amerinds used nets for fishing, and the Eskimo make a fine, strong one of sealskin, with which they catch the seal itself as it rushes after prey in the waters near some beach where the net is stretched. I obtained one that is fifty feet long and about six feet wide, with meshes seven inches square.

For agricultural operations the Amerinds had various tools, which, though primitive, answered the requirements. Of the plough, or anything approaching it, they had no knowledge, the hoe being their chief implement. This was made of flint, the shoulder-blade of a deer or other animal, a turtle shell or some similar object. Spades were also made, often of wood, and in the Mississippi region of flint, but these are seldom found in the Atlantic division. In the Moki country corn is still planted with a dibble, a stick sharpened at one end and having on

one side a projection to receive the foot, which pressed it into the soil. Having cultivated a crop of maize, the grain had to be reduced to meal before it would serve for winter use, and for this purpose mortars of wood and stone were used, and also the *metates*, or mealing stones. Other substances besides corn were also ground in the mortars, as seeds of grass, dried fish, nuts, grasshoppers, paint, etc. Sometimes natural depressions in rocks were utilised, but oftener small bowlders were worked into the desired shape and stone pestles were wrought out to accompany them. The cavity was of various depths. Those tribes growing little corn made mortars neither large nor deep, and some, like the Pai Utes, growing no corn at all, ground their grass seeds on a flat stone, while those relying chiefly on corn for food, like the Pueblos and the Mexicans, in the early days made large oblong mortars, of hard basalt cut out to a depth of six or eight inches, with sides not more than an inch and a half or two inches thick. While these were really mortars, the grain was not pounded in them, but crushed and rubbed into meal by means of another stone, flat and oblong, about four and a half inches wide and some ten inches long and an inch or two thick. When the Pueblos and Mexicans settled in permanent houses they departed from the old way of hollowing out these stones, and used instead a flat slab, set up at an angle of about thirty-five degrees in a frame of slabs of stone, or of wood, about six or eight inches deep. Several of these slabs were fixed in a row, usually three, and were each made to produce different degrees of fineness by the girls behind till at the last stone, or metate,[240] as they are usually called, the meal was of the required condition. See page 194. The Eastern Amerinds usually pounded their corn with stone

pestles in wooden mortars. Some Western tribes used the same method. Diminutive mortars were used for preparing face paints, while others were children's toys. The so-called cupped-stones have sometimes been supposed to be paint mortars, but, as pointed out in a previous chapter (p. 66), they may have been mostly used for roughing and shaping the ends of fire-drills.



From a drawing by the author

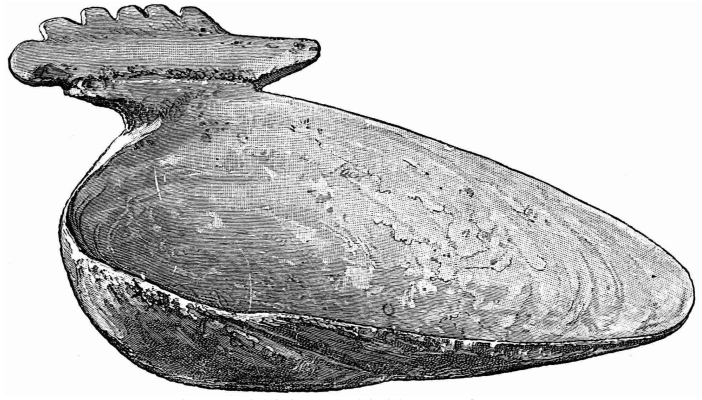
A MOKI THROWING THE PUTCHKOHU

The "East Mesa" is seen in the right distance whereon are the three villages of—left to right—Walpi, Cichumovi, Tewa. The dressing of the hair is Navajo, as well as the turban, the model's uncle being Navajo but a Moki citizen

The Navajos carve moulds for their silver casting in sandstone, and it seems likely that some of the so-called stone tablets, inscribed with figures that are not clearly defined, may have been nothing more than moulds, in those regions, at least, where it is known that copper or other metals were worked.[241]

The spindle and loom, which belong among the

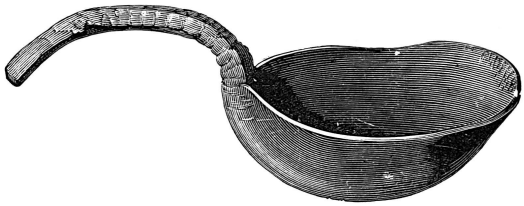
implements and tools enumerated here, have already been described in connection with weaving and they will now be passed by. The tools used in metal working will be mentioned in a following chapter.



SHELL SPOON, MISSISSIPPI VALLEY
Actual size

Household utensils were made of various materials, of which earthenware, as noted in the chapter on Pottery, was one of the chief. There were also trays, boxes, buckets, and cups of wood. Others were of whalebone, sealskin, soapstone, and ivory. Spoons were made from the horns of the mountain sheep, from those of goats, and from bison horns. Some of these spoons, made of horn by the North-west coast Amerinds, are elaborately carved and polished. Clam, oyster, conch, and turtle shells also served for ladles and spoons. Drinking cups, dippers, water-bottles, and other vessels were made of gourds. Metallic cups or pots have not been found antedating the arrival of the Spaniards. Soapstone vessels, as well as earthenware, were made and used in the Atlantic region; soapstone by the Eskimo. Quarries exist where the material was obtained, especially in the Chesapeake-Potomac tidewater

region. Special pick-like stone tools were made for cutting out these pots and masses. The Eskimo, who once ranged down as far as the mouth of the Hudson and possibly farther, may have originally opened up some of these quarries.



PUEBLO MOUNTAIN SHEEP-HORN SPOON. ¼

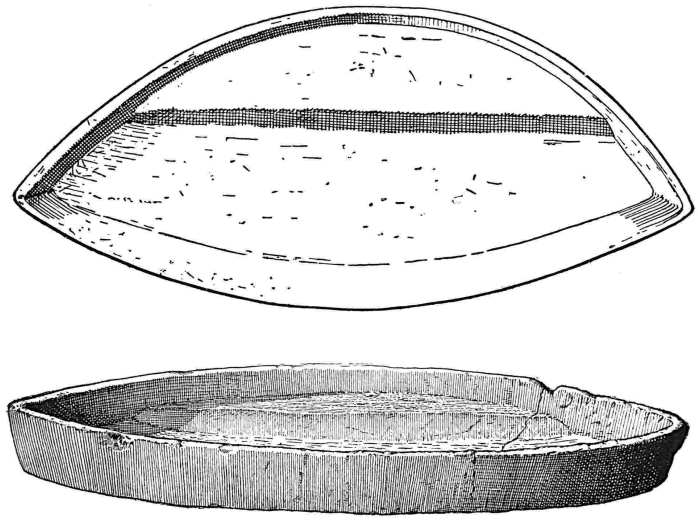


MENOMINEE WOODEN MORTAR AND PESTLE

In the line of utensils, the Eskimo lamp, is, perhaps, one of the most important and unique.[242] No other Amerinds had anything of the kind. It was a necessity with the Eskimo, while tribes living in wooded regions would have no use for it. They could obtain light from camp-fires, especially with the addition of pitch pine. But the Eskimo lamp is primarily a heating apparatus. What need then for Amerinds, who had wood, to bother with a lamp, for which oil must be prepared? Besides this consideration was the one of cleanliness, for the lamp is very dirty, and even Amerinds have standards. “Far more remarkable than being the unique possessors of the lamp in the Western

Hemisphere," says Hough, "the Eskimo present the spectacle of a people depending for their very existence upon this household belonging. Indeed, it is a startling conclusion that the lamp has determined the occupancy of an otherwise uninhabitable region by the Eskimo, or, in other words, the distribution of a race."[243] When fuel can be obtained, which is the case often in summer, fires are used instead of the lamp. This fuel is peat, grass, driftwood, or shrubs. The lamp is generally of soapstone, though some have been made of clay, earthenware, bone, or wood. The usual shape is something like a clam shell, though they are sometimes oval or pear-shaped, or round. They are modified in form according to the use required of them, the traveller's lamp being much smaller necessarily than the ordinary lamp of the iglu. The lamps vary in length from two or three inches to about two feet, and in width from one half inch to nine or ten inches, while the height is from less than an inch to four or five. The smallest specimens are toy lamps of the children, and the next in size the traveller's lamp. Small lamps are often balanced but the large ones are not, but are supported by a wooden block or by pegs of wood or bone stuck into the snow. The shallow hollow of the lamp is filled with seal oil, which is obtained in winter by freezing the blubber, when the oil can easily be extracted by beating; in summer often by chewing it out. The wick is of moss and is arranged along the wide side of the lamp. It has to be trimmed frequently, but when kept in good order gives a bright illumination which Schwatka declared to be "certainly equal to the light from three or four kerosene lamps." The oil is kept in sealskins, which are made into bottles by sewing, and the comfort and cheerfulness of the iglu

during the long night depend on the stock of oil which the family has been able to secure. The farther north, the larger the lamp, because the darkness is longer and the cold greater. *Vice versa*, southward it finally disappears.

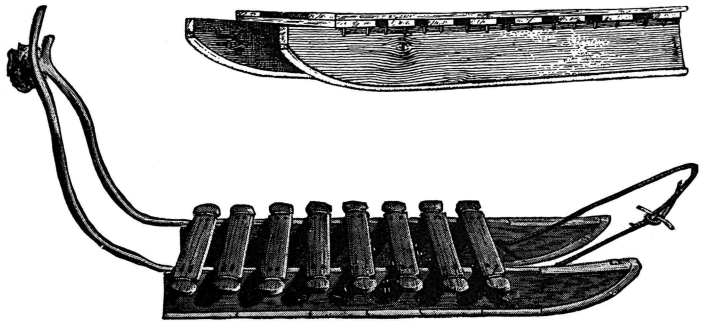


STONE HOUSE-LAMP, POINT BARROW, ALASKA. ¼ 3 in. to 2 ft. in length

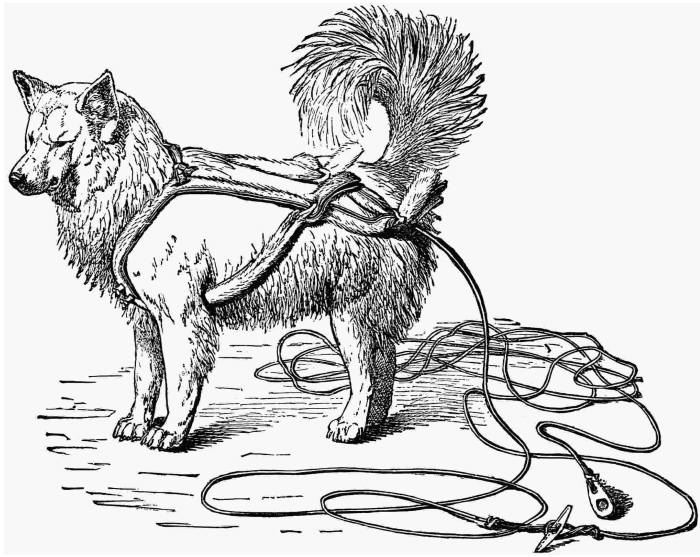
In transportation facilities the Amerinds were extremely deficient, the Eskimo excelling all others in this direction. This was the result of environment and does not indicate superiority of the Eskimo over other stocks. They had vast treeless plains and ice sheets to traverse, and the sledge was a necessity. Dogs all Amerinds had, and some of them used them, to a certain extent, for beasts of burden, so that there was not a great deal of invention required to attach one or several to the sledge. On the other hand, most Amerinds were not so situated that they could utilise the dog in this way, and the continent offered them no substitute for it unless, as has been suspected, some of the South-western tribes may have had an

animal resembling the vicuna, which they kept for its wool and presumably for transportation purposes also. But there is as yet no trustworthy evidence of this, and it may be said that the Amerinds of North America as a race possessed no beast of burden but the dog. In time, had the bison not been exterminated, and provided also that the whites had not come, it is possible that this animal might have been domesticated for milk, for meat, and for draught purposes. But the bison, after all, was ill adapted to work, for he is clumsy, so that the Amerind really had only the dog that was practicable, and this he utilised as far as possible, or at least as far as necessity directed. The Amerinds encountered on the plains of Texas in 1540 by Coronado were using the dog,[244] just as they afterward used the horse, for transporting tents and tent poles. A great many different forms of sledge are in use among the Eskimo, and besides the regular sledges, walrus skins, rolls of sealskins, and even packs of salmon are sometimes used for the purpose. When skins are used they are soaked with fresh water and sewed in a bag which is given the desired shape and then allowed to freeze solid, in which condition it remains till the return of warm weather. The Eskimo is never troubled with a “January thaw.” Sometimes sledges are made out of slabs of fresh-water ice frozen together; or blocks of ice are hollowed out. The runners of the ordinary sledge are usually made of driftwood and are from five to fifteen feet long and twenty inches to two and a half feet apart. The runners are connected by crossbars of wood or bone and are shod with whalebone, ivory, jawbone of whale, and sometimes with frozen fish. The shoe is either tied or riveted in place, and the parts are generally tied together, though now iron

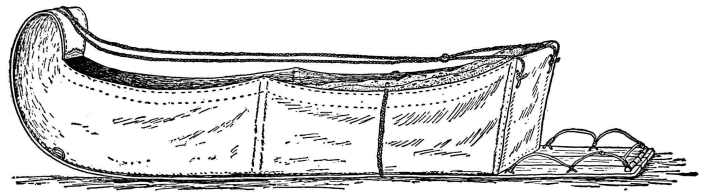
nails are sometimes used. When there is a back to the sledge it is made, in the Central regions, of wood or of deer or caribou antlers. Very small sleds are used for running boats out of water, and their runners are often single walrus tusks, the rest being of any wood obtainable. “The dog harness consists of a broad band or strap of stout rawhide, with three parallel loops at one end.... The head is passed through the middle loop, and a foreleg through each of the side loops, bringing the main part of the thong over the back.”[245] This is the trace, and by means of a toggle it is fastened to a long line that runs back to the sledge and connects all the dogs with it. The Central Eskimo make two bights passing under the forelegs, joined by two straps across the neck and breast. The dogs are not driven in Alaska,[246] but they are in the Central and Eastern regions, and Boas asserts that silence must be maintained during the journey, for the dogs will stop, turn around, sit down, and listen to any conversation that is carried on. The dogs are wolf-like in appearance, but are not given to barking. Indeed, they seem to pay little attention to a stranger. A long whip is used for touching them up when on the sledge. Steering is done by the legs of the driver. In the late spring, when there are sharp ice needles, a sort of leather boot, with holes for the nails, is tied to the dogs’ feet to keep them from getting sore. In summer-time they have an easy life of it. The Alaska sledge has no back, but has a rail on each side.



ESKIMO SLEDGES



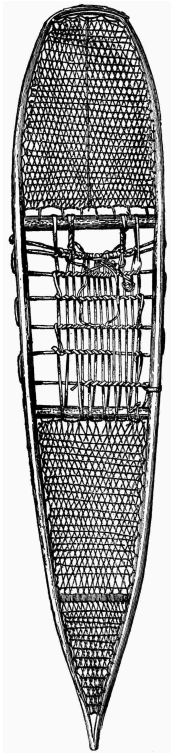
CENTRAL ESKIMO DOG HARNESS



ENCLOSED CANADIAN TOBOGGAN OR TRAVELLING SLED
From Porcupine River, Alaska. Length about 8 ft.; width, 14 in.; height of body, 18 in.

"The sleds of the Chippewayan," says Mason, "are

formed of thin slips of board, turned up in front, and are highly polished."[247] This is the toboggan, or Amerind sled without runners, developed and used in the region lying between that occupied by the Eskimo and about the northern limit of the United States. Dogs were attached to the toboggan by some tribes, as the Tinne, who also used the dogs in summer as pack animals. The toboggan, however, was usually pulled by men, and its object was the transportation of a load which would otherwise need to be carried. It was made of a single thin plank, or of two, fastened together on the upper surface with battens, and having the forward end turned up and over like a letter C and fixed in this position by rawhide cords attached properly to the first cross batten, and sometimes a rawhide line is also carried back to the last batten to give additional strength. The toboggan is now in common use among the whites of America, especially the Canadians.



ESKIMO SNOW-SHOE, POINT BARROW, ALASKA. ⅛

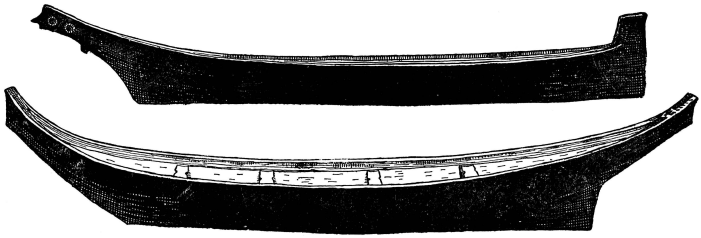
In pulling the toboggan over the snow the traveller would sink deep and become tired with only ordinary foot covering, so the Amerind invented a shoe expressly for snow travel. This is familiar to almost everybody, but a brief description will be added for the sake of those who may not have seen it. There are two kinds of snow-shoe; those represented by the Norwegian ski, made of wood, long and slender, and not used in America before their introduction from Europe. The only wooden shoe recorded is an Eskimo one made in the same shape as their others. The other kind of snow-

shoe[248] is the Amerind one made by bending to an oval shape a slender piece of wood for a frame, and filling the interval with rawhide netting; and it was in use all over North America, where snow remained for any length of time. Among some tribes these shoes were “rights and lefts,” but as a rule they were interchangeable. They are generally the shape of a long, pointed oval, but some are almost round. There are two crossbars to hold the frame in shape, and also to form supports for the toe and heel. Some shoes were four or five feet long and seven or eight inches wide, and turned up at the forward end, while others were short and broad and not turned up, the interval between being filled by a series in great variety. The foot is held in position by suitable thongs or straps. These shoes are now in common use by the whites.

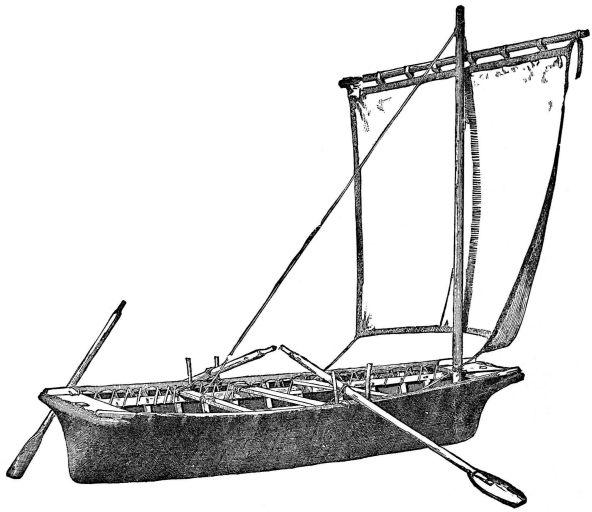
In summer the means of travel, before the horse came with the European, were, on land, nothing more than a good pair of legs, but, on the water, it was different. There, many of the Amerinds were at home, for they had some of the most admirable small boats ever devised. Chief of these, for lightness and grace, is the birchbark canoe,[249] though the Eskimo kayak is not far behind it. The birchbark canoe is made in various sizes and in different tribes has variations, but the type is the same everywhere. There is a slender, well-made frame of wood, consisting of ribs, gunwales, and stiffening strips, over which the bark, which has previously been sewed together, is stretched. The bow is a trifle broader across the beam than the stern, but both are pointed. The bark covering is rendered water-tight, where there are holes or seams, with pine gum. The paddle is similar to the paddle in use everywhere by the Amerinds, having a sort of T-shaped top to the

handle, and being about five feet long and four to six inches wide. This kind of canoe was made wherever there was birchbark and water to float it. Another form of boat which was universal was the dugout canoe. This varied in size and shape according to locality, and was always hollowed out of a single tree, by fire and by gouging. When completed it was spread open wider, so that one of these boats has the appearance of being from a larger tree than is the case. The finest dugout canoes are those of the North-west coast, where they are constructed from cedar trees of huge proportions. One of these canoes, made by the Haidas, now in the American Museum in New York, is almost a ship and could be navigated in stormy waters. The Haida canoes are often elaborately carved. Farther up the coast the Tlinkits are experts likewise in canoe building and in the management of them. Their canoes are also hollowed from single logs. Many of them are small, being barely large enough for two persons. Some have a peculiar projection, a point sticking out from the lower part in line with the place where the keel would be if they had one, and also another at the top, rather square; that is, the wedge-like end is hollowed out in the middle. Either end is sent forward, but the prong end usually first. It seemed as if this projection might be intended to ward off ice, for it is in the regions of Yakutat and Glacier bays that it is the dominant type; and there ice is always floating from the glaciers. At Prince William Sound the *baidarka*,[250] or kayak, comes into use. This is certainly the perfection of a canoe. The frame is admirably made, being tied together and covered with walrus hide, or sealskin, and the boat rests on the sea seeming scarcely to sink into it. The umiak is the boat for travelling and general transportation. In

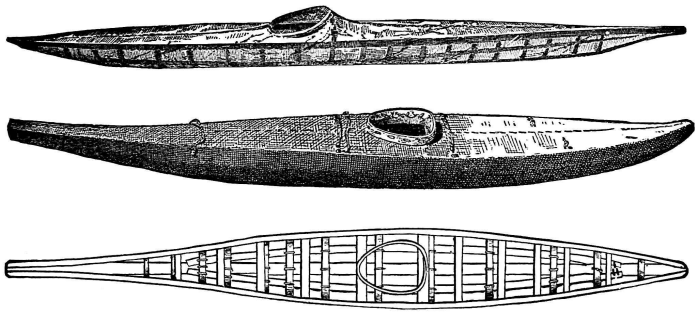
it the whole family, or even two or three families, with all their trappings, journey about—dogs, children, packages, and adults all combined. In the sunlight its rich, translucent yellow colour is beautiful, and when filled with the good-natured, ruddy-cheeked Eskimo, clad in soft and elegant furs, the picture formed is one that is remembered ever after. In the Eastern regions it is termed the woman's boat. They are usually about thirty feet long, five or six wide, and thirty inches deep. The ends are both rather pointed, and the bottom is flat. Sometimes there will be fifteen or twenty persons in one of the umiaks at the same time. The frame is on the same general principle as all other boats—that is, a combination of certain ribs, thwarts, braces, etc. All these pieces are lashed together, and when the skin covering is on, the umiak is a staunch and excellent craft, albeit it is entirely open. The cover is laced on, and in winter it is removed and stored away till the waters are open once more, when it is soaked in the sea to render it soft and again stretched in place.



CANOES OF THE NORTH-WEST COAST
Models of the family or transportation type. Hunting and fishing canoes are similar. All these boats are hollowed from single cedar logs, and then somewhat widened by spreading. They often carry a great number of persons



UMIAK OF THE CENTRAL ESKIMO
The Alaska umiak has no oars and is more pointed

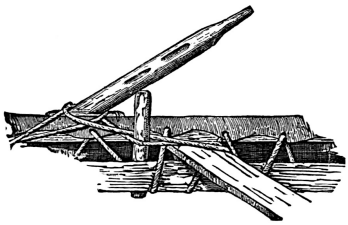


Frame

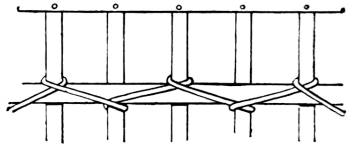
ESKIMO KAYAKS
The framework is tied together and covered with walrus or other hide. Sometimes, as in the Aleut kayaks, there are two or three hatch-holes

The umiak[251] has a sail of the square sort, made in these days out of cotton, though formerly of seal intestine, which is attached to a yard. The mast is some twelve feet high. The paddles are about five feet long and six inches wide, though there are smaller ones also. Sometimes oars are used as well as the paddles in navigating the umiak. The kayak is made in the same way by stretching skins over a

wood frame tied together most dexterously. The navigator sits in a hatchway, as the kayak is entirely covered, and a sort of apron tied around his waist and around the coaming renders the boat water-tight. It is said some of the Alaskans will turn a somersault in the water, coming up on the opposite side.



METHOD OF ATTACHING OARS TO UMIAK



METHOD OF TYING FRAME OF KAYAK

Besides the boats mentioned there were others on the continent made in different ways,[252] but these are the chief ones and serve to show that the Amerind was ready to adapt himself to water when occasion demanded. Taken all in all, his weapons, armour, implements, and his transportation methods show, as other things do, that he was a progressing, thinking being, with a good brain directing his operations.



THIN PLATE OF COPPER WROUGHT BY REPOUSSÉ METHOD, ILLINOIS MOUND

CHAPTER X

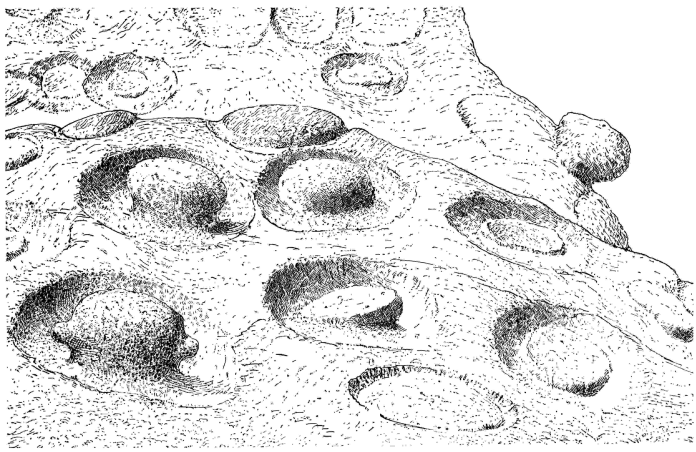
MINING, METALLURGY, AND SCIENCE

MINING operations were carried on in different parts of the continent, but in a primitive, limited way. Some of the most extensive was the mining for flint with which to make stone implements, mentioned before. The mining was done by means of fire and cold water alternately applied, and this was the method used in all mining operations on the continent, so far as is now known, except in the steatite or soapstone mining. But, even in Europe, until the invention of gunpowder, the fire method was employed, and in one or two localities where fuel is plenty it is said to be still considered an economical manner of extracting ore. In the Far West, where the rocks and ledges were more exposed, veins were discovered where the calcedony,

or jasper, or other stone desired for stone implements could be easily knocked out. It was then carried away to some comfortable site and wrought into shapes. Along Western rivers one occasionally comes upon a spot where the ground is littered with "chips," rejects, broken arrow-heads, and also perfect ones, the latter probably having been dropped and lost; or possibly in some way not being satisfactory to the arrow-makers.

In working out soapstone vessels of the larger kind, the mining and rough shaping were frequently, if not always, accomplished at one and the same time.[253] Holmes describes the methods employed as follows: "When a sufficient area of the solid stone had been uncovered, the workmen proceeded with pick and chisel to detach such portions as were desired. If this surface happened to be uneven, the projections or convexities were utilized, and the cutting was not difficult; if the rock was massive and the surface flat, a circular groove was cut, outlining the mass to be removed, and the cutting was continued until a depth was reached corresponding to the height of the utensil to be made; then, by undercutting, the nucleus was detached or so far severed that it could be broken off by means of sledges or levers. If the stone happened to be laminated, a circular groove was cut through at right angles to the bedding, and the discoid mass was removed without the need of undercutting.... A notable feature of the cutting out of these masses of stone is the attendant shaping of the mass which was rudely sculptured as the work went on, the contour of the vessel being approximately developed. Although I have seen no good examples of this class, it is confidently stated by others that rude nodes were carved at opposite ends of the mass as incipient

handles, and that excavation of the bowl was begun, so that when severed from the stem the vessel was already well under way."[254] These vessels were usually, in their largest size, about two feet long, one foot or more in width, and about seven or eight inches deep. Some are nearly circular. The tools used were of stone, wood, bone, and horn, but chiefly of stone in the form of chisels and picks. Some of the trenches formed in cutting out this material were twenty-five feet wide, sixteen feet deep, and seventy feet long. One described by Fowke near Culpeper, Va., is one hundred and fifty feet in diameter and of considerable depth, being filled with water and débris. Pits of varying depth and size from which steatite, jasper, rhyolite, and other materials have been extracted by the Amerinds are found in different parts of the continent. In Yucatan there are numerous well-like holes in the ground that were "pockets" of zahcab, and when this valued material was taken out the cavity was either left or transformed into the strange, well-like affairs, carefully walled up and covered over, called chultunes, the object of which is often a mystery.[255]



AMERINDIAN METHOD OF MINING STEATITE FOR UTENSILS

Native metals, when discovered by the Amerinds, were mined in much the same way as the flint, the largest workings known being those at the Lake Superior copper mines, where copper of remarkable purity continues to furnish this continent and the world with an abundant supply. Doubtless most of the copper used on the North American continent prior to the Discovery was derived from these mines and distributed through the channels of Amerind trade. Bowlders or nuggets of this pure copper were treasured in the homes of the tribes of the northern lake region when first encountered by the whites, and the location of the outcrops, both on the mainland and on the islands, appears to have been well known to the Amerinds of that time. An Algonquin chief presented Champlain with a piece of copper a foot long and told him there were "large quantities" where he had obtained this. He also said "that they gathered it in lumps, and, having melted it, spread it in sheets, smoothing it with stones."[256] The mining operations in the Michigan-Minnesota copper region were evidently carried on for a very long period in the laborious Amerind way, and in consequence at the time they were first noticed had the appearance of extensive operations by a few miners, leading to the erroneous supposition that they had been worked by some other race.





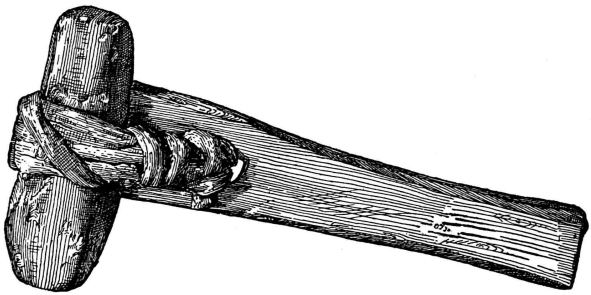
CHIPPED SPADE

It must not be forgotten that before the arrival of white men, and even to this day in certain localities, copper appeared about as valuable as gold. If the Lake Superior mines had been gold instead of copper it would not greatly have enhanced the value of the product in the opinion of the Amerinds of the locality and their customers. They worked their way down into the rock which carried native copper and broke off nodules and fragments as they proceeded. Some of the pits were eighteen or twenty feet deep, and in one case a huge bowlder of copper was found lying on oak supports several feet from the bottom. This mass had been denuded of every projection, and the supposition generally has been that it was being elevated to the surface by means of the wood underpinning. This may have been the case, but it is possible that the underpinning was inserted as the miners went down on the vein, because the bowlder was too large to cut or handle. They therefore *left it where found* and proceeded to mine under and around for the smaller pieces. The large one was ten feet long, three feet wide, nearly two feet thick, and

weighed over six tons. Other bowlders of greater weight have been found, moved, as is supposed, a considerable distance from the original bed, but the same hypothesis might apply to these that is suggested above. The famous Ontonagon bowlder, [257] which was found on the river of that name, is a copper mass weighing somewhere near five tons and has been the cause of much speculation as to how it came there. The probability is that it was left by glacial action on the surface, not far from, if not on, the spot where found. It is not likely that the Amerinds would take the trouble to move so large a mass far. If they had possessed the power of cutting it up, they would have done it near its source, and the same remark applies to the bowlders of copper that it has been supposed they were trying to lift to the surface. Furthermore, if the Ontonagon bowlder were transported by them to its position, and if the large bowlders in the mines were destined for the surface and transportation in bulk, we ought to find somewhere else records or evidences of the presence of great bowlders, but nothing of the kind has been found; no such large copper mass has been discovered in any ruined Amerind town, or on any Amerind village or town site. It seems that the Ontonagon bowlder was a natural deposit. These huge masses of copper were troublesome to modern miners with the most approved machinery.

It must not be supposed that all the Amerinds of that region were miners, any more than that all the Amerinds of any other region were equally developed or skilful, or all did the same things. The Navajos of the South-west are some of them expert silver-workers, yet their neighbours, for the most part, can do little or nothing in that line. But that is no reason for supposing the Navajos to be a race

distinct and apart from the rest. No more were the workers of the Lake Superior copper mines any different from their neighbours in general. They had a knack of working the native copper out of the ground, and they worked it just as others mined for flint. When they ceased it was probably because they had worked out all the easy places they could find, or that their trade fell off owing to the introduction by the Europeans of manufactured articles of copper and iron.



ESKIMO STONE MAUL. ⅜

In one of the ancient pits a hemlock with 395 annular rings was growing, and this has led to the supposition that the mines were worked before the time of Columbus. The excavations undoubtedly extended over a long period; from before Columbus to after Champlain. But it was over three hundred years after Columbus before the first explorations of the Lake Superior region were made by General Cass, and hence the tree had time to grow since that date. On the whole, there seems to be no reason for supposing that anyone but Amerinds worked these mines; Amerinds lastly of Algonquin stock, though other stocks probably worked them also.

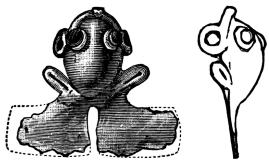
The method of utilising this copper in the Northern regions, that is, north of Mexico, was as primitive as

the method of extracting it from the ground. It seems often, perhaps generally, to have been hammered into shape cold and then finished by grinding. Doubtless they knew how to melt it out of the rock on a small scale, allowing it to drop or run into a mould scraped into the surface of a flat stone, somewhat the shape of the article to be made, which would afterward be finished with hammering and grinding.

The objects found in the Mississippi valley, formed of copper, which are probably the unaided work of the Amerinds, are chisels, arrow- and spear-heads, knives, and perhaps certain thin plates wrought with designs in the repoussé method. No camp utensils or other objects have been found demanding a knowledge of the properties of the metal sufficient to work it into articles requiring a quantity of copper to be manipulated at once. Cushing maintains[258] that the production of thin plates was an easy matter and he shows how the Zuñis made them, but admitting that the Amerinds of the Mississippi valley could make these plates, it does not prove that they did, for as copper in various forms was very early an article of trade, it is possible that they used the imported article. Cushing explains how the Zuñis, by a process of alternate hammering and annealing and then grinding, produced thin plates, which being pressed with a sharp tool would receive a design. This pressed-out portion could be ground down with a flat slab to sever it from the ragged edges of the sheet, and also to make any desired perforations. The resulting turned-up edges could be hammered flat and they then would be as if cut by a shear.

Cushing explains how in the South-west ore was quarried and roasted in an open fire, and then

smelted in a sort of oven, the copper or other metal appearing finally at the bottom. Primitive furnaces of this kind he found in the Salt River valley. The singular thing about it is the almost total absence of metal objects in the ruins of the South-west. Aside from several small copper “hawk” bells found in the Salado and other Arizona ruins, I have not heard of any metal object that was not positively European being found in any mound or ruin of the South-west, with one exception.[259] In 1875 a man in my employ in southern Utah told me that several years before that time his uncle either had found in a mound in southern Nevada or northern Arizona, or had obtained from some natives who found it, a small gold image, which he had melted down for the value of the metal it contained. At the time I thought this tale belonged with that of the “lost mine,” but I am now inclined to see a fact in it. It is quite within bounds that one of the small Mexican or Chiriquian figures may have found its way up into this region.



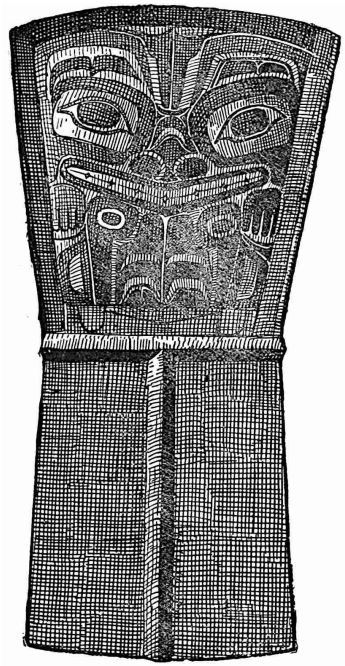
Side

SMALL FIGURE OF A FROG IN BASE METAL, PLATED WITH GOLD, CHIRIQUI

If there had been a wide knowledge of copper and other metal-working in the South-west in the olden time, there ought to be signs of it in the ruins other than an oven, and even the latter has been rarely found. Coronado and his chroniclers, Espejo, and all the list of early writers on that region, never, so far as I have been able to note, mention copper or any other metal articles. In fact, from the testimony of

literature, history, and actual excavation among the ruins so far as carried at present, we should conclude that none of the people of that region knew about metals or the manner of working them before the year 1540.[260]

New Jersey also furnished the Amerinds some copper and those living in the Atlantic region had ornaments, arrow-heads, and pipes supposed to have been made from it or from Lake Superior copper. Brinton attributes the scarcity of specimens in our collections to "its being bought up and melted by the whites, rather than to its limited employment."[261] A few examples have been found, but if they had been plentiful there should be discovered many implements antedating the arrival of the whites. On Brinton's hypothesis it would be necessary to assume that there were few made before the coming of the whites or they could not have been so easily bought up. As a matter of fact, the finds in copper articles compared with the area occupied are astonishingly few, if the natives turned off the amount of work some writers would have us believe.



Painted design in black, representing a sea monster with bear's head

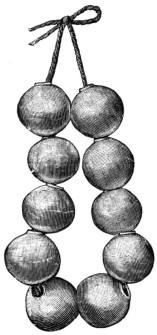


Painted design
representing a hawk

COPPERS FROM THE NORTH-WEST COAST. $^{1}/_{12}$
These are made of thin sheets of copper, and grow valuable by sale or exchange, according to peculiar customs. Some rise as high as $5000 or $6000

On the North-west coast an article of great importance and value is the “copper.” In former days these coppers were made of native metal obtained from the mines of that region, and they must have been made by cold hammering in the way that Cushing describes. To-day they are made of metal obtained from the whites. The coppers are thin plates of a peculiar shape; the nearest common thing that they resemble is a gauntleted glove with the fingers cut off and with the gauntlet the top. Across the wrist runs a ridge from one side to the other, and from the middle of this another ridge extends downward to the bottom, thus making with the first

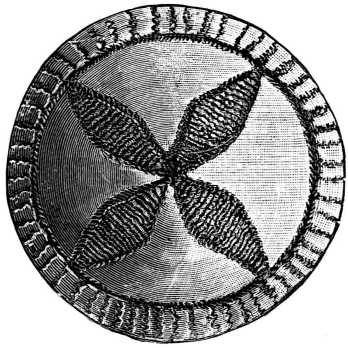
the shape of a letter T below the flaring part. “The top is called the face,” says Boas in his valuable and interesting account of the Kwakiutls, “the lower part the hind end. The front of the copper is covered with black lead, in which a face representing the crest animal (totem) of the owner is graven. These coppers have the same function which bank notes of high denominations have with us. The actual value of the piece of copper is small but it is made to represent a large number of blankets, and can always be sold for blankets. A white blanket at fifty cents is the unit. The value is not arbitrarily set but depends upon the amount of property given away in the festival at which the copper is sold. The oftener a copper is sold the higher its value.”[262] Every copper has its own special name, representing its peerless quality, or an animal; as, the killer whale, the bear face, beaver face, etc. As ability to destroy valuable property amongst these people distinguishes the great and wealthy, these valuable coppers are demolished piecemeal till only the portion with the T upon it remains. Sometimes all the fragments are bought up by another person, who rivets them together and the copper then has a greater price than ever. A broken copper is a more important piece of property than a whole one, because the possession of it shows that its owner is rich enough to destroy property. These plates are in use from Yakutat to Comox. Sometimes a copper is cast into the sea.



HOLLOW SILVER BEADS OF NAVAJO MAKE, ARIZONA Actual size

In the South-west it is not the house-building Pueblo who is the metal-worker *par excellence* but the semi-pastoral Navajo, who, besides his flocks and herds, possesses a wealth of silver ornaments that runs up into the thousands. Silver and copper ornaments are turned out by the native silversmith not only for his own people but for whites also, and a considerable trade exists between the Navajos and other Amerinds in this native jewelry as well as in blankets. If you desire to have an article made, you give the silver it is to contain, usually in dollar pieces, and an equal quantity as wages. The objects manufactured are globular and semi-globular buttons; bracelets like a letter C in form and shape, buckles, rings, plate for the bridle, tobacco canisters, flat buttons, beads, and various discs, and other ornamental objects. These are often engraved quite artistically, and sometimes elaborately. Copper seems to be a valued metal for ornaments, and I have seen copper bracelets on a Navajo woman made exactly the same as silver ones. The Navajo silversmith is up to a trick or two as well as his white neighbour. At

Manuelito there was a white trader who often sold Navajo bracelets to passengers from the railway trains that ran within a hundred feet or less of his door, and he was a man who prided himself on “square” dealing. One day a gentleman who had purchased several silver bracelets rushed in full of ire, demanding the return of his money for the worthless bracelets which he threw upon the counter. They were copper. The trader took down a string containing a number, from which the returned ones had been originally taken, and which he had purchased for silver, and found that every one was copper. They had been thinly washed over by the Navajo smith with silver.



Engraved button



Bracelet
Usually about 2½ inches long

NAVAJO SILVER WORK, ARIZONA

It has sometimes been suggested that the Navajos learned their metal-working from the Pueblos, but if so it was a lesson obtained in quite modern times, for the Pueblos themselves, as has been mentioned, appear to have known nothing about the working of metals before the arrival of the Spaniards. The art of metal-working both among the Navajos and the Pueblos is probably a modern acquisition. Washington Matthews, writing about 1883, says: "Old white residents of the Navajo country tell me that the art has improved greatly within their recollection."[263] It is likely that the Navajos, having a keen perception of mechanical matters, had wrought copper to a limited degree and that through their intercourse with, and absorption of, Pueblo tribes, this tendency was developed by a certain amount of knowledge in this line which the Pueblos acquired from Mexicans who followed in the train of the early Spanish explorers; but this skill was not given a real impetus till after the South-west fell into

our possession, when tools and trade rapidly developed.[264]

When in 1871 I encountered Navajos for the first time, on their way to trade with the Mormons, I do not remember seeing them have any silver ornaments. This was so soon after their liberation from government confinement following their war with us that they were, naturally, very poor. But if they had before possessed much silver they would have concealed it, and by the time I saw the ones referred to they would again have been wearing it and trying to trade it for horses, which they sadly needed. The Navajo silver-work is distinguished by an extremely artistic quality. Their tools and appliances are very rude and simple. As their method of operation is probably similar to that of Amerinds who have not been observed as closely, I will condense here some of the important details as given by Washington Matthews.[265] Only a few have attained a degree of proficiency that enables them to make large hollow articles, like flasks and the like, but there are many who can turn out bracelets, buttons, buckles, etc. Their appliances consist “of a forge, a bellows, an anvil, crucibles, moulds, tongs, scissors, pliers, files, awls, cold chisels, matrix and die for moulding buttons, wooden implements used in grinding buttons, wooden stake, basin, charcoal, tools and materials for soldering (blow-pipe, braid of cotton rags soaked in grease, wire, and borax), materials for polishing (sandpaper, emery paper, powdered sandstone, sand, ashes, and solid stone), and materials for whitening (a native mineral substance—almogen—salt and water).” The forge is built up with several old boards, an old box, or, when these cannot be procured, of sticks. The nozzle of the bellows, being wood, is kept back from the fire

several inches and a continuation built in the mud with which the fire-bed is constructed. The bellows is a tube of goatskin, a foot long and ten inches in diameter, distended by two or three wooden hoops. The back of it is a disc of wood with a valve in it. The nozzle is of four pieces of wood tied together and having a hole an inch square through the centre, the outside being dressed off till it is approximately round. Any old piece of iron, like the king-bolt of a wagon, driven into a log serves for an anvil, though in the absence of this a hard stone is sufficient. They make their own crucibles of clay, generally three-cornered, about two inches in every dimension, and baked hard. “The moulds in which they cast their ingots, cut in soft sandstone with a home-made chisel, are so easily formed that the smith leaves them behind when he moves his residence.” “Metallic hemispheres for beads and buttons are made in a concave matrix by means of a round-pointed bolt.” Several matrices are made on a single bar of iron and a bolt that will fit the smallest is sufficient to work all. They prepare charcoal by building a large fire, and when it is “reduced to a mass of glowing coals they smother it well with earth and leave it to cool.” Blowpipes are made by themselves out of brass wire hammered flat and then bent into a tube. The engraving and chasing of the objects made are done with the sharpened end of a file, or any other suitable sharp piece of steel. It will be seen from the foregoing that the Navajo silversmith is dependent to a very great extent on materials and tools obtained from the whites, and without these the practice of his art would be difficult. Schools for mechanical processes like dyeing, metal-working, etc., would accomplish much good among these people. They could readily be

taught to use the lathe and other tools, and would become good metal-workers.



KWAKIUTL CHIEF HOLDING HIS COPPER, NORTH-WEST COAST

The value of a copper is expressed in white single blankets of American make at 50 cents each. It is rated according to the amount of property given away at the festival where the copper is sold, and each sale adds to its value proportionally. He who can break a copper and cast away the fragment is considered great.

Prescott says of the Mexicans: “They were as well acquainted with the mineral as with the vegetable treasures of their kingdom. Silver, lead, and tin they drew from the mines of Tasco; copper from the mountains of Zacotollan. These were taken, not only

from the crude masses on the surface, but from veins wrought in the solid rock, into which they opened extensive galleries.... Gold, found on the surface, or gleaned from the beds of rivers, was cast into bars, or, in the form of dust, made part of the regular tribute of the southern provinces of the empire."[266] Their mining was doubtless carried on by the fire-and-water process used by the Northern people, while gold from the river beds was possibly obtained in much the same manner as I have been told the Amerinds of Peru get it. Selecting a river that was known to be rich in the metal, a series of stone "riffles" would be arranged in the best place at the very lowest stage of the water. Then when the freshets came and swept the gravel across these rude affairs the gold would remain lodged there and on the subsidence of the stream could be readily taken out. There was undoubtedly a vast quantity of gold in the possession of the Mexicans and Central Americans, but this fact does not signify that they conducted mining operations on a large or continuous scale, for the metal had been accumulating, in the shape of idols and ornaments, for centuries. There was little lost or worn away, as they did not use it as a general medium of exchange. Their plumes in their head-dresses were often set in gold; rings of gold were worn in their ears and on their arms, and the same metal was wrought into a great many forms of ornament.

Cortes ordered, says Valentini, eight thousand arrow-heads of copper and they were "made ready for delivery in a single week." It seems, therefore, the Aztecs were accustomed to handling copper in considerable quantities. It is said they made a mixture of copper and tin which they used for tools, and certain implements and objects are found with a

percentage of tin in them, but nevertheless their keenest weapons and their most serviceable tools were made of obsidian, which was also the case with the Mayas. Their hardened copper was useful for some purposes, but they were unable to harden it sufficiently to sustain an edge. For cutting stone in two they used, as the Eskimo does to-day, a thin blade and sand. In their case the blade was copper tempered with tin, and in the Eskimo's case it was formerly probably a thin blade of bone, while now it is an old steel saw. Silver as well as gold and copper was known to the tribes of the Central regions of America, and lead also was one of their metals, though little was done with it. There is a tendency to exaggerate the mechanical as well as the art skill displayed in objects that were made on this continent, before the whites came, or that were not discovered till recently. The reason for this seems to be that we love mystery and it is too tame to refer the finds to the ordinary "Indian," who in the popular mind has no ability in any direction, so they are ascribed to that "mysterious" race that we have tried in vain to find some evidence of besides mystery. Daniel Wilson gives an example of how this mystery bubble bursts on the slightest accurate investigation. Some tools were found in the neighbourhood of Brockville, Canada, of which Dr. Reynolds, who exhibited them, stated: "There is also a curious fact, which these relics appear to confirm, that the Indians possessed the art of hardening and tempering copper, so as to give it as good an edge as iron or steel. This ancient Indian art is now entirely lost."[267] When these Brockville relics were submitted to careful examination it appeared that they were not "different in any material respect from the native copper of Lake Superior."[268] This was all

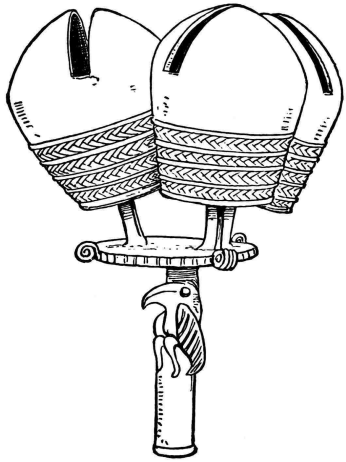
very well, but Wilson was not satisfied with Reynolds's ascribing these relics to the "present Indian race" and goes on to say: "The evidences of antique sepulture, however, are unmistakable; and other proofs suggest a different origin," and he proceeds to call in Squier's aid and ascribes them forthwith to our fabulous friends, the "Moundbuilders." One of his proofs was a terra-cotta mask found with the articles, in which he saw a skill beyond that of the "Indians," but which in reality, judging by the illustration he gives of it, is nothing remarkable. Yet Wilson continues: "It cannot admit of doubt that in them [the mining operations] we look on the traces of an imperfectly developed yet highly interesting native civilisation, pertaining to centuries long anterior to the discovery of America in the fifteenth century,"[269] etc. This conclusion he is assisted to by certain quotations from some of the old natives and from Claude Allouez. These convince him; but a little later on he quotes Alexander Henry's mention of his visit to the Ontonagon, who says: "I found this river chiefly remarkable for the abundance of virgin copper which is on its banks and in its neighbourhood. The copper presented itself to the eye in masses of various weight. The Indians showed me one of twenty pounds. They were used to manufacture this metal into spoons and bracelets for themselves."[270] If they made bracelets and spoons, they probably made other articles, "melting the lumps and spreading it in sheets" to smooth it with stones, as the chief described to Champlain.

The Chiriquians seem to have possessed a skill in metallurgical operations unsurpassed by any other people on the continent. Whether they used gold dust in quills, and T shapes of tin or copper for currency as did the Mexicans, does not appear, but

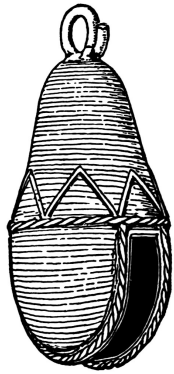
they were skilled in metal-working. They understood smelting, alloying, and plating, and apparently were extremely skilful at casting. As before noted, no weapons or implements have been found of metal, all the metal objects being ornaments, and "almost exclusively," says Holmes, "pendent ornaments." "They were, for the most part, cast in moulds, and in nine cases out of ten represent animal forms. A few bells are found, all of which are bronze. Pieces formed of alloyed metal are usually washed or plated with gold."[271] Many of these valuable relics of the past have been disposed of for their money value and duly melted up to be made into something modern. The gold is usually alloyed with copper in varying proportions, though pure metals were also used. From the fact that the alloy is so variable it would seem that the combination already existed before it came into the Chiriquian hands; that is, it was perhaps a natural combination.

Holmes believes almost all these metal objects were cast in moulds, as noted, but he mentions other processes by which they may have been made. They have the appearance of having been modelled in some plastic material, and then coated with clay, when by the action of heat the wax runs away, leaving the hollow clay as a mould to receive the metal. This is the *cire perdue* process. Small figures of resin, in all respects modelled like those found in metal, have been discovered in the graves. This seems to add to the probability of a Chiriqui acquaintance with the *cire perdue* process. Another method suggested is that the various metallic parts of a figure were enclosed in a clay matrix and then heated till the parts melted and joined, but this appears to be too uncertain and difficult to have warranted its practice. Still another method

advanced is the coating of a wax figure with sheet gold and melting the wax, when a hollow gold figure would be the result. This is possible but not probable. Yet one more suggestion is that the gold was reduced to an amalgam with mercury, and thus modelled, when the mercury being driven off by heat the gold figure would remain. One difficulty with this theory seems to be that there is no evidence that the Chiriquians knew mercury. As many of the objects are washed or plated with pure gold, it would seem that the pure gold was the most difficult to obtain, and that, as before stated, the gold-copper alloy was a natural one. There is neither engraving nor carving on these objects; and the objects themselves are the same crude productions that are indicative of pure Amerind art everywhere on the continent. Some are more crude than others, but all Amerind sculpture, modelling, and carving are essentially rude and primitive. In the form and artistic execution of the Chiriqui objects of gold and copper we may be positive that there is no European influence, whatever there may be in the method of production. It is probable that the objects are entirely native, and they offer another lesson that the tribes of North America were everywhere working and inventing, and gradually conquering the secrets of nature just as our ancestors did and just as we are still doing to-day; some doing more, others less; some being quick, and others clumsy, ignorant, and dull. The bells are usually of bronze, having the shape of our common sleigh-bell, and are frequently gold-plated. The bells found in Arizona are of this description but not plated.



TRIPLE BELL OR RATTLE OF GOLD FROM NEAR PANAMA



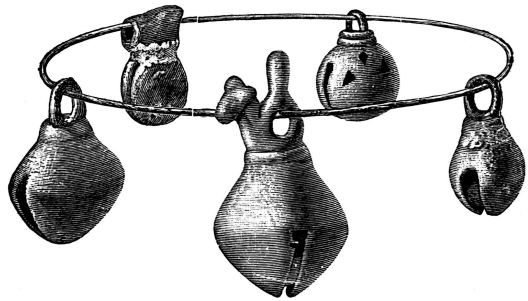
BRONZE MEXICAN BELL

Besides their sciences of mining and metallurgy, the Amerinds understood some others, like the manufacture of glue and cement, the production of paints and dyes, and astronomical reckonings. True, some of these are more properly classed as arts, but requiring knowledge that may be called scientific, they may be considered under that head. Paints were usually obtained from clays and ochres. I once traced to its source the red paint formerly used by the

Amerinds of southern Utah and found it in the second great bend of the Colorado River, about three thousand feet below the surface and about two thousand feet above the river, as the canyon is there about five thousand feet deep. The paint was in a cave the mouth of which opened on a little gulch, and the entrance was so small and narrow, and in such hard rock, that we could barely wriggle our way on our bellies, along the eighteen feet of passage, before we reached the cavern, thirty feet long, fifteen wide, and high enough for a man to stand erect in. There were several side passages leading farther, but this seemed to be the main cave, and all over the walls were the marks of the sharp sticks with which the Amerinds cut out the ochre. Our guide stated that it was customary to send in the boys and squaws after the paint. The ochre was of a rich red, but no match for the red lead and vermilion obtained by trade with the whites. The remote and difficult position of this cave and its narrow and repelling entrance show how eager the natives were to secure paint. At the time of our visit, however, the mouth was considerably overgrown with small brush, proving that for several years no visit had been made. In every region there were special places for obtaining paints, and Brinton states that in New Castle County, Delaware, the vicinity of streams now known as White Clay and Red Clay creeks furnished red, white, and blue clays in such abundance that they were called by the natives *Walamink*, or Place of Paint.[272] Charcoal was used for black.

Of dyes they had a fair assortment, but they were not able to obtain the brilliant hues they now secure by means of the “Diamond” and other aniline dyes. A black dye was made by the Navajos from the twigs and leaves of the aromatic sumac, a native yellow

ochre, and the gum of the piñon.[273] These same Amerinds have three different processes for dyeing yellow. The first produces a lemon yellow, the second an old gold, and the third still a different shade.



BRONZE BELLS, PLATED OR WASHED WITH GOLD, CHIRIQUI
These were cast in moulds. The largest is 1¼ in. high and ¾ in. diameter

Red dyes are also made by the Navajos; and the Mokis possess the skill to produce several colours, one being a deep, rich blue. These processes are all too long to admit of description here.[274] The Lenapé and other Eastern Amerinds used the juice of the wild, sweet-scented crab apple to fix the dyes, while among the Mokis the liquid generally used is urine. It must have required long and careful experiment before these people acquired their knowledge of dyeing, for some of the preparations are rather intricately compounded, but here is evidence once more that the Amerind was by no means a vagabond, but was constantly at work devising and inventing. Glue they made from fish in some localities, and in others by boiling down the skin from the head of the bison or elk, or the hoofs of animals. Cement for attaching arrow-heads and for other purposes was made by combining pine gum with other substances. In all these mixtures and combinations the

proportions were either guessed at or measured, never weighed, for there was no scale or balance in use, so far as now known, in North America, though certain round stones from Mexico in Madrid have been supposed to be weights.

Remarkable progress had been made in many tribes in the matter of calculating time, and the Mayas and Mexicans had advanced so far that they were able to calculate the length of the year with accuracy. What implements they employed is not known, but they were probably of wood and stone, the latter of the form of the calendar stone, before mentioned. Other tribes farther north made their calculations in a less perfect way, yet they did and do keep time records. The Sun priests of the Mokis use "what may be called a calendar stick," says Fewkes. "These sticks are about a foot and a half long, and are divided into two parts, one section being round, the other flattened on one side. The round section is girt by fifteen shallow parallel grooves, and occupies about a third of the whole length of the stick. The remaining two-thirds of the stick have a number of parallel grooves or notches cut upon the flattened surface. Five of the latter grooves, which are situated at equal distances, are deeper than the remaining, and between each pair there are four smaller parallel grooves arranged at equal distances. The space in which these grooves are cut occupies about one-half of the flat portion of the stick. The remaining half, or that more distant from the round section, is divided into two parts, which are separated by a rectangular space, in the centre of which there is a depression called the *nā-tā-l-tci*. On one side of the depression there are three notches, on the other seven."[275] The Eastern Amerinds computed time in their own several ways,

some computing twelve, others thirteen moons to the year, usually reckoning from one planting time to another. The Dakotas, Chipeways, and others reckoned by winters.

In the Zuñi country, still existed a few years ago, if it does not to-day, a primitive astronomical station. It is a rude little structure containing an erect slab of sandstone adorned with the circular face of the sun, and it is used, as it was long ago, for determining the Zuñi chronology.

The Aztec year had eighteen months of twenty days each and that of the Mayas was the same. The Maya week had thirteen days, and the days were counted from one to thirteen continuously throughout the year—that is, each month did not begin with 1 but with whatever number happened to fall on that day; it might be 2 or 5 or 8 or 13 or in fact any number up to 13. The eighteen months gave them only 360 days, but they intercalated at the end of each year the five days necessary to round it out. At least so the early Spanish writers state, though Thomas, who has given close attention to this subject, has said that he felt doubtful on that point. [276] Prescott states without question, concerning the Aztecs: “Five complementary days, as in Egypt, were added, to make up the full number of three hundred and sixty-five. They belonged to no month and were regarded as peculiarly unlucky. A month was divided into four weeks of five days each.”[277]



SMALL METAL FIGURE, CHIRIQUI
Copper-gold alloy

The six hours over the 365 days which we make up in our leap year the Aztecs allowed to run to the end of their fifty-two year cycle, when they intercalated it all at one time, the actual period being twelve and one half days. This brought them “within an almost inappreciable fraction,” says Prescott, “to the exact length of the tropical year, as established by the most accurate observations.”[278] The Aztecs had a second calendar used by the priests for keeping their own records and making their own calculations, and doubtless the Maya had the same practice.

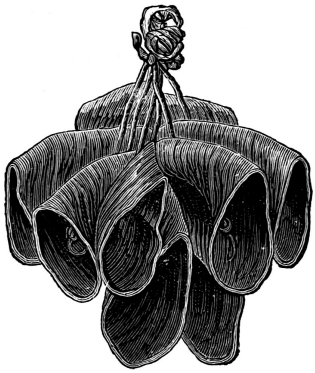
The Cakchiquel year consisted of 366 days. That of the Maya was 365. The former, therefore, says Goodman, “could have no fixed date for its beginning, relative to solar or terrestrial phenomena, but must revolve regularly through the seasons.... The year might begin at the summer or the winter solstice, at the vernal or the autumnal equinox, or any other period.”[279]

A great Maya event, which Goodman cites, was “the observance of the 280,800th year of their era.... Nearly all the other dates in the inscriptions of Copan and Quirigua either lead up to or recede from it. It was the beginning of the last quarter of their

grand era, the completion of which, it is perhaps needless to say, they did not, as a nation, live to see."[279] But when we touch this subject of chronology it at once opens up a vast and complicated field of investigation. Goodman goes on to say: "How account then for such an immense period?... The most reasonable answer that suggests itself is that they had a juster appreciation of the antiquity of the earth than most nations have had, and that they began their chronology with the supposed date of its creation.... I look upon the Maya chronological scheme as ranking among the most marvellous creations of the human intellect."[279]



SILVER PLATE WITH SPANISH COAT OF ARMS,
from a mound in Mississippi



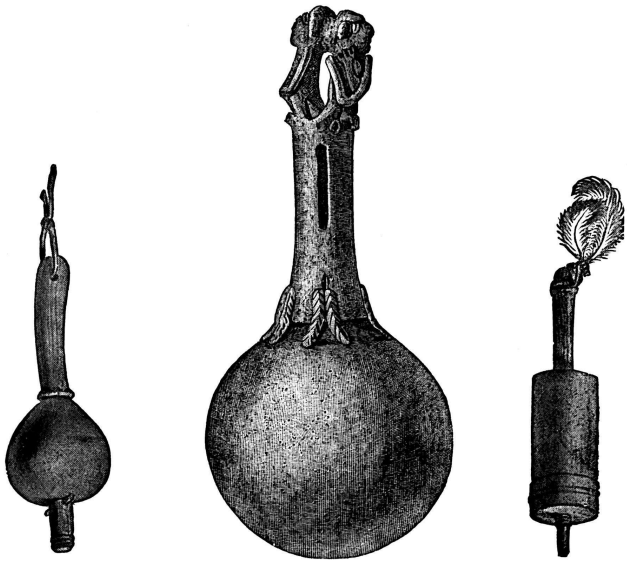
MOKI RATTLE OF ANIMAL HOOFS. ⅓

CHAPTER XI

MUSICAL INSTRUMENTS, MUSIC, AMUSEMENTS, AND GAMES

THE popular conception that there is no fun in red men is erroneous. All of them, far from being taciturn, silent, morose, and lacking desire for amusement other than scalping or torturing captives, are full of humour and are fond of fun. To strangers, however, they are often silent. In every village there is a great deal of amusement, and while the race is deficient in musical instruments, and the music they produce, if it can be designated by that term, is usually apart of some ceremonial, they do sing and the singing is accompanied by rattles and drums. These instruments, with a sort of flute or flageolet and bells and whistles, make the sum-total of their musical apparatus. No stringed instrument, it was believed, was known on the North American

continent before the Discovery, though recently Lumholtz has found a primitive musical bow among the Huichols in Mexico that seems to show no outside influence. Their drums were usually made out of a hollow log and were of various sizes, though some tribes also used a sort of tambourine-drum formed by stretching a piece of hide over a hoop. In the case of the Mokis, the large drum was made by stretching hide over the ends of a hollow log by means of strings on the outside running from the edge of one skin to that of the other, zig-zag. These drums are about twenty inches in diameter by some three feet long, and the ones I have seen had an appearance of age that seemed to indicate a remote origin. Rattles are frequently made from deer hoofs, or from hoofs of similar animals, and also from turtle shells, and garments are trimmed with hoofs so that the movements of the wearer cause them to strike together with a musical sound. Sometimes the hoofs are attached in groups of three or more to the ends of a short stick which is shaken to produce the desired sound. This is a form specially in vogue among the Tlinkits, and these rattles are one of the articles of trade with the tourists in the North-west. Another form is a gourd or clay globe containing pebbles or something similar. Rattles of this kind are common in the ceremonials of the Mokis. Bells, as we have seen in the preceding chapter, were made by tribes of the Central American region of copper in the so-called “hawk’s-bell” shape, but it is not absolutely certain that this form of bell was not derived from European contact.[280] No other form of bell was known to any of the natives.



Gourd, Ojibwa Earthenware rattle from Chiriqui. ½ Tin, Ojibwa
AMERINDIAN RATTLES

Whistles were made of pottery and wood and of human and other bones,[281] and were similar to our common whistles with one or more holes in the tube for changing the note. The flute was of wood, generally of cedar, which is considered a sacred wood. It was eighteen or twenty inches long and was often ornamented with carving and tufts of feathers, etc. In Mexico, some were made of terra cotta.



OMAHA LARGE FLUTE
Made of red cedar. Flutes were also made of eagle wing bones and of reed

It is certain that the sounds produced on these various instruments would in no way suggest or resemble what is understood by music among people of European origin, and it is also probable that our music when first heard by Amerinds seems to them more like wailing and lamentation than sounds of pleasure. I remember an evening long ago, in Arizona, when we had the interesting companionship of several intelligent Navajo chiefs, who entertained us by singing, accompanying themselves by drumming on the bottom of one of our camp kettles. At length someone of our party exclaimed, “Now let’s give them *Home, Sweet Home*,” and this song was accordingly rendered in a way that should have moved the savage to tears, but, though the firelight was brilliant, I failed to detect any; indeed their

expression appeared to resemble that which a professional musician of our own race might have exhibited. They were perfectly satisfied with a single selection, and they politely said *Buéno*. The Navajos have a peculiar drum, the basket drum, described by Washington Matthews.[282] It is a bowl-shaped basket made according to special rules and rites, and inverted is used as a drum in certain ceremonials, being beaten by a stick, also manufactured in a special way, and according to long-established religious rites. Whenever a ceremony is completed this stick is always pulled apart during an appropriate song, and its fragments "deposited, with prayer and ceremony, in the fork of a cedar tree or other secure place." It is made from yucca leaves, four being the prescribed number, and every one of these must be absolutely free from blemish. One from each cardinal point of the compass is necessary, and the making of the drumstick from them is a serious matter, even the rejected fragments being disposed of in some safe place with a benediction:

"Thus will it be beautiful.
Thus walk in beauty, my grandchild."

"In none of the ancient Navajo rites is a regular drum or tom-tom employed," says Matthews. "The inverted basket serves the purpose of one."



DRUM OF TERRA COTTA, CHIRIQUI

"The musical instruments," says Bandelier, "which, while still in use in Mexico, are known to antedate the Conquest, are but three in number, one of which is already falling into oblivion. It is the *tozacatl* (sounding-cane), described to me as a long cane, bent round like an Alpine horn. I never saw one, but its sound is said to be a sonorous bellowing. The other is the *chirimia*. It is made of dark brown wood, called *tepehuaje*, brought to Cholula from Matamoras-Yzucar, or near Atlixco. Its length is 0.46 metre (about 18 inches) and its width at the mouth is 0.06 metre (about 3 inches). It has eleven holes irregularly arranged, and the mouthpiece is a thin plate of horn on a stem of brass. The noise produced by this instrument is a fit accompaniment to the

shrill Indian voices, being horrible beyond all description.... The big drum, the *tlapan-huehuetl*, was formerly made out of the trunk of a tree properly hollowed, over which, at one end, a deerskin or some other dried hide was stretched. All the older authors make more or less mention of this instrument, but more particularly Bernal Diez de Castillo, who says, when describing the upper platform of the principal mounds of worship of Mexico: 'And there they had an exceedingly large drum, which, when beaten, gave a sound as if from the infernal regions, which was heard at more than two leagues off, and they said that the skin was that of large snakes.'"[283] The *teponaztli* was a wooden instrument with two tongues that were beaten with a stick. Conch shells were also used as musical instruments. Some of these were of very great size.

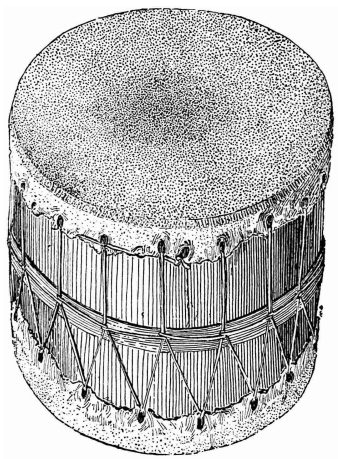
The Eskimo drum is like a tambourine, a skin stretched over a hoop. Some of the Chiriqui whistles were shaped like a top, while others were straight with finger holes. These various types were distributed over the whole area of the continent, the drum and the rattle always predominating.

The Amerind singing at first seems extremely monotonous to our ears and the impression is that all tribes sing alike, but each stock has its own methods and peculiarities. A foundation principle with all in the men's singing seems to be an explosive quality of vocalisation—that is, violent explosive tones instead of, as with us, tones long drawn out. The Moki seems generally to sing nothing but "ho, ho, ho, ho, he, he, he, he, hay, hay, hay," etc., and he has quite a different rhythm from the Ute, while the singing of the Navajo, when the singer opens out all the stops, is more like the voice of a cat in the back yard than

any other sound in civilisation that I can think of. Farther north the sounds change again: the Tlinkit vocalisation suggests death by strangulation.



MENOMINEE TAMBOURINE DRUM
A common form with many tribes

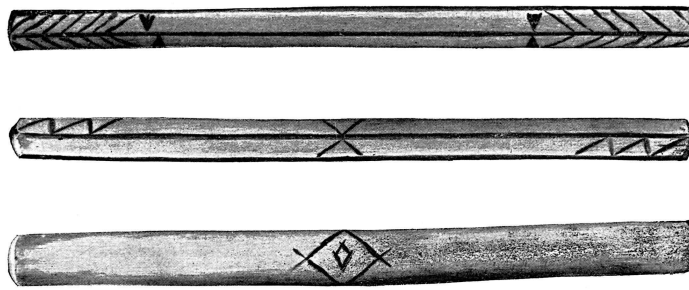


OMAHA BOX DRUM

A common form with most tribes. Originally made from a hollow log

Fillmore states that the Navajo songs were the most primitive of any he studied. “They form in fact the connecting link between excited howling and excited singing. The quality of tone is indescribable, being more like a yelp than anything else; but the intervals yelped are unmistakably those of the major chord or of the minor chord. The tone-quality is that of shouting, or even of howling, but the pitch-relations into which they tend to fall are those of the major chord.... Some of the Navaho songs are illustrations of melody so primitive as to bring us very near to the beginning of music-making.... I started my investigations with the impression that there might be essential differences in structure between the Indian music and our own. I studied the Indian music for ten years with the utmost care and thoroughness of which I was capable. I have failed to find one single interval in Indian music which we do not use. It is true, I have often heard Indians sing these intervals out of tune; but this is a phenomenon by no means confined to savage or uncivilised races. In every such case, when I was singing with Indians and was able to get at their real intentions, I have found that they meant to sing exactly the interval we should sing in their place.... I have also found that increase of power is almost always accompanied with increased elevation of pitch, and diminution of intensity with a lowering of pitch, seemingly without the Indian being aware of it.... The evidence of the essential unity of all music, from the most primitive to the most advanced, is cumulative. The Navaho howls his song to the war gods directly along the line of the major chord; Beethoven makes the first theme of his great ‘Eroica’ symphony out of precisely the

same material. The Tigua makes his ‘Dance of the Wheel’ out of a major chord, and its relative minor; Wagner makes Lohengrin sing ‘Mein lieber schwan’ to a melody composed of exactly the same ingredients. In short there is only one kind of music in the world.” Like everything else pertaining to man, it is a matter of development modified by circumstances. Fillmore’s excellent investigation[284] in this line only proves again that man is the same in all climes and ages since first we get track of him, so far as his fundamental make-up is concerned. Variations and differences are only those which come from a development of latent talents or possibilities. He always moves, when he moves, along certain lines that are prearranged by his constitution and his environment. He may stop where circumstances direct, but he will have stopped where others stopped before.



SET OF PLAYING STICKS

There is always a great deal of repetition in the songs. The Amerind seems content to go over and over again the same few notes. In some tribes the poet and singer stands in the interior of a circle formed by all the members of the tribe—men, women, and children—around a cedar tree from which all but the top branches have been removed. A time of moonlight is chosen, and I remember well

such a night with some Pai Utes, of Arizona. The poet recited his refrain, then all took it up and repeated it in song, circling round and round the cedar with their peculiar shuffle, repeating and repeating. I joined the circle and the singing till I became tired, and finally left them still enjoying it. The poet would give out some such stanza as

"No rabbit kill,
No rabbit eat,"

and it would serve the purpose for a considerable time, when he would be obliged to announce a new one.

Mooney has translated some of the songs of the Arapahos used in the Ghost or Resurrection Dance, and I give several as specimens of their style[285]:

"O, my children! O, my children!
Here is another of your pipes—He eye!
Here is another of your pipes—He eye!
Look! thus I shouted—He eye!
Look! thus I shouted—He eye!
When I moved the earth—He eye!
When I moved the earth—He eye!

"The sacred pipe tells me—E yahe eye!
The sacred pipe tells me—E yahe eye!
Our father—Yahe eye!
Our father—Yahe eye!
We shall surely be put again (with our friends)
E yahe eye!
We shall surely be put again (with our friends)
E yahe eye!
Our father, E yahe eye!

Our father, E yahe eye!

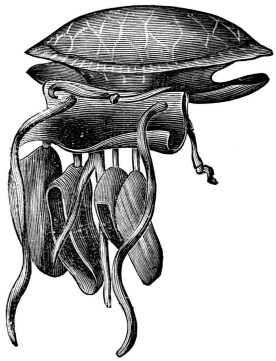
"The cedar tree, the cedar tree!
We have it in the centre!
We have it in the centre!
When we dance,
When we dance,
We have it in the centre!
We have it in the centre!

"My children, my children!
It is I who wear the morning star on my head!
It is I who wear the morning star on my head!
I show it to my children!
I show it to my children!
Says the father!
Says the father!

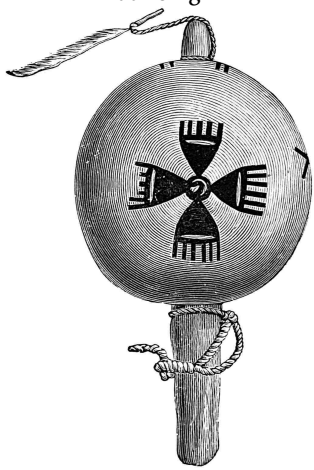
"With the ba-qati wheel I am gambling!
With the ba-qati wheel I am gambling!
With the black mark I win the game!
With the black mark I win the game!"

"This (last) song is from the northern Arapaho. The author of it in his visit to the spirit world, found his former friends playing the old game of the *baqati* wheel, which was practically obsolete among the prairie tribes, but which is being revived since the advent of the Ghost Dance.... The game is played with a wheel (*baqati*, large wheel) and two pairs of throwing sticks.... It is a man's game and there are three players, one rolling the wheel while the other two, each armed with a pair of throwing sticks, run

after it and throw the sticks so as to cross the wheel in a certain position."[286]



Turtle shell, with hoofs of goats or sheep. Fastened to the rear of the right leg near the knee in dancing



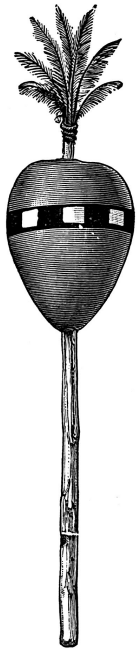
Painted gourd with wood handle

PUEBLO RATTLES. ⅓

Among the Mokis, some of the old men are custodians of songs, according to the societies to which they belong. Such a man is leader of the singing. It is he who knows the old songs. He meets a

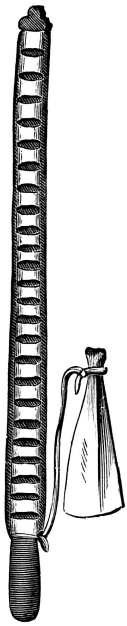
lot of the young men at a specified house, and placing an old tin pan on the floor to spit in while smoking cigarettes, and beside it a candle for light, they group themselves in a circle, sitting on the floor, while the instructor takes his place on a stool at the large double-headed drum at one end. He runs over a passage, beating time on the drum, and then all join in with a vigour that well-nigh raises the roof. There was something fine in the force and power with which these songs were rendered, and it was the only time in my experience that my artistic sense was stirred by Amerind singing. Later, on the same evening as the gathering mentioned, when the same young men were rehearsing further and also practising the dance with some small girls in a neighbouring house, the singing lost its fire and was not at all thrilling. Before the rehearsal with the young men the "choir master" rehearses by himself. From my house at Tewa, on the "East Mesa," I could hear just after dark, every evening, through the stone wall, continuous singing. It was in the next room or "house," the entrance to which, though on my level, was around a corner and not connected in any way with my balcony. I had a ladder of my own. I was curious to see who it was that was so devoted to this amusement. I mounted to my house-top by means of steps on the end of a wall, and then I could look down my neighbour's chimney, from which little smoke and much sound were arising. I could see plainly the singer, an old man, sitting cross-legged before the fire, its light softly illuminating him, with a small double-headed drum between his knees, which he was vigorously beating in accompaniment to a "HO, ho, HO, ho, HO—HE, he, HE," etc. When I went afterward to the house of Anawita, the war-chief, to the rehearsal described, this old fellow and

Anawita were the leaders of the songs. They were practising at that time for the Somaikoli or Soyaita ceremony.



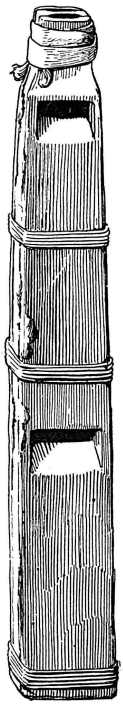
ZUÑI DANCE ORNAMENT ⅛

Yellow gourd with band of black and white squares. A stick is passed through it for a handle. Generally used in social dances



MOKI NOTCHED STICK ⅛

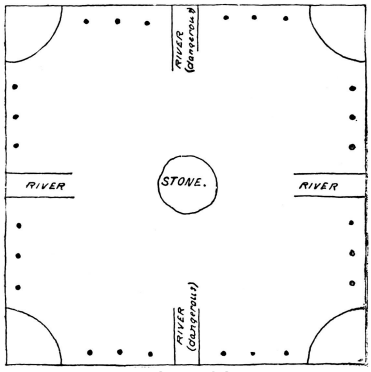
With shoulder-blade of deer or sheep for scraping it to make noise



KWAKIUTL DOUBLE WHISTLE, WITH FOUR VOICES. ¼

The Amerind is fond of singing. He sings in ceremonials, sings in camp, bursts out in yelps as he rides across country, and the women amongst the Pueblos sing a shrill chant while they are grinding corn. Men of some tribes sing at times without knowing what they are singing. I once had a Uinkarets Ute with me in Arizona, and at night this man would build a fire a few yards from us, and sitting by it would sing the words *Lola-my, lola-my, lola-my* with great vigour and gusto over and over and over again. When I asked him what the words meant, he said he did not know, nor could he explain just why he performed thus, but it was probably a

gambling chant. Singing is used at night for driving away evil spirits that may be near. We had four Pai Utes once travelling with us for a number of weeks, and almost every night, along in the middle, one would wake and begin to sing in a low voice, then a second would join, and a third, and so on till all were engaged, their voices rising gradually, and finally as gradually diminishing till they ceased altogether.[287] As this performance woke us up there were protests against it, but they were of no avail. The red men declared they did it to drive off the "woonūpits," or spirit of evil, and we were forced to partake of their protection. Beginning a song low and rising slowly is an effect often used. Fewkes mentions something of the kind. "At the termination of this ceremonial smoke," he says, "the four priests nearest the bowl picked up the small gourd rattles and began a low, rapid rattling. This continued for a few moments, and then the priests began a song, at first low, rising gradually and increasing in volume." Fewkes recorded many songs by means of the phonograph. The Harriman Expedition recorded a number of Tlinkit songs, and afterwards some of these were reproduced for the benefit of men of the same stock farther north, who immediately recognised the melodies and, as their hilarity testified, enjoyed them hugely, though they had never before heard a talking machine.



THE AWL GAME

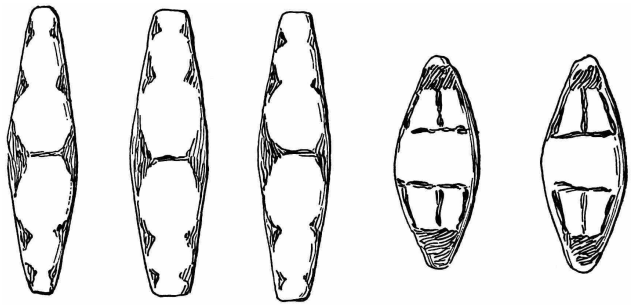
Most Amerind songs are connected with ceremonials, and some are imported or adopted. Ceremonials are not always sacred. Many of them are full of amusing features intended to entertain the onlookers. The attendance at a camp or village on a ceremonial day is for amusement as much as anything else.

The different tribes of a locality expect to meet friends then and enjoy social intercourse. The Amerind is fond of games, races, and all forms of sport on which a wager can be laid. A game without a stake would be no game at all for him. He must put up something to lose, and I once noticed after a distribution of goods among individuals of a certain tribe that within twenty-four hours a few had all the goods. In modern times many Amerinds play cards. Their own games are numerous. In the “awl game,” played chiefly by women, “the players,” according to Mooney, “sit upon the ground around a blanket marked in charcoal with lines and dots and quadrants in the corners as shown in illustration on preceding page. In the centre is a stone upon which the sticks are thrown. Each dot ... counts a point, making twenty-four points for dots. Each of the

parallel lines, and each end of the curved lines in the corners, also counts a point, making sixteen points for the lines, or forty points in all. The players start from the bottom, opposing players moving in opposite directions, and with each throw of the sticks the thrower moves her awl forward and sticks it into the blanket at the dot or line to which her throw carries her. The parallels on each of the four sides are called 'rivers,' and the dots within these parallels do not count in the game. The rivers at the top and bottom are 'dangerous' and cannot be crossed, and when the player is so unlucky as to score a throw which brings her upon the edge of the river (*i. e.*, upon the first line of either of these pairs of parallels) she 'falls into the river' and must lose all she has hitherto gained and begin again at the start. In the same way, when a player moving around in one direction makes a throw which brings her awl to the place occupied by the awl of her opponent coming around from the other side, the said opponent is 'whipped back' to the starting-point and must begin all over again.... The game is played with four sticks, each from six to ten inches long, flat on one side and round on the other. One of these is the trump stick and is marked in a distinctive manner in the centre on both sides, and is also distinguished by having a green line along the flat side, while the others have each a red line.... There are also a number of small green sticks, about the size of lead pencils, for keeping tally. Each player in turn takes up the four sticks together in her hand and throws them down on end upon the stone in the centre. The number of points depends upon the number of flat round sticks which turn up.... Only the flat sides count except when all the sticks turn round side up. On completing one round of forty points the player takes

one of the small green tally sticks from the pile and she who first gets the number of tally sticks previously agreed on wins the game."[288]

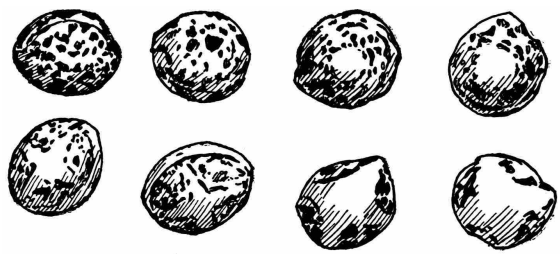
Another game, widely spread and in some respects resembling the Mexican game of *patolli*, is thus described by Fewkes as he found it among the Mokis[289]:



Set of bone dice, Arapaho. Length, 1¾ to 2¼ in.



Set of counting sticks, Blackfeet. Length, 5½ in.



Set of plum stones, Arikaree. Diameter, $^{11}/_{16}$ in.

AMERIND GAMBLING TOOLS

"This game, *totolospi*, resembles somewhat the game of checkers, and can be played by two persons or by two parties. In playing the game, a rectangular

figure divided into a large number of squares is drawn upon a rock, either by scratching or by using a different-coloured stone as a crayon. A diagonal line, *tuhkiota*, is drawn across the rectangle from north-east to south-west, and the players station themselves at each end of this line. When two parties play, a single person acts as player, and the other members of the party act as advisers. The first play is won by tossing up a leaf or corn husk with one side blackened. The pieces which are used are bean or corn kernels, stones and wood, or small fragments of any substance of marked colour. The players are stationed at each end of the diagonal line, *tuhkiota*. They move their pieces upon this line but never across it. The moves which are made are intricate and the player may move one or more pieces successively. Certain positions entitle him to this privilege. He may capture or, as he terms it, kill one or more of his opponent's pieces at one play. In this respect the game is not unlike checkers, and to capture the pieces of the opponent seems to be the main object of the game."

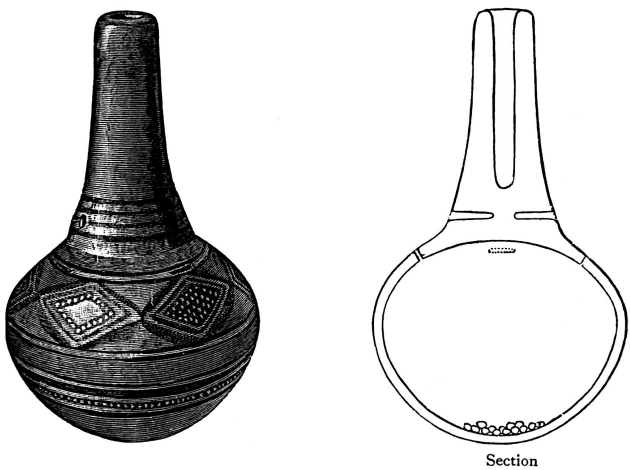
Horse-racing is a great sport among all Amerinds and much valuable property changes hands on these occasions. There are also foot races. Anything they can bet on constitutes a game, and they are much like many white men in this respect. Arrows are shot into the air to see who can shoot out of sight, or they are shot at a mark and dexterous archers try to split the shaft of the preceding shooter. Or they throw arrows or bows over the ground or the snow to see who can throw farthest. In this line the Iroquois had the game known as "snow snake," wherein a specially formed stick was caused to glide over the snow or ice. The Arapahos used for a similar purpose slender willow rods about four feet long peeled and

painted and tipped with a point of buffalo horn. This is swung from one end like a pendulum and then let fly with a sweeping motion.

Among the Pai Utes a common gambling game was played by four men sitting down in two rows opposite each other, that is, two on a side, and about five feet apart. In front of each side was a row of little sticks placed diagonally in sand heaped up, the ends sticking out toward the side to which the lot belonged. Two bits of bone formed the pieces, one being plain and the other having a buckskin string around it. These pieces were about two and a half inches long, tapering toward their ends. The leader of one side tosses both pieces into the air and, catching them, crosses his arms, pressing the fists against each shoulder. The point is for the other side to guess in which hand is the piece that is marked with the string, and the diagonally opposite player chooses. He does not at once indicate a choice, but sways his body back and forth, his right hand extended and waving to and fro across the opponent's breast, and slapping his own chest, all the while fiercely uttering a gambling song. Finally he would point directly at the hand he chose, and if his guess were correct he received a tally stick, if not, the other side got one. The side that wins all the tally sticks is victor and carries off the stakes, which are usually put on the ground at one end of the group. This is something like the "hunt the button" game of the prairie tribes described by Mooney.[290] "It is the regular game in the long winter nights after the scattered families have abandoned their exposed summer positions on the open prairie and moved down near one another in the shelter of the timber along the streams.... The players sit in a circle around the tipi fire, those on one side of the fire

playing against those on the other. The only requisites are the ‘button,’ usually a small bit of wood, around which is tied a piece of string or otter skin, with a pile of tally sticks.... Each party has a button, that of one side being painted black, the other being red. The leader of one party takes up the button and endeavours to move it from one hand to the other, or pass it on to a partner, while those of the opposite side keep a sharp lookout and try to guess in which hand it is.” This game is played by both sexes but never together.

Still another game which was a great favourite all over the country, and is yet, especially among the women, is the “plum stone” or dice game. Five or six dice made of bone or plum stones, a small bowl or basket, and the usual tally sticks are the implements. Two of the dice are alike in shape and marking, while the others are different from these but like each other. The dice are tossed up and the count made according to the way the marks and blanks fall.



TERRA COTTA RATTLE FROM CHIRIQUI

The camps and villages are particularly lively in winter, when there is not much to do in the way of hunting, farming, or fishing. The sound of the drum, gambling songs, and rattles make the evening merry where the village is one of skin tipis or other light structures, but among the Pueblos the walls of the houses are so thick that sounds do not easily come through. The great drum is penetrating and its deep "bum-bum-bum" could be heard vibrating on the winter air, but other sounds were muffled or extinguished altogether by the walls. One moonlight evening when I arrived before the town of Oraibi, about eight o'clock, not a single sound was distinguishable, and to judge by appearances, the place was a deserted ruin, till the dogs got a sniff of our approach and then pandemonium ruled so far as they were concerned. Many tribes have an assembly house, where there are various congregations in the winter evenings, to sing and to dance. Among the Pueblos these congregations, when there are women or girls involved, take place in an ordinary dwelling; the kiva, which is council room, club, and society lodge, seldom being open to women. An orchestra that performed in a Kabinapek assembly hall described by Stephen Powers is worth mentioning. "The orchestra, eight in number, all young men, were squatted together opposite the entrance, four facing four. Between them was a hollow slab, serving as a kind of drum to be beaten by a drummer with the naked foot, and each of them held in his right hand a little stick, split half way down, to be used as a clapper in keeping time. The dancers were all young women, who stood in a curved row in front of the orchestra." This orchestra sang a chorus accompanied by the clappers they held. "Like everything they sung it has no meaning. They all

sung in a high falsetto voice, the women especially, so that they were less agreeable to listen to than the men. The sharp monotonous clacking of the sticks and the dull tunk, tunk of the slab drum were execrable." He states that they kept perfect time, however, and also that "there was one short passage in this chorus which when chanted by the men alone was one of the most moving I ever heard. These three rude, barbaric, and wholly unintelligible syllables, hu-di-go, were trilled and prolonged out with a sweet, soft, and wild melodiousness that I shall not forget to my dying hour."[291]

The Eskimo, despite the severity of their surroundings, are a merry people, and have many diversions. Football, strange to say, is a favourite pastime, but neither their method nor their ball would pass muster with a college expert. The ball is a pudgy affair from three to seven inches in diameter, and is either kicked or whipped along. The whip is a short stick with several loops of seal thong at the end. The game, according to Turner, is a favourite with all. Throwing stones at a mark is also a pastime. Another is a kind of wrestling or struggling with each other, such as is in vogue with almost all the tribes of the continent. Turner says: "The opponents remove all their superfluous garments, seize each other around the waist and lock hands behind each other's backs. The feet are spread widely apart and each endeavours to draw, by the strength of the arms alone, the back of his opponent into a curve and thus bring him off his feet. Then with a lift he is quickly thrown flat on his back. The fall must be such that the head touches the ground.... The feet are never used for tripping."[292]

Anything like scientific boxing is unknown among

the tribes of the continent. When they try anything of this sort it is a mere clawing at each other's heads, and one professional pugilist, if fists alone were used, could knock out a whole tribe. Among the Hudson Bay Eskimo, a popular game is played by trying to catch, on the end of an ivory point, an ivory piece that looks something like a stumpy revolver. A string is attached to it and to the ivory point, and the game is to throw up the piece and cause the point to enter one of the holes and catch it. Cards, such as we have, are known to almost all tribes, and where they have not learned games from the whites they invent some of their own.



CAT-SHAPED WHISTLE OF TERRA COTTA, CHIRIQUI

Ball games of various kinds were played and the Canadian game called *lacrosse* is of Amerind origin. Parkman in his *Pontiac* vividly describes one of these lacrosse games used in strategy to gain entrance to an English fort. "The plain in front was covered by the ball players. The game in which they were engaged, called *baggattaway* by the Ojibwas, is still, as it always has been, a favourite with many Indian

tribes. At either extremity of the ground, a tall post was planted, marking the stations of the rival parties. The object of each was to defend its own post and drive the ball to that of its adversary. Hundreds of lithe and agile figures were leaping and bounding upon the plain. Each was nearly naked, his loose black hair flying in the wind, and each bore in his hand a bat of a form peculiar to this game. At one moment the whole were crowded together, a dense throng of combatants all struggling for the ball; at the next they were scattered again, and running over the ground like hounds in full cry. Each, in his excitement, yelled and shouted at the height of his voice. Rushing and striking, tripping their adversaries, or hurling them to the ground, they pursued the animated contest amid the laughter and applause of the spectators."

In Central America, a form of tennis was in vogue and stone courts where the game was played have been found and described by some of our modern archæologists.



George Catlin

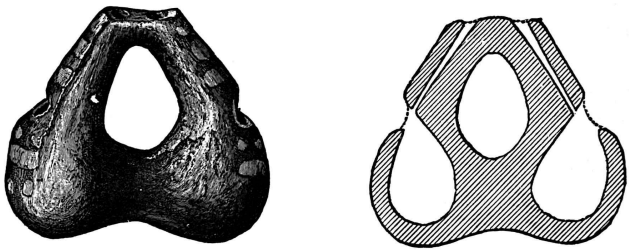
MANDAN GAME OF TCHUNGKEE

I never saw any ball playing amongst the Uinkarets, Shevwits, or other Amerinds of the northern Arizona-southern Nevada region. They all appeared to be deficient in games, at the time I was first among them, not knowing what our playing-cards were, and having even no games of exterior origin. There were flat pieces of cedar bark, painted with red stripes, said by some to have been used like dice, but I never saw them engaged in playing with them. The children used a flat piece of bark as a doll, and most Amerind children play with dolls made of wood, terra cotta, and other materials.[293] The small boys devote themselves to the bow and arrow for amusement in many tribes, and they will go out in the woods, or on the plain, and bring down small birds and mice with considerable skill. The whip-top, made of wood, is a favourite everywhere, especially among the Moki boys, whose life on the barren mesas precludes much hunting with bow and arrow. The children also beat the drum for fun.

Horse-racing is a sport in which many tribes, especially those of the plains, are past masters. The Pueblos, particularly the Mokis, owing to their sedentary life, have less opportunity to develop in this line, but the Navajos, Sioux, Crows, Blackfeet, and Comanches have little to learn about rough-and-ready racing. It goes without saying that the Eskimo, Aleuts, Tlinkits, Haidas, and other North-west tribes, whose range of life is on and by the sea, have no knowledge of handling horses. They never adopted the horse, because it was as useless to them as an elephant or a hippopotamus. But to the plains tribes this animal came like a gift from the gods, and they appreciated it fully, and horses became their standard of wealth. Some tribes, like the Kaivavits,

Uinkarets, and Shevwits Utes of northern Arizona have never possessed many horses because of their poverty, but there were always a goodly number owned, and horse-racing was a great amusement with them, as well as with those tribes which counted their horses by the thousand. Dodge describes an amusing race that took place near Fort Chadbourne, Texas, between a horse of a Comanche chief and three horses of the officers of the garrison, which illustrates the Amerind cleverness in the jockeying line.[294] It took several days of manœuvring to bring the chief to the point, and then a race was arranged with the third best horse of the white men. The distance was four hundred yards, and property to the amount of sixty dollars a side was wagered on the result. "At the appointed time all the Indians and most of the garrison were assembled at the track. The Indians 'showed' a miserable sheep of a pony with legs like churns; a three-inch coat of rough hair stuck out all over the body, and a general expression of neglect, helplessness, and patient suffering struck pity into the hearts of all beholders. The rider was a stalwart buck of one hundred and seventy pounds, looking big and strong enough to carry the poor beast on his shoulders. He was armed with a huge club, with which, after the word was given, he belabored the miserable animal from start to finish. To the astonishment of all the whites, the Indian won by a neck. Another race was proposed by the officers and, after much 'dickering,' accepted by the Indians, against the next best horse of the garrison. The bets were doubled, and in less than an hour the second race was run by the same pony, with the same apparent exertion and with exactly the same result. The officers, thoroughly disgusted, proposed a third race, and brought to the ground a

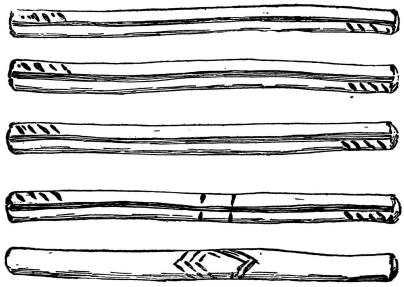
magnificent Kentucky mare, of the true Lexington blood, and known to beat the best of the others at least forty yards in four hundred. The Indians accepted the race, and not only doubled the bets as before, but piled up everything they could raise, seemingly almost crazed with the excitement of their previous success. The riders mounted; the word was given. Throwing away his club, the Indian rider gave a whoop, at which the sheep-like pony pricked up his ears and went away like the wind, almost two feet to the mare's one. The last fifty yards of the course were run by the pony with the rider sitting face to his tail, making hideous grimaces, and beckoning to the rider of the mare to come on. It afterwards transpired that the old sheep was a trick and straight pony, celebrated among all the tribes of the South." Yet some people think the Amerind has no sense of humour.



DOUBLE WHISTLE IN TERRA COTTA FROM CHIRIQUI
Actual size

Story telling is another amusement, and a good story teller, says Dodge, is a man of importance. "The bucks, and squaws, and children crowd to his lodge, or any other where he happens to be, and spend the long winter evenings listening to his recitals. These stories are as marvellous as the imagination of the teller can create, jumbling gods and men, fabulous and living animals, the impossible and the possible in

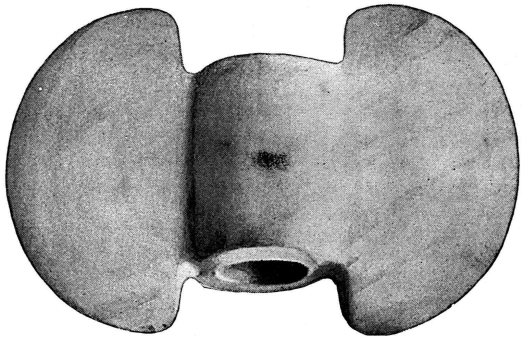
the most heterogeneous confusion."[295]



SET OF STAVES FOR GAME
The lowest shows obverse of one above.
Length, 5½ in.

The Navajos, or at least some of them, have considerable dramatic sense. On one occasion, when some Navajos camped near us, one of them gave an exhibition of character delineation that would have done credit to a professional actor. Choosing a large bush nearby as a screen for his costuming, he came out to the fire successively representing the various nationalities with which he was familiar. Some of these were extremely well done. The Pai Ute, for instance, is poor in clothing and always begging. Our actor took off all his clothing but the breech-cloth, approached the fire timidly and cringingly, and crouched down beside it, drawing the back of his hand across his nose with an accompanying sniffle, and exclaimed in Pai Ute: *Tabac ashanty* (I want some tobacco). Another was the American, who stepped nervously to the fire, and restlessly turned first front, then back, extended his hands, rubbing them over the heat; held up first one foot, then the other, and so on. These impersonations were full of the character of the types indicated. The exhibition finally culminated in a representation of the characteristics of his own people. Retiring once again behind the bush, he at last appeared with his full

costume on, carefully adjusted. His head bore a red turban, his shirt was held by a fine belt, his broad Navajo trousers met at the knee the red buckskin leggings, ornamented with silver buttons, and his feet were protected by moccasins finely wrought, held by silver buttons. About his shoulders was a fine blanket of Navajo make, and across his back a large bow and its arrows in a panther-skin case and quiver. Approaching the fire with a measured, haughty tread, head erect and folded arms, he paused majestically before it, straightened to his full height, and in a deep, dignified tone spoke the single word, “Navajo.”



"BANNER-STONE," TENNESSEE

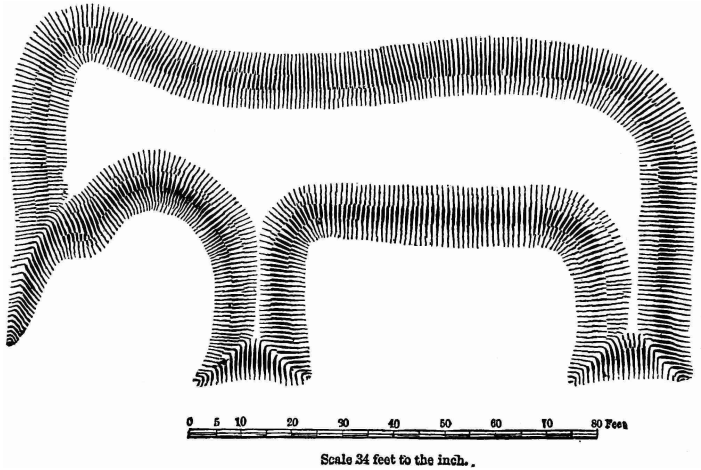
CHAPTER XII

WORKS AND AGRICULTURE

FOR a long time it was believed by the whites that the "Indians" were incapable of doing anything beyond weaving baskets, and from this condition of ignorance much of the confusion concerning the Amerinds has arisen. The line of reasoning was based on some such syllogism as this: The "Indian" never worked; The Cliff-dweller and the Moundbuilder worked at building houses and mounds; Conclusion, The Cliff-dweller and the Moundbuilder were not "Indians." Short, in his excellent book on the Amerinds,[296] applies unfortunately this method of reasoning to the copper-mine workers of the Lake Superior district, saying: "The labour involved in a journey of a thousand miles from the Ohio valley to the copper regions, the toil of the summer's mining, and the tedious transportation of the metal to their homes upon their backs, and by means of an imperfect system of navigation, indicates either

industry and resolution such as no savage Indian ever possessed, or a condition of servitude in which thousands occupied a position of abject slavery." This seems a complete misunderstanding of the people and conditions existing on this continent. Without consuming space in discussing these errors, I think my preceding pages have demonstrated that far from lacking industry and resolution, the "savage Indian" was applying himself in his way to a solution of the life problems which surrounded him. He knew nothing of the rules of commerce, book-keeping, and exchange, but there are other things in the world besides figures and accounts. The Amerind's game-supply and clothing, and the soil about him, were not overtaxed, at least not north of Anahuac, till the whites arrived with their mania for "killing something," and introduced on this continent the destructive practice of hunting for the fun of seeing how many animals could be killed in a certain time; or of killing for a special part of an animal, as for the tongues, or the hides and tallow, of the bison. When I first went to the Far West bison were spread over the plains by thousands. Not a single specimen can to-day be found alive outside of some private herd or the Yellowstone Park. Hunting, as before mentioned, was with the Amerind labour, not amusement, but in conjunction with their hunting most tribes carried on farming operations. It has often been asserted that the "Indian" did no work, even leaving the cultivation of the corn and squashes to the women. That the women in some of the tribes tended the crops, is true, but in others, like the Pueblos, they seldom or never touched hoe or spade. The Eastern men were hunting or building boats, or were on the warpath, hence it was necessary for the women to look after the fields.



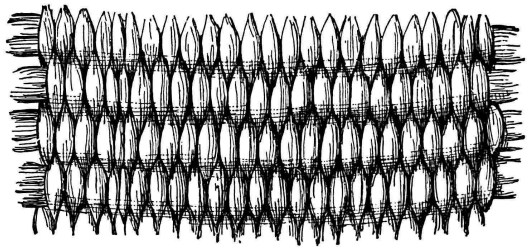


SO-CALLED ELEPHANT MOUND, WISCONSIN
Has been ploughed over. Length, 140 ft.; greatest height, 4 ft.

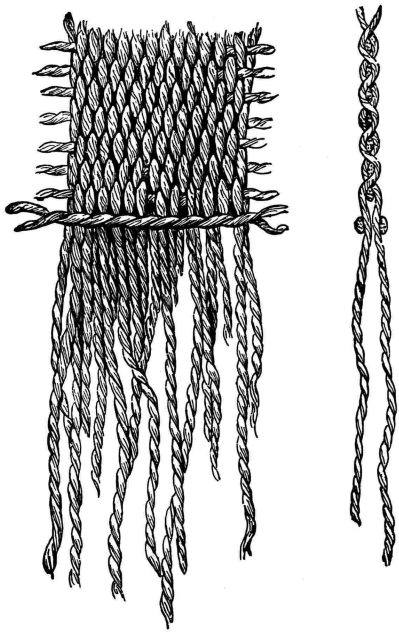
In the Eastern regions the crops grew without watering, but in the West and South-west the soil was arid and irrigation was necessary, hence there are found to this day remnants of extensive irrigation canals built to bring rivers out on the dry land. The fact that the resident Apaches do not irrigate does not prove that these great canals were built by people who emigrated from China or India, in the absurd line of argument that has so often been advanced in discussing Amerindian affairs; it simply proves that the Apaches did not cultivate the soil, or not extensively enough to require irrigating works, and also, over again, that tribes and stocks exist in a region, in different conditions or stages of development, either at the same time or at different times. These irrigating canals are unquestionably the work of tribes similar to the Pueblos; that is now well established. They were constructed because, in an increasing population and a probable decrease of precipitation, they were found necessary. An increase of population diminishes the food-supply; in an arid

country where game is not plenty this diminution is rapid. A corresponding development of a food crop is the inevitable course, unless the tribe were to migrate to more humid regions. In this case, hostile people already there might have to be met, and it would be easier to remain at the old place and invent new methods of obtaining food. In some such way irrigating and its attendant engineering developed. Irrigating canals, then, are found not where any lost or mysterious race once dwelt, nor where any particular Amerind stock were living, but where the climatic conditions and population made irrigation imperative. These conditions prevailed on this continent in Mexico and our South-west, and there consequently are found the most important works of this kind. The remains of irrigating canals in the south-western United States are numerous. There are indications of them along the fertile bottoms of the Colorado River in Glen Canyon. These bottoms are deposits of alluvial soil, generally occupying the inside of a bend at the base of the cliffs. They are of various extent, about three to eight feet above ordinary high-water mark, and are fringed with willows. I remember examining several indications of these “ditches,” but as I made no notes at the time, and it was long ago, I cannot give details. There were ruins of houses here and there, both on the cliffs and below, and the cliff faces bore pictographs. Amongst these I found, and copied, one which suggested some kind of a scaffolding and sweep for lifting water, and it is not improbable that something of this kind was utilised for raising water from the river. As there would be no opportunity to construct a canal or ditch sufficiently long to receive water by natural flow from the river owing to the shortness of the alluvial stretches, a system of lifting it into the

ditches might have been devised. Water might have been obtained also in another way. The country on both sides of the river at this point is composed chiefly of barren surfaces of homogeneous sandstone which collect enormous quantities of water, like the roof of a house, during rain-storms, and pour it over the edges of the cliffs and down the alcoves and lateral canyons. This water may also have been utilised for irrigating purposes. The Mokis utilise showers by collecting and guiding the streamlets with low dams hastily thrown up by their hoes, so it is certain that all these Amerinds understood thoroughly the importance of utilising shower-water on their crops.[297]



ANCIENT FABRIC DESIGN FROM IMPRESSION ON POTTERY, UTAH



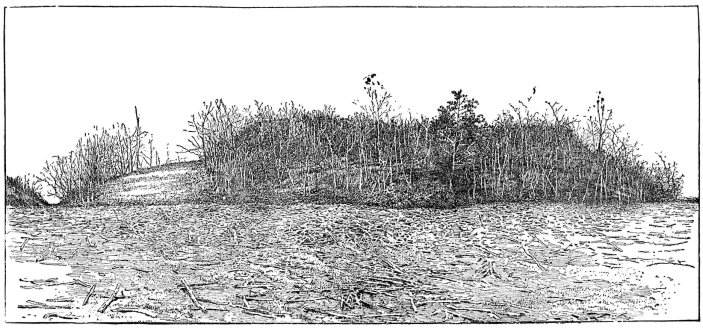
ANCIENT FABRIC PRESERVED BY COPPER CELT, IOWA
See page 108

In the Verde River region of Arizona some very large canals or "ditches" have been observed. Mindeleff has described a number of these, and I will mention one which he says is one of the finest he has seen.[298] This is "about two miles below the mouth of Limestone Creek on the opposite or eastern side of the river." The canal extends across the northern and western part of an extent of fertile bottom land. In one place it is marked "by a very shallow trough in the grass-covered bottom, bounded on either side by a low ridge of earth and pebbles, at another it was cut through a low ridge. It is probable that the water was taken out of the river about two miles above this place, but the ditch was run on the sloping side of the mesa which has recently washed out." It is supposed that this ancient canal irrigated nearly the

whole of the bottom land mentioned, which was recently again reclaimed by another “ditch” or canal constructed by Americans. “The ancient ditch is well marked by two clearly defined lines of pebbles and small boulders.... Probably these pebbles entered into its construction, as the modern ditch, washed out at its head ... shows no trace of a similar marking.”

Farming was carried on very much as the Mokis carry it on to-day, except that the Mokis do not have to build irrigating ditches, the showers supplying by their method water enough to mature the crops. A German has recently settled south-westerly from the Mokis and, I have been told, grows good crops on his place without irrigation. Mindeleff further states that “on the southern side of Clear Creek, about a mile above its mouth, there are extensive horticultural[299] works covering a large area of the terrace or river bench.... For a distance of two miles east and west along the creek, and perhaps half a mile north and south, there are traces of former works pertaining to horticulture, including irrigating ditches, ‘reservoirs,’ farming outlooks, etc.” The reservoirs are supposed by some to have been threshing-floors, being large circular depressions lined with clay. The produce derived from these farming operations was corn, beans, squashes, and cotton, corn being the principal. Cotton was grown by some, but not all, of the south-western tribes. A great many of the tribes throughout the United States and Mexico were farmers to a greater or less extent, and many of the earthworks of the Mississippi valley were in all probability connected with agriculture. It was necessary there to protect the crops from marauding parties from wilder tribes, so, in all probability, some of the earthworks, surmounted by palisades or by watch-houses, served to guard the crops from depredations. Morgan thinks

some of the square ones were foundations for communal houses,[300] and this is also probable.



From a photograph

LARGE MOUND OF THE ETOWAH GROUP, GEORGIA

Next to the Cahokia, this is probably the most important work of its kind remaining in the Mississippi valley. It is sixty-one feet high, and the area of the base is about three acres. With several smaller ones, it stands in the middle of a tract of about fifty acres of rich land, bounded on one side by the Etowah River, and on the other by a semi-circular artificial waterway or moat. The top approximates a square, with a sort of roadway adjoining and leading up on the left. The entire contents are about 160,000 cubic yards. It is composed of earth which was taken from the moat and adjoining excavations

On the upper Gila River in Arizona, Fewkes discovered traces of reservoirs and irrigating canals. “The large circular or elongated oval depressions,” he says, “in the immediate neighbourhood of some of the house-mounds have been identified as the sites of former reservoirs.... The reservoir at Buena Vista is one of the largest that was discovered, yet no irrigating ditches leading into it were distinctly traced.... There is abundant evidence that the ancient people of the Pueblo Viejo Valley led the water from the Gila River over the plain by means of canals for purposes of agriculture, for in many places the depressions marking the old ditches may be traced for considerable distances.... I have been informed by some of the older residents that when they came into

the country, before the Montezuma and San José irrigation ditches had been constructed, the ancient aqueducts were much more conspicuous than they are to-day, and that sections of the modern ditches follow the course of the ancient waterways."[301]



From *Monumental Records*

A VOTIVE ADZ OF JADITE FROM MEXICO, SHOWING FRONT AND SIDE

Height, $10^{13}/_{16}$ in.; width, 6 in.; thickness, 4⅝ in. Highly polished; color light grayish green with streaks of emerald green on the back. A complete human figure. See page 341 for back.

The Aztecs built long aqueducts to supply their towns, and the Mayas constructed large reservoirs. Charnay says: "According to historians of the Conquest, El Salto del Agua (a monumental fountain in the City of Mexico) and the aqueduct which it terminates replaced the ancient aqueduct of

Montezuma constructed by Netzahualcoyotl, King of Tezcuco, between the years 1427 and 1440. At that time it was brought through an earthen pipe to the city, along a dyke constructed for the purpose, and that there might be no failure in so essential an article, a double course of pipes in stone and mortar was laid. In this way a column of water the size of a man's body was conducted into the heart of the capital."[302]

George Bancroft makes the statement that "of the labours of the Indians on the soil of Virginia, there remains nothing so respectable as would be a common ditch for the draining of lands,"[303] but in this Bancroft was somewhat mistaken, for Thomas describes[304] some mounds in West Virginia, which was Virginia when the above sentence was written, that were undoubtedly the work of some of the Amerinds formerly occupying that soil. "First the earth (unless the place selected is a bare rock) is removed to the solid rock foundation and an approximately level space from ten to thirty feet in diameter formed. Centrally on this was placed a layer of flat stones, with the edge inward, around a circle about three feet in diameter. Upon the outer edge of these, others were placed with their outer edges resting upon the prepared foundation running entirety round the circle. Then another inner layer with the best edge inward and the thinner edge resting on the outer layer, the stones of one layer breaking joints with those below, as far as the size and form would admit. Outside of the inner row, and with the edges resting on it, other circles were added until a diameter ranging from twenty to fifty feet or even more was attained, thus extending upon the sloping earth not removed in forming the foundation. The last or outer circle usually consisted of but a

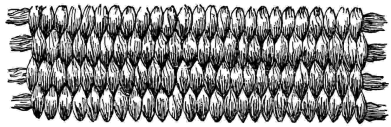
single layer, over which earth was thrown, being sometimes heaped up until it equalled in contents the rock pile. The height of these piles was found to vary from four to eight feet, in one or two instances reaching ten feet. But in all cases the circular space or opening in the centre continued to the top the same diameter as at the bottom, somewhat resembling the so-called 'well-holes' of the early western pioneers." The stones used in these constructions were obtained by "rude quarrying in stratified cliffs one half mile distant. Some of them measure from four to six feet in length, half as wide, and of a thickness which renders them so heavy as to require from two to four stout men to handle them." Skeletons were found in cavities of these piles "with head or feet (generally the latter) toward the central well-hole." Coarse pottery, rude large celts, lance- and arrow-heads were also discovered, and "all the cavities of the heap not originally used for burial are filled with earth or mortar, often well baked by fire."[305] Many mounds and other earthworks have been found in the western Virginia region, and in some of them copper articles have been brought to light.[306] In New York there are many mounds called "old forts," of various shapes, with walls from one and one half to two feet or more high, and thence westward, throughout the Mississippi valley, mounds and earthworks of many shapes and sizes are found. They appear to be concentrated in various centres, with a sprinkling in between suggesting a number of different groups of Amerinds as their builders, which has been pretty well established by evidence was the case. Some of the mounds were of enormous size, the famous one at Cahokia, Illinois, being one of the highest and largest on the continent. Its altitude is about ninety feet, and it contains nearly 500,000

cubic yards of earth. Its purpose is, of course, not known, but it probably supported some religious structure of wood. Many of the mounds, as pointed out in the chapter on dwellings, were merely supports for buildings, religious or otherwise. Others were connected with religious rites in other ways. Doubtless the figures of birds found in Wisconsin represented the "Thunder-bird," of which there are legends and traditions in many tribes. It was to the Amerind the cause of the thunder and lightning. These great and small earthworks were constructed in the United States by scooping up earth from the vicinity and carrying it in baskets to the designated spot. The United States mounds are, as a rule, made of earth, those of Mexico and Central America of clay or adobe brick, faced with stone or wholly of stone. "It is often the case," says Thomas, speaking of the burial mounds of the Mississippi valley, "when a mound is carefully excavated and closely scanned as the work proceeds, especially where the material is clay or muck, that the individual loads can be readily discerned. As the earth of which the mounds is composed is usually gathered up from the surrounding surface, the interior will vary in color and character only as the soil so gathered up varies.... The places from whence material was taken to build the small or moderate-sized mounds are seldom discernible at the present day, but depressions plainly mark the points about the larger works, as the Cahokia and Etowah mounds and some of the enclosures of Ohio and elsewhere.[307] In some cases the one act has been made to serve two purposes, that is to say, the earth used to construct the mound or other work has been taken from one or two points so as to leave a basin-shaped excavation for holding water, or to form a trench to serve as a

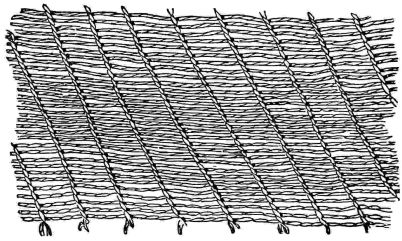
protective moat, or for drainage or other purposes." For a long time it was believed by a great many persons, scientific and otherwise, that these piles of earth, often called pyramids quite erroneously, could not have been made by ordinary Amerinds, but as the study of the native American proceeded and the data of what he did and does actually do began to be recorded, it was perfectly plain that it was not at all necessary to look beyond the "Indian" for the origin of the mounds—that is, beyond the "Indian" as he was known in the region where the mounds occur. It was found that he had erected mounds after the arrival of the whites, and if he built one or several he might have built all. It was not a very difficult operation to dig up earth and carry it a few hundred feet and drop it on a pile. The transportation of the stones referred to above was far more laborious, and modern Amerinds do a great deal harder work. The Navajos are fairly good labourers, and the Mokis carry all their wood from forests fifteen miles away. It is work to carry water up the cliffs where the Mokis live, it is work to hoe the corn, it is work to tend and herd sheep. On full investigation it seems strange that it should ever have been thought that the mounds were not "Indian" because they represented work. Fowke has estimated that a mound a hundred feet in diameter and twenty feet high could have been erected by the "Indians" in forty-two days. I have seen Uingkaret Utes in Arizona carry on their backs with ease for twelve or fifteen miles loads that would average about thirty or forty pounds. People who can do this could carry earth in short stretches for forty or fifty days. It is probable, however, that the mounds were not built by steady and consecutive labour, but rather by intermittent effort, after the usual fashion of Amerindian work.



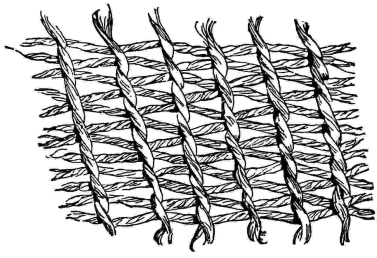
From *Monumental Records*
BACK OF VOTIVE ADZ
For front and side see page 339



From New York



From Illinois



From Tennessee

PATTERNS OF ANCIENT FABRICS FROM POTTERY

See page 108

Many mounds and earthworks were erected for defensive purposes at points controlling river passages or trails, where the advance of foes invading a country could be checked. There were also fortification works like the so-called “hill-forts” of the eastern portion of the United States, and the “cérros trinchéras” of northern Mexico. Quoting again from Thomas,[308] one of the best authorities on mounds and “Moundbuilders”: “The most extensive example of the ‘hill-forts’ is that known as Fort Ancient, in Warren County, Ohio. This crowns a spur of the bluff some two hundred and fifty or three hundred feet high, which here overhangs the Miami River. The area embraced is only some seventy-five

or eighty acres, but the length of the wall, which follows all the windings and zigzags of the margin of the bluff and of the side ravines, is a little over three miles and a half. This is one of the best-preserved monuments of the Ohio valley, the surrounding wall being uninjured save at points where the turnpike cuts through it, and at a few places where ravines have been formed since it was abandoned. This wall, which is partly of stone, but chiefly of dirt thrown up from the inner or upper side, varies in height from three or four to nineteen feet, and from twenty-five to seventy feet in width at the base. As the earth has all been taken from the inside (except along the high wall which crosses the level at the rear) and thrown outward on the crest of the slope, this has left an inside ditch. As a rule, the wall is strongest and highest at the points of easiest approach; and at some places the outside slope has been artificially steepened, proving beyond any reasonable doubt that the work was one of defence."



ESKIMO MECHANICAL TOY. ¼

The Amerinds, though not always engaged in war, were always on the defensive against stronger tribes whose warriors might appear on the scene. These stronger tribes were not necessarily Amerinds of a different stock or strangers; often, as in the South-west, defensive works were erected against relatives as much as against different tribes, just as we, in our time, have had three wars that were not with another race. In New Mexico the villages, besides being built on the communal principle, were often surrounded by a defensive wall. Such a wall can still be traced around the ruins of Pecos, as well as in parts at other ruins. The hill-forts of the Ohio kind were undoubtedly the result of circumstances similar to those that prevailed in the South-west: a desire to combine as closely as possible defence and the cultivation of the soil. They were often interdependent. If conditions changed, or a tribe grew strong enough to dominate the situation, the defences might be abandoned. These works do not necessarily imply that their builders were defeated and driven back by wilder tribes. They indicate only that the builders felt defensive works necessary at the time of the building; their circumstances then demanded them. They do not indicate difference in race or remote origin. The constructors were Amerinds, though not all one stock. There were tribes of different stocks in the Mississippi valley all the time, just as there were in other parts of the land, and the attempt that has been made by some writers to establish the idea that the Mississippi valley was once occupied by a single mysterious race that was overpowered and driven out or exterminated by the “Indians” has no good foundation.

One of the most extensive groups of these defensive village sites is that known as the Newark

group, in Ohio.[309] Here are circles, squares, and straight-line mounds, all connected, covering an area of two or three square miles. There are two large circles in this group which approximate true circles, and have been the basis of much unnecessary speculation as to how "Indians" could have "done it," with the conclusion that the "mysterious race" did it. When it is remembered how easy it is to construct a fairly accurate circle in a great many ways, it is surprising that anyone should have thought "Indians" could not do it, when they did *and do* so many things that require more skill. One clear-headed and accurate writer reminds the reader that people who could manufacture cloth could certainly make a rope with which to lay out a plan. Almost all Amerinds could make rope, the Pai Ute, Uingkarets, and Shevwits Utes, who cannot make cloth at all, making excellent rope and cord. But it was not necessary to make a rope of fibre. Amerinds have always been skilful at tanning deerskins, and buckskin strings braided make one of the best kind of ropes; indeed, it does not even require to be tanned, as it can be worked in the rawhide state. We should have to descend low in the scale of humanity, indeed, to find a tribe that could not make a cord long enough to lay out any circle yet discovered on this continent. There is nothing difficult about it. The largest circle at Newark has a diameter of about a thousand feet. This would require a rope only five hundred feet long, which would be nothing for any tribe on the continent to make.



George Catlin, 1832
MÁHTOTÓHPA (THE FOUR BEARS), A MANDAN CHIEF

Just why the Newark works have the particular arrangement they have would be impossible to say without knowing the customs of the tribe that built them and the circumstances of the time. It is probable, however, that some enclosures were farm fences. The plan suggests two communal villages, closely allied and united by a sort of runway, which, while preventing hostiles from separating the two villages in time of attack, always afforded a safe passage for the women and children from one town to the other. The builders were evidently beset by enemies at the time the works were occupied, but this does not necessarily imply that when the works were abandoned the occupants were driven out or

annihilated, for their enemies may have been people of their own stock with whom they eventually became reconciled, or the enemies may have passed on to other fields, or the occupants of the works may have grown more powerful and at length have assumed the offensive. Abandoned works, I repeat, do not necessarily mean annihilation of the builders. The South-west offers countless examples of the truth of this statement. Villages and works were abandoned there for a variety of causes; sometimes it was little more than caprice. Quoting Thomas again: "Nor is the theory that, while some of the monuments are due to the Indians, others are to be ascribed to a different race, justified by the data, or reasonable, as no one is able to define the characters which distinguish the classes. If the Indians built mounds of the most advanced type and of large size, as history shows positively the natives of the Gulf States did, there is no necessity for attributing the works of the middle and northern sections to a different race. That the Moundbuilders were divided into various and often contending tribes, is shown by the works for defence and protection, as also by the evidences of varying customs. Yet there is nothing in the antiquities to indicate a higher culture than that of the southern Indians or a greater difference between the people of the different sections than existed among the natives when first encountered by the whites." Granting this, there is still nothing to prove that some of these tribes did not come from a long distance off, for the Amerinds very often have been travellers.

Few mounds or earthworks are found east of the Alleghany Mountains, north of Tennessee and North Carolina, but to my mind this is not positive proof that the people who built earthworks in other places

did not live there. The Amerind changes his methods so completely when circumstances demand, that it would not be safe to say that those who built mounds west of the Alleghany range did not live east of it. If the Mokis should have migrated to Ohio in priscan days, they certainly would not have built stone houses there. They would have erected mounds and wooden houses, for the reason that the stone would have been difficult to secure. Many tribes have readily changed from one method to another in building, as pointed out in a previous chapter. With the Amerind, it depends so much on circumstances what he will do in a given locality. For example, the traditions of the Mokis require their kiva to be under ground. This is easy in their cliff-land, but how would it be in Louisiana? Even in Zuñi surface kivas are found acceptable.





Photographed and described by M. H. Saville for the American Museum *Bulletin,* vol. xiii., article xi., July 9, 1900
AN ONYX JAR FROM MEXICO IN PROCESS OF MANUFACTURE
Three-eighths natural size
The excavating was being done by a hollow drill, probably of reed, and sand

In Mexico there are numerous large mounds which, as noted before, sustained buildings, now commonly called “temples.” “At Teotihuacan” says Charnay, “the pyramid of the Sun is six hundred and eighty feet at the base by one hundred and eighty feet high.... Like all great pyramids they [the Sun and Moon pyramids] were divided into four storeys, three of which are still visible, but the intermediate gradations are almost effaced. A temple stood on the summit of the large mound, having a colossal statue of the Sun, made of one single block of stone.... The interior of the pyramid is composed of clay and volcanic pebbles, incrusted on the surface with the light porous stone, tetzontli. Over this was a thick coating of white stucco such as was used for dwellings. Where the pyramid is much defaced, its incline is from 31 to 36 degrees, and where the

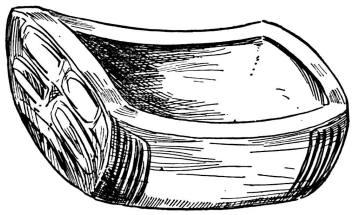
coatings of cement still adhere 47 degrees."[310] One of the largest mounds in Mexico and one of the largest in North America is the Great Mound of Cholula. It is about one thousand feet square at the base, of which the approximate area is over twenty acres. It now has much the appearance of a natural hill, surmounted by a church of modern construction. There are "three distinct projections, surrounding and supporting a conical hill, and separated from each other by wide depressions. The entire mass consists of adobe bricks laid in adobe clay, undisturbed except where erosion, earthquakes, or the hand of man have mutilated it. The bricks break joints and are of various sizes."[311] The altitude is about two hundred feet. Limestone slabs were used for steps. Bandelier does not ascribe it to the Aztec or Nahuatl stock which occupied the region at the time of the Conquest, but to some anterior tribe.

It has been called a pyramid, with other mounds in Mexico and Central America, but this is not a proper term for these Amerindian works.

They have not the character of the Egyptian pyramids, nor were they constructed with the same object. The pyramids were tombs, while the large Amerind mounds were *foundations* for buildings. Almost every ancient building of any consequence in Mexico and adjoining regions, as well as far up into the United States, stood on a mound of greater or less elevation. The so-called "palace" of Palenque, in which Stevens lived while studying the ruins, "stands on an artificial elevation of an oblong form, forty feet high, three hundred and ten feet in front and rear, and two hundred and sixty feet on each side. This elevation was formerly faced with stone, which has been thrown down by the growth of trees, and its

form is hardly distinguishable." See illustration of a part of this palace, page 403.

The chief ruins at Copan are all on a huge mound, and at Mitla the edifices have mound foundations, or rather platforms. A more or less elevated site for his dwelling-place or temple, whether natural or artificial, seems to have been almost universal with the Amerindian people from the Isthmus of Panama to British Columbia. The amount of labour expended in constructing the artificial foundation platforms and mounds was something prodigious.



WOODEN FOOD BOWL, HAIDA



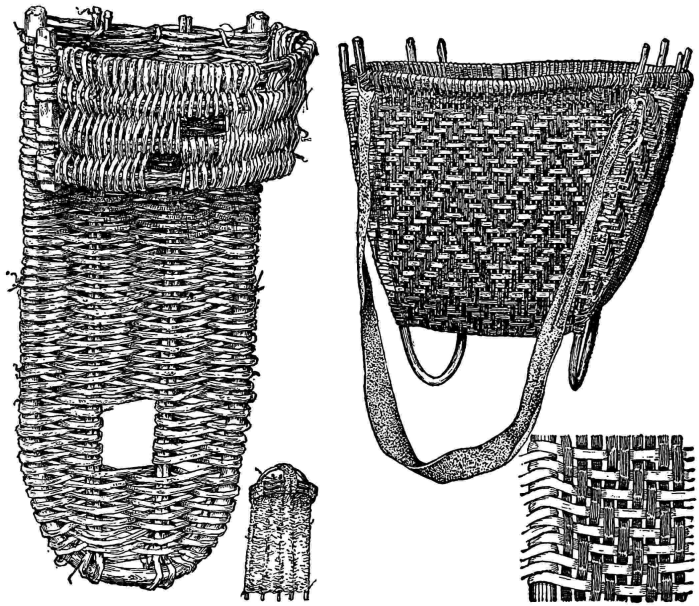
DANCING MASK OF THE MAKAHS, WASHINGTON

CHAPTER XIII

CUSTOMS AND CEREMONIES

FEW Europeans can look at the world from the Amerind point of view, because few know what it means to have lands free. Happy the man who has trod the wilderness primeval, and tasted the world in its original freshness. He alone can understand what the Amerind has lost forever. When I first went into the West about thirty years ago, the regions we traversed were untamed, and often we did not meet even Amerinds for weeks at a time. Such a condition has its charms, and when we remember that, except in the southern regions of Mexico, the native American was born and bred to it, we can see that it must be a difficult matter for him to suddenly change. But a few generations hence, where once he scaled the cliffs, or followed the deer, he will be sitting down to a course dinner in a swallow-tail

coat. He has already conquered at football, and the rest of the downward road will be easy for him!



MOKI WICKER CRADLE WITH AWNING CARRYING BASKET OF THE ARIKAREES
In the smaller figure the awning is over the bowed end

Our general impression of the native American, the Amerind, is that he is a kind of human demon, or wild animal, never to be trusted, unable to keep a compact, always thirsting for gore; but it is a mistake. He is not altogether unreliable. The Iroquois maintained the “covenant chain” with the British unbroken for a round century. The Amerind never broke faith with Penn, and it is seldom that he will violate any compact that he fully understands he has entered into. His daily life in the earlier days was by no means bloodthirsty. Powell has truly said that the scalping-knife was no more the emblem of pre-Columbian society than the bayonet is of ours of the nineteenth century. In the United States existence of

a trifle over a hundred years have been waged several long and bloody wars, one the most gigantic known to history, all police records are full of horrible crimes the Amerind was a stranger to, and within a year or so *white people* have burned alive several victims. When anyone defends the Amerind he is accused of trying to make an angel of him, but this only shows again how universally unjust toward him we are. We are blind to our own shortcomings and exaggerate those of the Amerind. It was inevitable that the weaker race should be forced to the wall, but we can at least give it credit for any good that was in it without injuring ourselves. In estimating their traits we do not regard them enough from their own standpoint, and without so regarding them we cannot understand them. The Amerind was something of a farmer, of an architect, of an engineer, of a statesman, of an artist, the amount and quality of his interest in these things depending, as with us, on circumstances. In most localities, he achieved for all what all are with us still dreaming to attain, “liberty and a living,” and his methods of government possessed admirable qualities. We call him lazy and despise him for it, but many of our people would not work if they could avoid it. One of Balzac’s characters is made to say: “I fear God; but I am still more afraid of the hell of poverty. To be without a penny is the last degree of misery in our present social state.” The great philosopher here put European life in a nut-shell. The Amerind was fortunate perhaps in not knowing what poverty, as we understand it, is. With him the keen eye, the woodman’s skill, and a generous and abundant soil gave him his daily bread. The idea of piling up treasure for the satisfaction of holding it did not occur to him any more than did killing of game for

pleasure. A tribe may have passed through famine, but the individual never knew hunger in the midst of riches, as the civilised man so often meets it. Not long ago a whole family wandering about the streets of New York, homeless and without food, dropped from exhaustion at the corner of Thirty-fourth Street and Broadway. In Amerind society, such an occurrence would have been impossible. No friendly stranger ever left an Amerind village hungry, if that village had a supply of food. And “the hungry Indian,” says Powell, “had but to ask to receive, and this no matter how small the supply or how dark the future prospect. It was not only his privilege to ask, it was his right to demand.”

The Amerind distribution of food was based on long custom, on tribal laws; food was regarded like air and water, as a necessity that should in distress be without money and without price. Hospitality was a law, and was everywhere observed faithfully till intercourse with the methods of our race demolished it. Among isolated tribes it is still observed. Among the Mokis a hungry man of any colour is cheerfully fed.



TLINKIT MAN AND WOMAN, 30 YEARS AGO, OR ABOUT 1870
"The labret, a small cylinder of silver with a broad head, is the modern style of lip ornament, differing materially from the large ones worn until a few years ago."—Niblack
Many tribes wore lip, nose, and ear ornaments

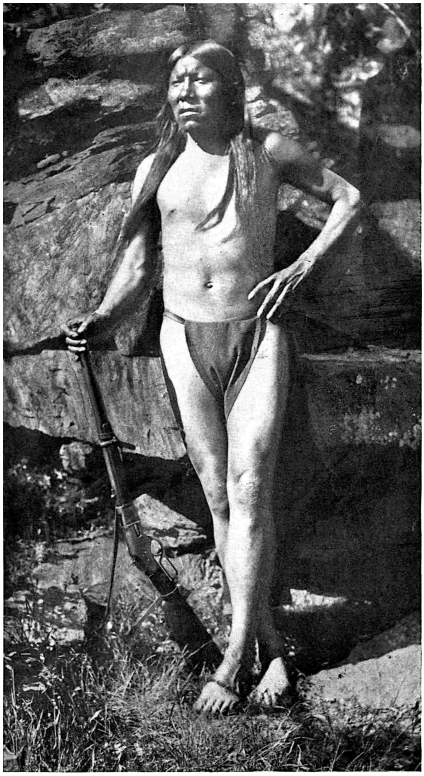
We cannot seriously condemn the Amerind for not jumping at the opportunity to tie himself to the plough, or to the ledger, or the grindstone. He was, as a rule, close to Nature, and like all men who live thus he imbibed some of her grandeur. He lived in independence; and when he died, he died as the sun sets at evening, expiring in glory, without a tear, without lamentations. In the hands of the enemy at the stake, his passing away was sublime, like the summer cloud that sails steadily out into the infinite blue and dissolves. The most painful tortures failed

to bring a moan to his lips, or a tear to his defiant eye, and his proud spirit departed in silence. An offer of liberty was frequently refused. Charnay tells of a Tlaxcaltec chief, of great fame as a warrior, who was captured and who, on being recognised, was offered his freedom. He refused to accept it and desired to be devoted to the gods, as was the custom. He was tied to the gladiatorial stone, where he killed eight warriors and wounded twenty others before being overpowered and offered up to the war-god.

The habit of mind and body of dense commercial populations tends toward degeneration because it is a concentration in one line. The Western mountaineer exhibits the effect of removal from trade considerations in a repose of manner and a tranquillity of nerves which strongly suggest the Amerind. “There are incommensurable differences,” says Balzac, “between the man who mingles with others and him who dwells with Nature. Once captured, Toussaint Louverture died without uttering a word, while Napoleon on his rock chattered like a magpie.”

Freedom of limb and strength of mind eliminated much disease from the native races. Deformity amongst Amerinds was rare. There were seldom cases of diseased spine, blindness, insanity, squinting eyes, deafness, or any deficiency or excess of the organs.[312] Sitting Bull was a fine specimen of the Amerind, and he was a man of great ability. Such men could not be enslaved, and from the first the European efforts to reduce the red race to slavery were failures. They held their own in most localities, and often compelled governments to treat with them as with a sovereign power. Where the treaties were kept by the other side the Amerind seldom violated

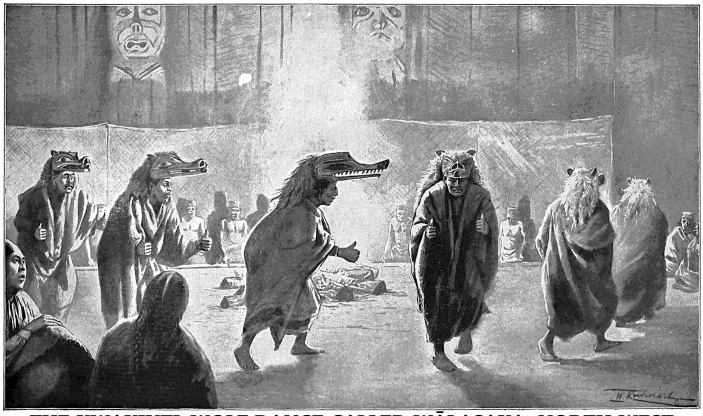
them. Penn never had any difficulty because he treated the Amerinds fairly and honourably. Oñate, in his long journey across Arizona, had no conflict with the natives, but found them without exception friendly, and this was the experience of other explorers who were just. The native was a child. He expected absolute fidelity and truthfulness from the whites, though he did not always give this in return; once let him detect prevarication or deceit, and his confidence vanished. He never forgave a white man for talking "crooked," and those who have been invariably truthful and honourable toward him have commanded trust and respect. I know two men who had great influence over the Navajos because they had always been fair and just to them. "We call them cruel," says George Bancroft, "yet they never invented the thumb-screw, or the boot, or the rack, or broke on the wheel, or exiled bands of their nations for opinion's sake; and never protected the monopoly of a medicine man by the gallows, or the block, or by fire. There is not a quality belonging to the white man which did not also belong to the American savage; there is not among the aborigines a rule of language, a custom, or an institution which when considered in its principle has not a counterpart among their conquerors."[313] Throughout the continent there was a general homogeneity of customs and ceremonies which separates the Amerindian races from the rest of the world, and argues an immense period of isolation from all other people.



A PAWNEE IN BATTLE ARRAY

Some tribes have become civilised, like the Iroquois, the Cherokees, and the Choctaws. Some tribes of Arizona and the contiguous regions are at the other end of the scale, living a rude life, even for Amerinds, and subsisting on uncultivated products of the soil, like piñon nuts, fruits of cactus and yucca, "*yant*," a kind of agave, and seeds of grasses, as well as on what game the sterile region affords. The grass seeds are, some of them, large and fat, and make nutritious food. Many tribes cultivated a grain that has no superior in the world for its yield, its ease of cultivation, and its nutritious qualities. This was maize, or Indian corn, which grows in new ground

with little attention, and can be dried and stored indefinitely. No machinery was required to separate it from the husk, and it was easily reduced to meal or flour between two stones or in a mortar. Nor did it even need to be ground, but, roasted in pits, or prepared in other ways, it offered a palatable and nutritious food, even before the ripening. Dried, or parched, it was carried on journeys, and dried venison added to it made a strengthening diet. There were, besides, other foods, like beans, squashes, native fruits and berries, and nuts. Nor was the native without beverages, some of them intoxicating; the *pulque*, or *octli* of the Mexicans, extracted from the maguey, being a well-known example. There are many varieties of this drink, though all are made in the same way. In the spring the central part of the plant is removed, leaving a cup-like cavity which fills up with juice, that is taken out from time to time, and put into a kind of vat made of hide stretched on four poles. After fermentation, bitter herbs are added. *Mezcal* is another drink made from a smaller kind of maguey. It is a colourless, brandy-like liquid, produced by distillation since the Conquest, but before that made by boiling, just as the Comanches make it to-day.[314] The Kaivavits and Uinkarets made a kind of wine out of the fruit of the cactus. The fruit was put into a cloth and the juice squeezed out. This was then allowed to ferment, and I was told produced intoxication, though I never observed this result. The cake resulting from the process was consumed as food, being sliced down like bread, and eaten without further preparation. The Pimas and Maricopas, after drying cactus fruit in the sun, macerate it in water, and after fermentation get drunk on the compound.



THE KWAKIUTL WOLF DANCE CALLED WĀLASAXA, NORTH-WEST COAST

Tortillas were made of maize, “shelled and soaked in an alkali to remove the hull, then repeatedly washed in cold water.”[315] This product was then ground on a metate, beaten into flat cakes, and baked on an earthen griddle called *comalli*. *Tiste* was parched corn ground with chocolate and sugar and mixed with water. *Atolli* was a drink made of cornmeal cooked in water. *Chocolatl* was prepared “by grinding equal parts of cacao beans and seeds of *pochotl* or *sequoia*, which were then boiled. This liquid was shaken up to make it frothy, mixed with dough made of maize and then submitted to a new cooking to thicken it.”[316]

No tribe learned to use the milk of any animal. The bison was about the only native animal that offered any. In the whisky of the whites they found their fate, and this has done more than any other single cause except smallpox to destroy the race. For it they exchanged tobacco, and the white man smokes as the Amerind drinks.



UTE WOMAN CARRYING CHILD

Beckwourth, referring to the trading of the mixture of alcohol and water called whisky on the frontier in his day, to the natives, remarks: “This trading whisky for Indian property is one of the most infernal practices ever entered into by man. Let the reader sit down and figure up the profits on a forty-gallon cask of alcohol, and he will be thunderstruck, or, rather, whisky-struck. When disposed of, four gallons of water are added to each gallon of alcohol. In two hundred gallons there are sixteen hundred pints, for each one of which the trader gets a buffalo robe worth five dollars! The Indian women toil many long weeks to dress these sixteen hundred robes. The white trader gets them all for worse than nothing, for the poor Indian mother hides herself and children in the forests until the effect of the poison passes away from the husbands, fathers, and brothers who love

them when they have no whisky, and abuse and kill them when they have.... In short, the sixty gallons of fire-water realised to the company over eleven hundred robes and eighteen horses, worth in St. Louis six thousand dollars."[317]



George Catlin
KEOKUK, A SAUK CHIEF

These were the honourable methods employed by the fur companies. They secured from the Amerinds thousands on thousands of dollars' worth of valuable property for, as Beckwourth says, "worse than nothing," and no man knew better than he the fearful effect of the fire-water on the native. To-day there are a great many white men engaged in the same traffic, despite the government's efforts to

crush it out. And still we cannot understand why the "Indian has degenerated"!

A Cheyenne chief said: "White man, I have given you my robes, which my warriors have spent months in hunting, and which my women have slaved a whole year in dressing; and what do you give me in return? I have nothing. You give me fire-water, which makes me and my people mad; and it is gone, and we have nothing to hunt more buffalo with, and to fight our enemies."[318]

I never saw an Amerind smoke as much tobacco in a week as I have seen Americans or English smoke in a single day. Tobacco and the pipe were part of the Amerindian religious paraphernalia. The pipe seems not to have been much used for ordinary smoking among the Nahuatl or Mexican tribes, nor among the sedentary tribes of our South-west. They used the cigarette chiefly, leaving the pipe for ceremonials, while the West Indian tribes rolled the leaf up for smoking. Many Eastern tribes cultivated tobacco extensively and were able to sell it to traders. It was generally mixed with other leaves and bark for smoking, and among the Eskimo with wood. The exact place of the pipe in the ceremonials of the Eastern tribes is not yet thoroughly understood, but its function was always an important one.[319] Among the Iroquois, when the horizon was filled with "thunderheads," or "sons of thunder," in a period of drought, it was a custom to burn tobacco, as an offering to bring rain. Each family made an offering on its secret altar to Hinu[n], God of Thunder, and then bore a portion to the council-house, where a general offering was burned in the council fire. "While the tobacco was burning the agile and athletic danced the rain dance."[320]

The Eskimo of Alaska, it is asserted, will eat with relish the oily refuse from the bottom of a pipe, and they are also fond of the ashes of tobacco. The smoke is deeply inhaled by them, as by all the tribes. Among the Arikarees a special pipe was kept in a "bird box." Any criminal or enemy who could reach this box and smoke the pipe was free from molestation. This right of asylum is noticed in other ways. It is said that the first whites who came among the Apaches, tired and hungry, were not molested by them. Everywhere, if an enemy were permitted to smoke the pipe or partake of food with the Amerinds he was absolutely safe for the time being, both because of the pipe and because the law of hospitality was never violated. If Macbeth had been an Amerind no blood would have been shed on that fatal night, and Duncan would have passed unharmed beyond the castle walls. The pipe was the invariable accompaniment of all councils and treaties among Eastern tribes, and it was the emblem of peace. Each village had its calumet, a pipe of peace made of sacred pipe-stone, and whoever travelled with it, passed, even among the enemy, with impunity. Envoys coming within a short distance of the town would utter a cry and seat themselves on the ground. "The great chief," says George Bancroft, "bearing the peace pipe of his tribe, with its mouth pointing to the skies, goes forth to meet them, accompanied by a long procession of his clansmen, chanting the hymn of peace. The strangers rise to receive them, singing also a song, to put away all wars and to bury all revenge. As they meet, each party smokes the pipe of the other, and peace is ratified. The strangers are then conducted to the village; the herald goes out into the street that divides the wigwams, and makes repeated

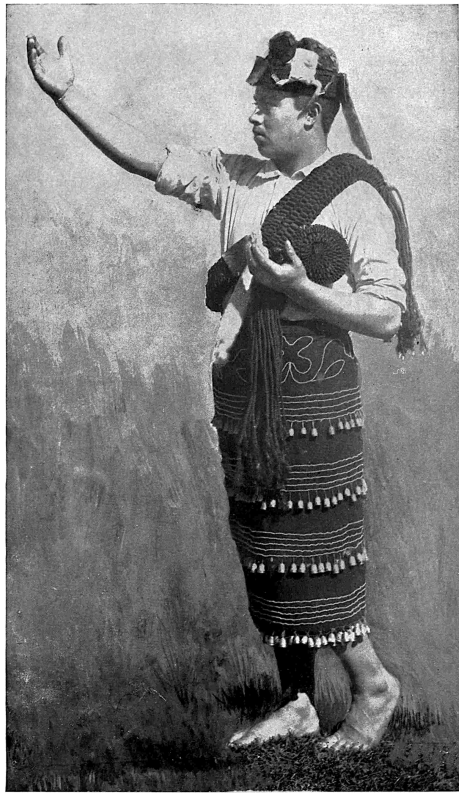
proclamation that the guests are friends; and the glory of the tribe is advanced by the profusion of bear's meat, and flesh of dogs, and hominy, which give magnificence to the banquets in honour of the embassy."[321] Thus would a war terminate. In beginning it among Eastern tribes, various ceremonies preceded the departure of the warriors, especially the war dance or scalp dance and accompanying songs, expressing contempt for death and certainty of victory. Beckwourth remarks: "When war is declared on any tribe, it is done by the council.[322] If any party goes out without authority of the council, they are all severely whipped; and their whipping is no light matter, as I can personally testify. It makes no difference how high the offender ranks, or how great his popularity with the nation—there is no favour shown; the man who disobeys orders is bound to be lashed, and if he resists or resents the punishment, he suffers death."[323] Faces were variously decorated for the warpath; and sometimes when a tribe is full of anger and resentment, but not engaged in actual war, they will paint themselves strangely. Once I was among the Shevwits of Arizona (1875) when they were nursing their wrath against the Mormons, and the faces of the men were painted in a way that perhaps seemed terrible to them, but which was laughable to me. Some had the face divided into three or four sections by different colours, for example: forehead white; left side of face, black; right side, red; with lines of each colour over the others. Ordinarily the number of wounds received in battle is recorded by streaks of vermilion.



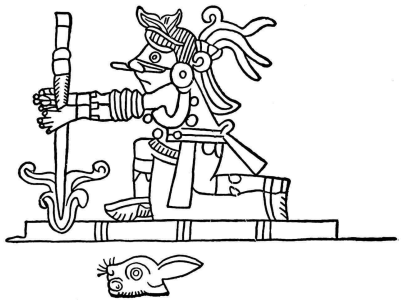
SHRINE OF THE WAR-GODS, TWIN MOUNTAIN, PUEBLO OF ZUÑI, NEW MEXICO

Before the acquisition of firearms and the horse, and the crowding back of tribe against tribe by the whites, wars were in some parts rather infrequent. Night attacks were never made. Captives were often compelled to run the gauntlet, and if they did it bravely they were adopted into the tribe. Frequently a captive was given his life without this ordeal if he would join the tribe of the captors and fill the place of some slain warrior. Cooper utilises this custom where Deerslayer is offered his liberty if he will take the wife and family of one he has killed and become a member of the tribe. Such adoption always rested, however, on the consent of the kindred of the deceased. The war-gods were propitiated by acts of cruelty, and by human sacrifices from among the prisoners. It is related by Bancroft[324] that on one occasion the Iroquois sacrificed an Algonquin woman, exclaiming, “Areskoni, to thee we burn this victim; feast on her flesh and grant us new victories.”

Her flesh was afterwards eaten as a religious rite. Cannibalism of this kind prevailed in many tribes; *always, ostensibly*, a religious ceremony, not a means of satisfying hunger. The victims were often richly feasted and generously treated for some time before being executed. Payne holds that the Aztec custom of consuming captives at religious feasts was in reality a means of procuring animal food resulting from the limited meat supply, and that perpetual war was waged mainly to obtain prisoners for this purpose. [325] Prescott says: "Indeed the great object of war, with the Aztecs, was quite as much to gather victims for their sacrifices as to extend their empire."[326]



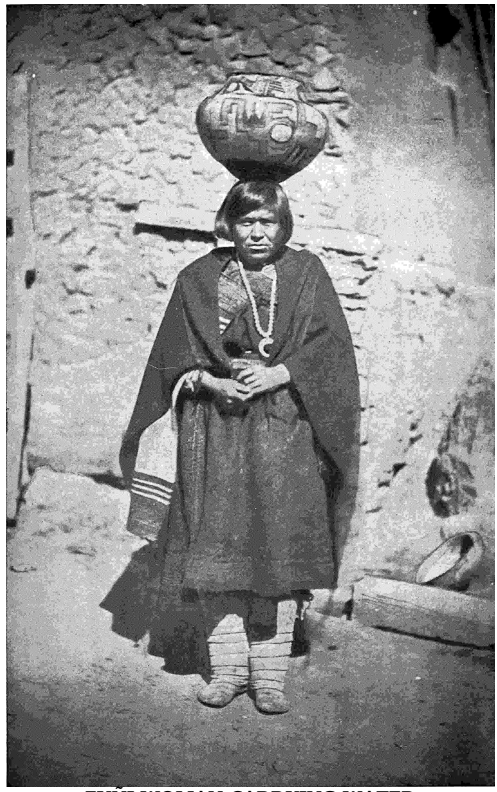
A COSTUME OF A HĀMATSA IN THE KWAKIUTL CANNIBALISTIC CEREMONY, WHERE SLAVES AND CORPSES WERE FORMERLY DEVOURED
The head and neck rings were from his mother's tribe, the Tongass (Tlinkit)



MEXICAN OPERATING THE PALM-DRILL FOR FIRE
Fac-simile outline of an original Mexican painting presented to the University of Oxford by Archbishop Sand

One of the great ceremonials of the Aztecs was the obtaining of the "new-fire," admirably described by Prescott, according to his custom. "On the evening of the last day, a procession of the priests, assuming the dress and ornaments of their gods, moved from the capital towards a lofty mountain, about two leagues distant. They carried with them a noble victim, the flower of their captives, and an apparatus for kindling the new-fire, the success of which was an augury of the renewal of the cycle. On reaching the summit of the mountain, the procession paused till midnight; when as the constellation of the Pleiades approached the zenith, the new-fire was kindled by the friction of the sticks placed on the wounded breast of the victim. The flame was soon communicated to a funeral pile, on which the body of the slaughtered captive was thrown. As the light streamed up towards heaven, shouts of joy and triumph burst forth from the countless multitudes

who covered the hills, the terraces of the temples, and the house-tops, with eyes bent anxiously on the mount of sacrifice. Couriers, with torches lighted at the blazing beacon, rapidly bore them over every part of the country; and the cheering element was seen brightening on altar and hearth-stone, for the circuit of many a league, long before the sun, rising on his accustomed track, gave assurance that a new cycle had commenced its march and that the laws of nature were not to be reversed for the Aztecs."[327]



ZUÑI WOMAN CARRYING WATER
Shows also style of moccasin and leg wrapping worn by Puebloan and Navajo women

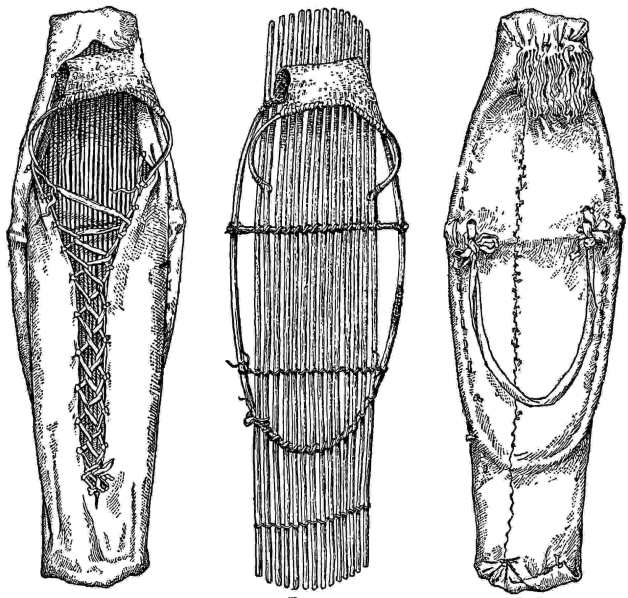
New-fire was also obtained by friction, with the

Aztecs, once each year, and once each four years, as well as at the fifty-two year cycle. In Arkansas it was produced every year. On a certain day, “as the sun began to decline the fires were extinguished in every hut, and universal silence reigned.”[328] A priest next produced fire by friction. “It was then brought out of the temple in an earthen dish and placed upon an altar that had been previously prepared in the square. Its appearance brought joy to the hearts of the people as it was supposed to atone for all past crimes except murder. A general amnesty was proclaimed except for this one crime, and all malefactors might now return to their villages in safety.”[329] The Mokis still produce the new-fire each November.[330]

Sacrifices to the gods were made by the Mayas at the sacred *cenoté* of Chichen Itza, and similar places.[331] This sacred well was one of the openings to the subterranean waters of Yucatan, and was about one hundred and fifty feet in diameter and sixty-five feet deep from the brink to the surface of the water, with perpendicular sides. Pilgrims came here to make offerings and Landa states that in time of drought they would cast live men into it as a tribute to the gods, believing that though they disappeared they would not die. Valuable property was also thrown in and still lies with the bones at the bottom. Charnay tried to work some automatic sounding machines there, but he failed to obtain satisfactory results. Among the Aztecs a person to be sacrificed was extended full length over a convex stone, and the priest with a long obsidian knife made a gash in the breast through which he extracted the living heart and laid it at the feet of the idol. Parts of the victim were afterward served at a grand ceremonial banquet. “Forty days previous to the festival of

Quetzalcohuatl," says Bandelier, "a slave was selected, who must be in perfect health and of faultless body. He was dressed in the same manner as the idol, and, after having been carefully bathed, and kept in 'honourable confinement,' as an object of worship for that length of time, he was sacrificed at midnight. The heart was tendered to the moon, and afterwards thrown at the idol, and the body cut up, cooked and publicly devoured."[332] In times of drought children from six to ten years old were offered up; they were not eaten, but buried before the idol. The priests who officiated were medicine-men, or shamans. Every tribe on the continent had shamans. These individuals held a peculiar power, and among tribes known to us now they still exercise it. Even among the Christian Pueblos of New Mexico, the authority of the shaman has not altogether waned and ancient rites are said to be still enacted in secret. For some of these it is believed rattlesnakes have been carefully guarded for years. "Among Indians," Mooney states,[333] "the professions of medicine and religion are inseparable. The doctor is always a priest and the priest is always a doctor. Hence to the whites in the Indian country the Indian priest-doctor has come to be known as the 'medicine-man' and anything sacred, mysterious, or of wonderful power or efficacy in Indian life or belief is designated as 'medicine,' this term being the nearest equivalent of the aboriginal expression in various languages. To make 'medicine' is to perform some sacred ceremony, from the curing of a sick child to the consecration of the Sun-dance lodge." An Iroquois student states,[334] that, "among the Indians, the knowledge of the medicine-man and the more expert sorceress is little above that of the body of the tribe. Their success depends entirely on their own

belief in being supernaturally gifted and on the faith and fear of their followers. I do not believe that the Iroquois lives to-day who is not a believer in sorcery, or who would not in the night time quail at seeing a bright light the nature of which he did not understand."



UTE CRADLE, FRAME OF RODS COVERED WITH BUCKSKIN
Carried on the back. In principle the majority of Amerind cradles are similar

The functions and powers of the shamans or medicine-men have never been completely understood, but over the sick they carried on various incantations and administered decoctions of native vegetable and animal substances. Powell defines a shaman as "a person who has the power to control ghosts through magic." They mortified their own flesh and the priests of Mexico would pierce their tongues and draw through the wound thus formed a long knotted cord, or twigs fastened together, or a

cord set with some animal's claws or teeth. Speaking of Mexico, Prescott says:[335]

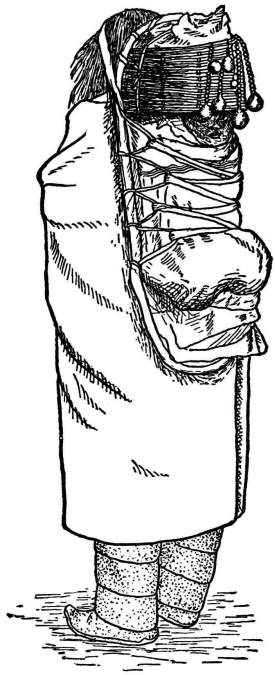
"In no country, not even in ancient Egypt, were the dreams of the astrologer more implicitly deferred to. On the birth of a child he was instantly summoned. The time of the event was accurately ascertained, and the family hung in trembling suspense as the minister of Heaven cast the horoscope of the infant and unrolled the dark volume of destiny. The influence of the priest was confessed by the Mexican in the first breath which he inhaled." Other tribes were not behind. In some the shamans were hereditary, but it would seem that their selection and appointment were due to various regulations existing in the secret orders and also to a reputation for the possession of occult power. Some writers hold that the shamans are self appointed, but this does not seem to correspond with the intricacies of the Amerindian social organisation. Powell adopts the Algonquin name for them, *jossakeeds*, and describes them as the head men of the fraternities. Whatever he may do to obtain his supposed magical powers, it would appear reasonable to believe that so prominent a functionary as this shaman, or jossakeed, would require in the beginning to be a man of some distinction, or special initiation. In making such decoctions as he used the shaman boiled various plants together with a stone arrow-head, or similar article. Out of twenty plants used by the Cherokees, only seven are noted in the United States Dispensatory. "Five plants or 25 per cent.," says Mooney, "are correctly used; 12 or 60 per cent. are presumably either worthless or incorrectly used, and three plants or 15 per cent. are so used that it is difficult to say whether they are of any benefit or

not. Granting that two of these three produce good results as used by the Indians, we should have 35 per cent., or about one third of the whole, as the proportion actually possessing medical virtues, while the remaining two thirds are inert, if not positively injurious." "For a disease caused by the rabbit the antidote must be a plant called 'rabbit's food,' 'rabbit's ear,' or 'rabbit's tail'; for snake dreams, the plant used is 'snake's tooth,'" and so on, "an empiric development of the fetich idea."[336] No sanitary precautions were taken during the treatment except fasting. When the patient eats, certain kinds of food are forbidden, but on the ground of some fancied connection between the disease and the food. If squirrels are supposed to be at the root of the trouble, the patient is prohibited from eating squirrel meat.[337]



ESKIMO WOMAN OF POINT

BARROW CARRYING CHILD
Photograph by Capt. Healy, U. S. R. M.



APACHE WOMAN CARRYING CHILD
Shows also moccasins and leg wrappings similar to the Puebloan and Navajo

The sweat bath was, and is, the great cure-all among the Amerinds, except the Central and Eastern Eskimo. It was also a means of religious purification. Sometimes the sweat house was a large structure, but usually it was only large enough to hold one or two persons in a squatting posture, and was constructed of poles covered with skins, blankets, or earth. The patient entered and those outside heated stones and passed them in to him by means of sticks. Water or some decoction was then poured over the stones and

the opening closed. Profuse perspiration was the result. At the proper time, if a stream were near, the patient would run out and plunge in; otherwise cold water was poured over him. This was the chief remedy for smallpox, which has made such ravages in all tribes, but of course it was ineffective. The sweat lodge and the sweat bath connected with it must not be confounded, as is often the case, with the *estufa*, (or *kiva*). The latter has no connection with the sweat bath, but is an entirely different thing, the confusion arising from the Spanish term, which means a hothouse, derived from the fact that the kivas are kept stiflingly close and hot in winter.

Most Amerinds believe that all living things, even trees, once had human shape, and "have been transformed, for punishment or otherwise, into their present condition." They had no understanding of a single "Great Spirit" till the Europeans, often unconsciously, informed them of their own belief.

The Iroquois in many ways were the finest Amerinds of all. Brinton says, "unsurpassed by any other on the continent [physically], and I may even say by any other people in the world."[338] "In legislation, in eloquence, in fortitude and in military sagacity they had no equals," says Morgan.[339] He also maintains that they represented "the highest development the Indian ever reached in the hunter state." "Crimes and offences were so unfrequent under their social system that the Iroquois can scarcely be said to have had a criminal code." Theft was barely known, and "on all occasions, and at whatever price, the Iroquois spoke the truth without fear and without hesitation."[340] The Iroquois, Algonquins, and other stocks carried on a considerable commerce with far-distant points. "The

red pipe-stone was brought to the Atlantic coast from the Coteau des Prairies, and even the black slate highly ornamented pipes of the Haidah on Vancouver Island have been exhumed from graves of Lenapé Indians."[341] The wide extent of Amerindian commercial traffic has hardly been appreciated.



Photograph (reversed)
MOKI "SNAKE DANCE" AT WALPI
Snake priests in action

The religion of most of the Amerinds was zoötheism—that is, their gods were deified men and animals. The heavenly bodies, personified as men and animals, also formed a part of their galaxy. Their worship of these various deities, who were believed to control each his division of human affairs and earthly phenomena, was through numerous ceremonials, many of them embodying their form of dancing, and called by the whites "dances," though this term fails properly to describe them. Often there is very little dancing, and even that has a minor part. The ceremonials take place at all times and seasons, many being as absolutely fixed to a certain date as our own holidays or church celebrations. The Eastern tribes had ceremonials on tapping the maple trees, and others for the close of the maple-sugar season.

There were also the Corn-Planting Festival, the Strawberry Festival, the Bean Festival, and the famous Green Corn Dance of the Iroquois, followed by the Harvest Dance. Some ceremonials occur in their perfection only at specified intervals, as the Snake Dance of the Mokis, which, while performed annually at some one of the towns, is seen in its full glory only once every two years at the village of Walpi. This now famous ceremonial, in which a hundred or more rattlesnakes are used alive, covers altogether a period of nine days, including the search for the snakes, as well as rites performed in the kiva. It is only on the last two days that there are public ceremonies. Spectators who are known or have a proper introduction are sometimes allowed to visit a kiva when it is reserved by the order owning or controlling it; at other times a visitor is generally freely admitted. During my stay in the Moki country I never was barred from any place that I desired to enter; though it may have happened that I never tried to enter at a time when outsiders were forbidden. The snakes are brought out of the kiva by one set of priests, or shamans, and dropped on the ground to be picked up by another set with much ceremony. At the end all the snakes are carried to the valley and liberated to return through their holes to the underworld, there to communicate the desires of the people to the gods. The towns of the Mokis on the East Mesa are now frequently visited by whites, but Oraibi and the others are not so often approached. When I went to Oraibi, in 1885, we were followed about by a band of curious small boys, and the women peered at us from the roof hatchways, quickly ducking out of sight if one of us happened to look their way. The men declined to talk except in monosyllables, and I am free to confess

that it was a relief to finally mount and ride away. Oraibi has never had a reputation for hospitality. From there we went to Shimopavi, where our reception was exactly the reverse of what it had been at Oraibi, and I shall always remember with pleasure the frank, genial, smiling men who received us in one of the chief kivas, and the alacrity with which a clean repast of watermelon and piki was brought and placed before us. This only shows what a difference in manners may exist in the divisions of one tribe, and how easy it would be to denounce all the Mokis as being surly and ugly, if one saw only the Oraibi branch.

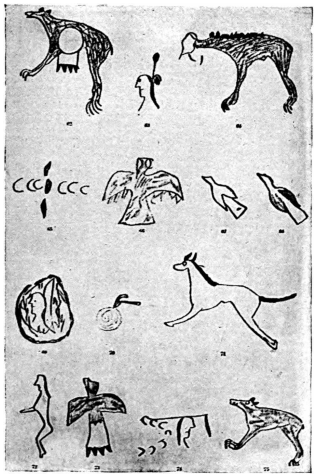


Sixth Ann. Rept., Pl. V. Drawings by the Central Eskimo. **See page 59.**



Fourth Ann. Rept., Pl. XXXVIII.

Page of the Dakota Winter-Counts, also called by them "Counts Back." See page 60.



Fourth Ann. Rept., Pl. LXIII. Page from Red Cloud's Census, Dakota. See page 60.



Fourth Ann. Rept., Pl. IV.
Ojibwa Mnemonic Record of a Midē Song.
See page 58.

AMERINDIAN PICTURE-WRITING



Photograph (reversed)
BEGINNING OF THE MOKI "SNAKE DANCE" AT WALPI
Antelope priests lined up
This scene precedes the one on page 376

A simple occurrence means to the superstitious

mind of the Amerind a great deal. In illustration of this I may mention that two men I knew were one day at one of the Moki towns and carelessly entered a kiva where the preparing and blessing of certain sacred water were in progress. When they had departed, a frightened rock-wren fluttered in. This was accepted as an evil omen. The bird was immediately killed and some of its blood sprinkled over the floor of the kiva. Then it was taken to the first house the whites had entered when they arrived at the town, and more blood sprinkled wherever they had stood. After this the bird's body was carefully laid outside, near the door.

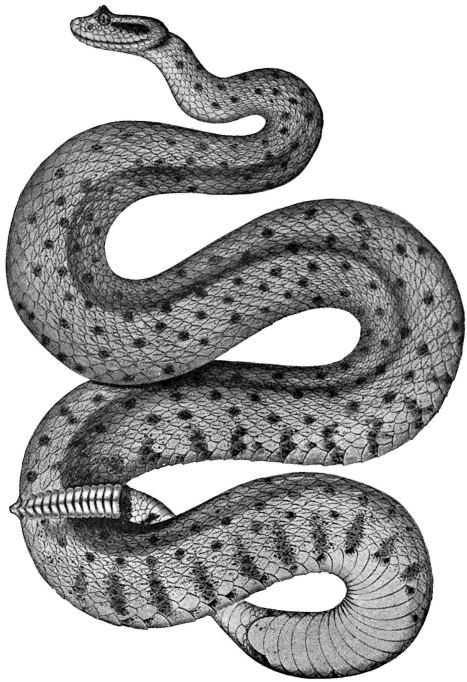
Thus the struggles of a dazed bird are considered by these people a portentous circumstance.

The dancing of the Amerinds is everywhere much alike, and it is generally performed in a circle. It has been described as a heel dance, and with some tribes is apparently that because they seem to strike the ground only with the heel, but it is usually a toe-and-heel step, the toe first touching and then the heel being brought down with more or less force. When rapidly done the separate touching of the toe is hardly noticeable. The movement of the circle is commonly from left to right, and during this progress various contortions are gone through with, more or less violently according to the intensity of the occasion. In the remarkable *Okeepa* ceremony of the Sioux fearful tortures were submitted to, and sometimes a bison skull was dragged around by means of ropes attached to skewers thrust through the bodies and limbs of the performers. They were also pulled aloft in the dancing-lodge by these skewers, and the pain was often so intense that the devotee would faint. (See page 382.) When Catlin

first described this ceremonial and its ordeals it was received with doubt, but it has since been seen by others and fully authenticated. It is, of course, not possible to more than touch on the customs and ceremonies of the Amerinds in this short chapter. A large volume would be required to exhibit even a quarter part of the details.

The ceremonials[342] of the Pueblos are marked by elaborately costumed katcinas,[343] but perhaps not more so than those of other tribes. Those of the North-west coast are full of strange costumes also, and the plains tribes executed their wild scalp dance, bear dance, buffalo dance, etc., in costumes that were as singular as the dance itself. In the ceremony of the Mokis called Soyaita or Somaikoli, I counted sixteen different katcinas with extraordinary costumes weighing them down, except one who wore nothing but a round bullet-like mask and a breech-cloth. The others were so loaded that it was nearly impossible to recognise in them human beings. The preparations for a ceremonial occupy a week or two beforehand. One evening, some time before the public performance of the Somaikoli, as I was walking from one village to the other on the East Mesa, I was about half way when I suddenly became aware of a hideous yelling ahead of me, and discovered the flaring of torches in the darkness. There being no rock, tree, or shrub near, I was fully illumined by the glare as the torches approached. Then I saw six stalwart fellows, entirely nude, except for the breech-cloth, though it was a chilly night in November. I paused to await results, as I perceived they meant to come tip with me. I could not understand their object. They were marching in single file. When they saw that I was not a native, but the solitary white visitor to the mesa who lived

at Hano, they grinned and passed on without a word. What they would have done with one of their people I do not know, but I heard afterwards that they captured anyone they found out and kept them in one of the kivas till the day of the public ceremony. At any rate, I found that everybody took care to be indoors on this night between certain hours. The mysteries of the different secret orders are not known to outsiders, not even if members of the tribe. [344]



HORNED RATTLESNAKE, CROTALUS CERASTES

Commonly called "Sidewinder" because of its sidling motion. Inhabits desert plains and valleys of Southern Arizona, California, and Nevada, and south-western Utah. One killed by the author in 1875 was about three ft. long. The rattlesnake was identified with religious ceremonials of most of the tribes from Ohio to Central

America

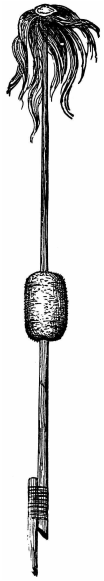
Photographs and paintings were considered "bad-medicine" by most tribes, and I had no success whatever in persuading the Mokis to pose for me when I was there. One who finally consented ran away when it came to the test. I was permitted to use my snap-camera and to sketch buildings freely, but when it came to painting persons they rebelled. They believed that the possessor of a likeness held power over the person represented.



From a painting by George Catlin, 1832

THE OKEEPA CEREMONY OF THE MANDANS, LASTING FOUR DAYS

"A number of the young men are seen (inside the Mystery Lodge) reclining and fasting ... others are yet seen in the midst of those horrid cruelties. One is seen smiling whilst the knife and the splints are passing through his flesh. One is seen hanging by the splints run through the flesh on his shoulders and drawn up by men on the top of the lodge. Another is seen hung up by the pectoral muscles with four buffalo skulls attached to splints through the flesh on his arms and legs; and each is turned round by another with a pole till he faints, etc."—Catlin's *Eight Years*, vol. i; also *Smithsonian Report*, 1895, p. 362

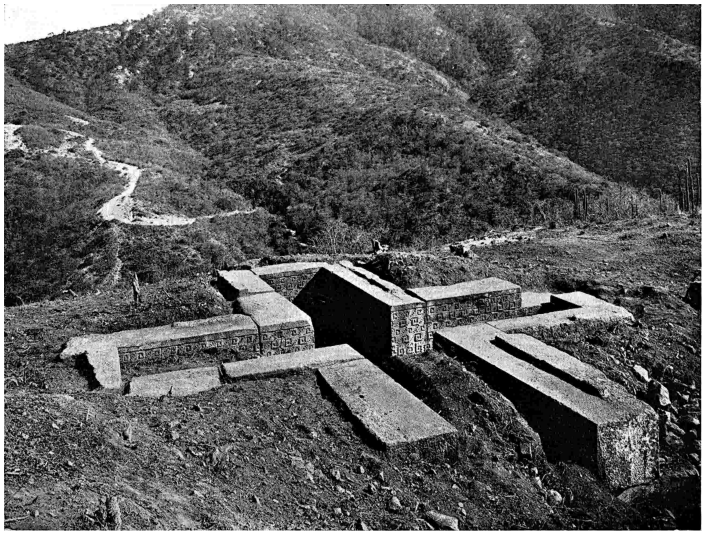


THE SACRED POLE OF THE OMAHA Now in the Peabody Museum

Murder in most tribes was settled by property atonement, or by the assumption by the guilty one of the victim's duties, and when once settled the matter could never again be reopened. No controversy was ever permitted, and to terminate it there were three methods: 1. When controversy arises in relation to ownership, the property is usually destroyed by the clan or by the tribal authorities. This is one reason why property is found buried with Amerinds. By thus disposing of it all controversy is avoided. Or the property may be completely abandoned by all concerned, as in the case mentioned by Powell, where a war party of Sioux surprised and killed a

squad of sleeping soldiers at the first volley. “Their arms, blankets, and other property were untouched because the attacking party being large, it could not be decided by whose bullets the soldiers were slain.” 2. If two persons come to blows, it is, unless serious injury be done, considered a final settlement. Appeal to authority is thereby forever barred in that matter. 3. Establishment of a day or festival once a month, usually once a year, beyond which crimes do not pass. Marriage is by what is called legal appointment. In this way controversy over the women of a tribe is largely avoided, for little is left to personal choice. But kinship groups allowed to intermarry do not remain stationary in numbers, hence, one set of men may have many wives to choose from, another few, which, says Powell, leads to modification of the principle and three additional forms of marriage are the result, by elopement, by capture, and by duel. That is, if a pair elope and can evade their pursuers till the day limiting controversy has passed, they are safe from molestation. We once met an interesting example of this class in the Uinta Valley, Utah, and with our boats put the runaways across Green River, thus obliterating their trail, though at the time we did not so well understand the situation. A group of men who have but a limited class to choose wives from sometimes combine to capture for one of their number a wife from some other group within their own tribe. A fight is often the result, but without weapons. A second battle for the same woman at that time is not permitted.[345] Or one man, if he feel strong enough, may deprive some other fellow in his own tribe of his wife. In southern Utah, Tom came to our camp one night weeping bitterly, and when I could get at his statement it was to the effect that someone had deprived him of his

wife. Our men were indignant and wished to proceed forthwith to the Amerind camp and compel the thief to restore the wife to Tom, but they finally decided to abandon him to the established customs of his people.



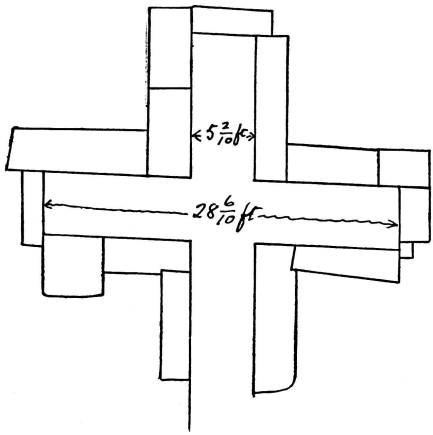
Photographed by Saville

CRUCIFORM STONE TOMB, OAXACA

This tomb, recently discovered and excavated by Saville, is one of the remarkable monuments of Amerindian antiquity. It lies five miles east of Mitla and one thousand feet above it on the spur of a mountain.

About a mile north-west are the quarries from which the great stones were obtained. The tomb was never finished. It fronted west.

The north, east, and south arms of the cross do not vary in dimensions by the fraction of an inch. The length of each is 11.7 ft. and the width 5.2 ft., while the depth is 7.5 ft. There are three courses of huge stones, the largest measuring 12 ft. long by 3.3 ft. high and 3 ft. thick.



GROUND PLAN OF CRUCIFORM TOMB, OAXACA

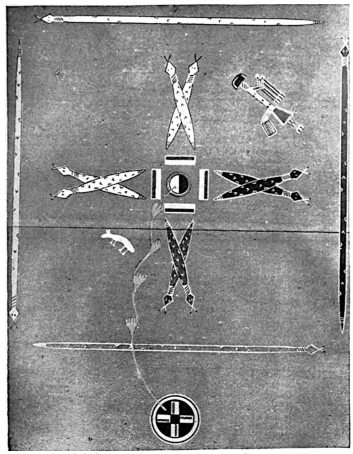
Sometimes a woman is assigned to a man who already has a wife, while some other man has none, because the group into which he is permitted to marry is exhausted. He then challenges the man who is entitled to more than one and endeavours to win the woman by success in battle. On one occasion in southern Nevada a white man's sympathies were so aroused by one of these affairs, in which the girl was being roughly pulled about, that he threw off his coat and, taking an active part in the struggles, rescued her. Then he was amazed at the information that the girl belonged to him and he must keep her. This he declined to do and turned her over again to their tender mercies. These three forms of marriage become roundabout methods of personal choice. When the supply of wives is normal the young man in some tribes goes out into the woods by a certain trail, and if the girl of his choice follows him, it is considered a marriage, and is celebrated with prescribed ceremonies. Polygamy was practised by most tribes. Among the Navajos, who buy their wives, it is very common, but there a wife can depart

at pleasure, and as the husband acquires no right to her property, she takes it with her.

Totemism is an important custom in vogue among all the stocks of the continent, and it was probably a custom the world over when tribes were in a certain stage. The word totem is derived from the Ojibwa, and is said to have first been introduced into literature by one Long, an interpreter. Totems are of three kinds: clan totems, sex totems, and individual totems. The first are the most important.[346] Totemism is at the same time a religious and a social system. The totem is usually an animal, as a frog, bear, bat, etc. The Amerind believes that between these objects and himself there is a particular bond, and he has for them the most profound respect. From them he believes himself descended. Therefore he would not harm an animal that was his totem. The Bear clan would not kill a bear, the Red Maize clan would not eat red maize, and so on. Totemism existed among the Israelites, and the objection to eating pork is supposed by some to rest on the pig having been one of their totems. The Amerind also generally derived his name from some animal or object, and he represented this as his individual totem mark. In the totem poles of the North west coast, these various representations of totems were combined and set up before the door to indicate the relationships of the persons who lived there.[347]

Cleanliness varies among the tribes, and is sometimes in proportion to the ease or difficulty with which water can be procured. The Mokis who live in an arid country and have to carry water long distances seldom waste it in bathing or washing, though I did once see an old Moki fill his mouth with water and blow it out in instalments over his hands.

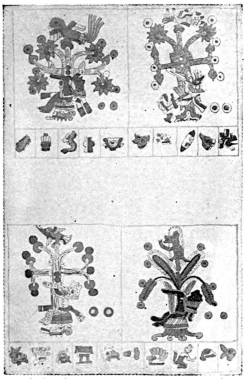
The Omahas, according to Dorsey, generally bathe twice every day in warm weather. They used to help women and children to alight from horses, and sometimes carried them over streams on their backs. Old men and women were never abandoned by them. Some men were not wanting in gallantry. Dorsey tells of a young woman who wished to halt at a spring. Her brother was with her. The ground was muddy and she would have soiled her clothes had she knelt to drink, but another man rode up at the moment, and, jumping from his horse, he pulled a lot of grass, placing it on the wet ground so that she could drink without soiling her dress.



Fifth Ann. Rept., Pl. XV.
A Navajo "Dry" Painting made with sand in the Mountain Chant Ceremony. **See page 61.**

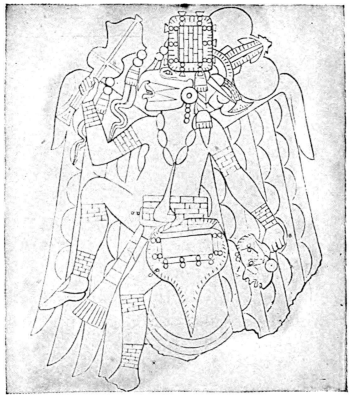


Fourth Ann. Rept., Pl. LII. Page of an Oglala Roster —"Big-Road" and band.
See page 59.



Third Ann. Report, Pl. IV.

Copy of Plates 65 and 66, Vatican Codex B. Each figure is a tree with a person clasping the trunk.
See page 72.



See Twelfth Ann. Rept., Pl. XVII.

Drawing restored from fragments of a thin copper plate, in repoussé work, from a mound of the Etowah group, Georgia.

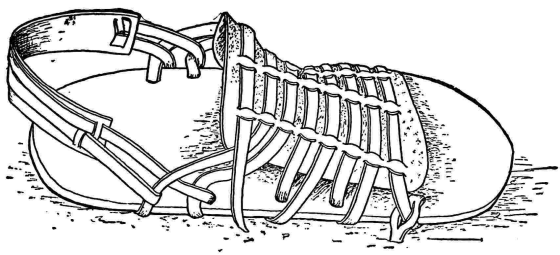
AMERINDIAN ART



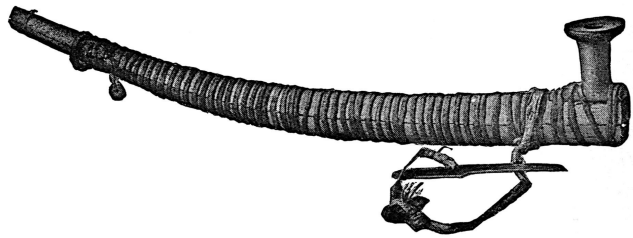
MOKI EARTHEN CANTEEN, ARIZONA. ¼

When he died the Amerind was disposed of in a number of different ways. There were burials in pits, graves, mounds, cists, caves, and so on; there was cremation; there was embalming; there was aërial sepulture in trees or scaffolds; there was burial beneath water, or in canoes that were turned adrift.

The Navajos leave the dead in the place where they die, or throw them into a cleft in the rocks and pile stones upon the corpse. In Tennessee graves are found which were made by lining a rectangular excavation with slabs of stone. These are ancient and resemble the graves of the reindeer period in France. Yarrow[348] speaks of them as being almost identical. I found graves of similar description in southern Utah near the Arizona line, but in the two or three that I opened there were no bones, only on the bottom a shallow layer of what appeared to be fine dark earth with thin slabs upon it; doubtless the slabs once forming the top.[349] Some tribes wrapped their dead in fine furs or in grasses and matting;[350] others buried in urns. In the North-west a living slave was buried with the deceased. If the slave were not dead in three days, he was strangled by another slave. In Mexico the custom of burying slaves with the dead was common.



MODERN LACED SANDAL OF LEATHER FROM COLIMA, MEXICO



ESKIMO PIPE WITH STONE BOWL. ⅓

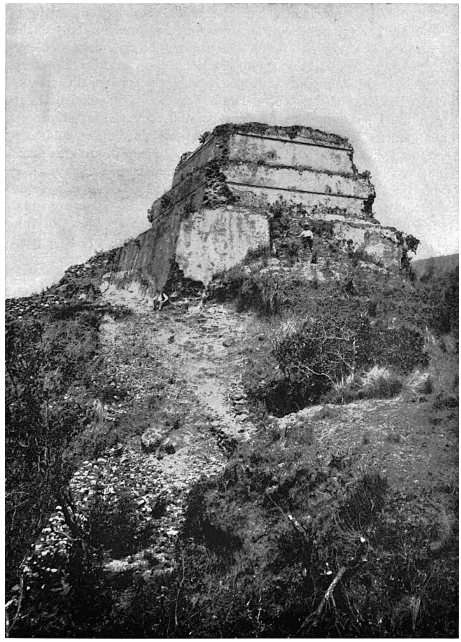
CHAPTER XIV

MYTHS, TRADITIONS, AND LEGENDS

PERSONS who are obliged to rely on memory find that memory develops with use and becomes more reliable. The Amerinds, having no written language, if we except the Nahuatl and Mayan tribes, had no way of preserving their tales, traditions, and legends except to remember them, and there can be no doubt that everywhere on the continent memory was highly developed. To assist in recalling them they had their picture-writing, already described. The method is well illustrated in the remarkable *Walam Olum*, or Red Score of the Lenapé, where a most poetic account of the origin of things is recorded by means of a few rude pictures made by lines and dots. [351] There has been some doubt as to the genuineness of this score, first recorded by Rafinesque, but Brinton, who was a scholar of fine intellect and calm judgment and thoroughly versed in all the intricacies of the situation, accepted it as a genuine Amerind production "which was repeated orally to someone indifferently conversant with the Delaware language, who wrote it down to the best of

his ability. In its present form it can, as a whole, lay no claim either to antiquity, or to purity of linguistic form. Yet, as an authentic modern version, slightly coloured by European teachings, of the ancient tribal traditions, it is well worth preservation.... The narrator was probably one of the native chiefs or priests, who had spent his life in the Ohio and Indiana towns of the Lenapé, and who, though with some knowledge of Christian instruction, preferred the pagan rites, legends, and myths of his ancestors. Probably certain lines and passages were repeated in the archaic form in which they had been handed down for generations.... The cosmogony describes the formation of the world by the Great Manito, and its subsequent despoliation by the spirit of the waters, under the form of a serpent. The happy days are depicted, when men lived without wars or sickness, and food was at all times abundant. Evil beings of mysterious power introduced cold and war and sickness and premature death. Then began strife and long wanderings."[352] We can readily understand how a few rude lines could recall to the Amerind mind a whole story, and especially to the mind of one trained to exercise his memory in such directions. It is not necessary for me to do more for the Christian reader than write "*Xmas*," and he can from it review the whole wonderful story of Christ in all its details. So it was with the Amerind. Those entrusted with the preservation of the legends, etc., learned them perfectly and year by year repeated them on the proper occasion to their followers. Changes were probably sometimes made in the text of some to suit them to changed conditions, but the accuracy was so great that myths and legends have been found to contain archaic words which the members of the tribe were unable to explain, and

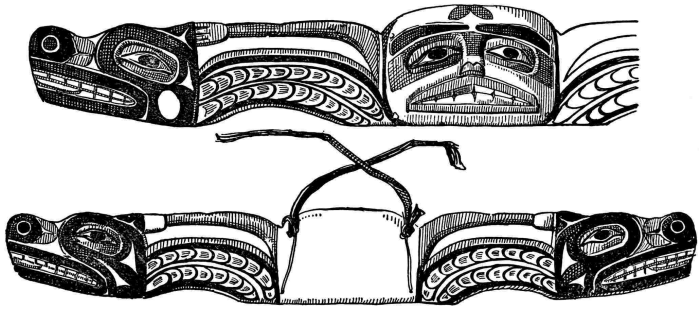
which yielded only to the expert analysis of a white linguist.



Photographed by M. H. Saville

TEOCALLI (TEMPLE) OF TEPOZTLAN, STATE OF MORELOS, MEXICO

This view is from the west or back and shows a stairway and also the built up mound forming the foundation. The front is entered by a broad flight of about fourteen steps. The construction is stone. The site, formerly approached by flights of steps, is on the summit of a high and dangerously precipitous mountain. The ground plan, about 30 ft. square, is similar to the first plan on page 238, with a front like the second. The outer walls are 1 meter, 90 centimeters thick. They were covered with a smooth cement, which was painted in different colors. See page 240.



KWAKIUTL WOOD CARVING OF THE SISUL, NORTH-WEST COAST
Worn in front of the stomach. Length, 42 in. See page 168

With the Amerind a group of myths, traditions, and legends developed along with each particular stock. Each language had its own accumulation of these tales, etc., relating to animals, to natural forces personified, and sometimes to real personages. Savage races worship animal gods and natural objects personified as animals.[353] In the middle state called barbarism the religion becomes a worship of the phenomena of nature, pure and simple, frequently personified as animals or beings, as in the case of the thunder and lightning generally attributed by the Amerinds to the mysterious "thunder-bird," which is also believed by some to be a great being who takes on the form of a bird. In civilisation the worship of one God takes the place of all the others, while the myths and legends of earlier days survive in mythological literature and in unconscious thoughts and acts of individuals. Looking at the moon over the right shoulder for luck, objections to a certain number, the belief that one stone is lucky and another unlucky, are all remnants of the era of zoötheism, physitheism, and other early beliefs.[354] Races cannot shake off earlier beliefs entirely, but continue them under changed forms. Thus we celebrate many pagan rites in our holidays,

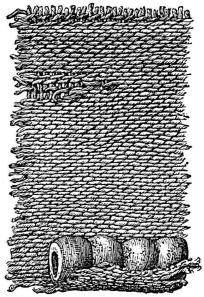
and pay a tribute to the Druid priests every time we suspend a branch of mistletoe in our parlours in the season when the sun turns his course towards the vernal equinox.



RUSHING EAGLE, 1872
Second chief of the Mandans and son of Four Bears, Catlin's great friend

To primitive man night was a mysterious phenomenon, and dawn often became personified to him as a bright and fair deliverer, a beneficent being who comes out of the east bringing a train of blessings. Many myths recounting the coming of a hero, prophet, and teacher among the Amerinds and

other races are accounted for as being dawn myths, but there is danger of overworking this convenient hypothesis.



FINE CLOTH PRESERVED BY COPPER BEADS

In our literature many Amerind myths and legends have become firmly implanted, and they are now as much a part of it as the tale of Orpheus, or of Theseus, or of Hercules. Some of them have been beautified by the diction of our poets, and Longfellow's rendering of *Hiawatha* is admired the world over. This is good literature, but it is not good ethnology, because in it an Iroquois hero-god is placed in a setting of Algonquin legends, but this was not Longfellow's mistake, but Schoolcraft's, on whose work Longfellow based his poem. Jeremiah Curtin says: "Schoolcraft, with his amazing propensity to make mistakes, with his remarkable genius for missing the truth and confusing everything with which he came in contact, gave the name Hiawatha to his patchwork.... In the face of all this Schoolcraft makes Hiawatha, who is peculiarly Iroquois, the leading personage in his Algonkin conglomerate: Hiawatha being an Iroquois character of Central New York (he is connected more particularly with the region about Schenectady), while the actions to which Schoolcraft relates him pertain to the

Algonkin Chippewas near Lake Superior. It is as if Europeans at some future age were to have placed before them a great epic narrative of French heroic adventure in which Prince Bismarck would appear as the chief and central Gallic figure in the glory and triumph of France."[355]

But Hiawatha, nevertheless, is incorporated in our language and our literature, and altogether the conquered race, as was inevitable, has left an impress on our character, on our language, on our geography, and on our literature which can never, even if desired, be effaced. The mark of our contact with the red man is upon us indelibly and forever. George Bancroft is not quite right when he says, "The memorials of their former existence are found only in the names of the rivers and the mountains." These memorials have not only permeated our poetry and literature generally, but they are perpetuated in our daily food, and every mention of "succotash," of "mush," of "chocolate," is a tribute to their existence, while the fragrance of the "tobacco" we smoke is incense to their memory. Mrs. Sigourney touched this subject prettily in the little poem entitled *Indian Names*:

"Ye say they all have passed away,
That noble race and brave,
That their light canoes have vanished
From off the crested wave;
That mid the forests where they roamed
There rings no hunter's shout,
But their name is on your waters,
Ye may not wash it out.

"Ye say their cone-like cabins
That clustered o'er the vale

Have fled away like withered leaves
  Before the autumn gale.
But their memory liveth on your hills,
  Their baptism on your shore;
Your everlasting rivers speak
  Their dialect of yore."

And she might have added that their gods have seated themselves with those of the Greeks in our libraries; that Michabo, Tlaloc, Quetzalcohuatl, and others are now companions of Jupiter and Neptune; in short, that their literature, which relied on oral transmission, has to a large extent been crystallised in our printed pages.

The Amerind, not fortified by our modern knowledge and philosophy, regarded the outer world in a far different way from what we do. To him it was not a place where a gold mine might be found, or good grazing or tillable soil, but he looked upon the far distance as the home of magical beings. Did the wind blow? It was the breath of some monster dwelling in a cave in the far west, or it was the beating of the wings of giant birds living at the four quarters of the compass. It was not to the sky alone that he looked for the abode of his gods; they came to him from every direction, even from the bowels of the earth. We know what the earth contains and we grope for the unknown. The Amerind did not know what the earth contains; it was still to him the abode of monsters and ghosts.

There is in some respects so great a similarity between the myths of the New World and those of the Old, that it was at first assumed that there must have been early communication with Europe, but more careful analysis has shown that this is but another evidence of what may be called the

parallelism of human development. Even where the similarity is greatest there is nothing to prove that the myths did not originate independently, and they are merely the results of similar thoughts, in similar stages of ignorance, about the sun, the sky, and natural forces.

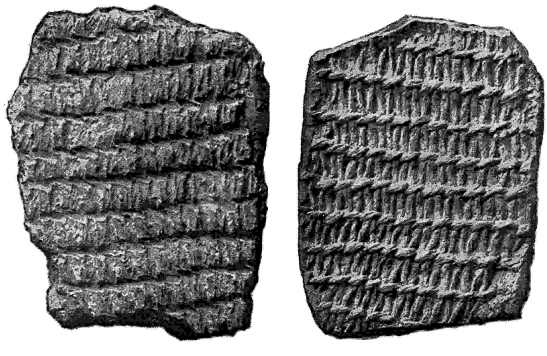
The *Popol Vuh*, the great collection of Quiche myths, presents Gukumatz as one of the four principal gods who created the world. Gukumatz means shining or brilliant snake, and hence seems to be the same character as that known to the Nahuatls, or Aztecs, as Quetzalcohuatl, whose name also means bright or shining snake. But among the Aztecs Quetzalcohuatl is represented as a man, while Gukumatz is purely a god. Quetzalcohuatl was the third of the four Mexican or Aztec gods, and to him is ascribed all the wisdom which came to the Aztecs. He appears under two forms, as a god and as an historical personage. He has been frequently identified with the dawn, but there seems to be good reason for believing that he was a real character, who became deified as his good deeds passed down to successive generations. Such prophets and teachers rise up in all times, in all ages, by the wayside of tribal or national development, like some rare and favoured tree of the forest which out-tops all the others. A divine origin may be claimed for these teachers and prophets, but generally they are only men endowed with an extremely fine moral sense and with a perception and knowledge beyond their time. “Among the Tzendals of Chiapas, the tradition of Votan, who is said to have been the first founder of that tribe, bears great resemblance to Quetzalcohuatl.”[356] After an admirable discussion of the subject of the character and origin of Quetzalcohuatl, Bandelier sifts the matter down to

this: that he was “a prominent gifted Indian leader, who certainly preceded the coming of those Nahuatl tribes that subsequently formed the valley confederacy, as well as that of the later tribe of Tlaxcallan. The claim to his origin accordingly rests between the so-called Toltecs on one side and the Olmeca and Xicalanca on the other.”[357] Brinton believed that Quetzalcohuatl was a pure personification of the dawn myth,[358] but there is too much testimony on the opposite side to permit the acceptance of this opinion as final. It must not be forgotten that there were very good, extremely good, almost saintly, men, and women, too, among the Amerinds. The historical Mexican tribes were preceded by other tribes, some of which had apparently reached a higher state of culture than the Aztecs, and Quetzalcohuatl possibly came from one of them as a teacher to the newer and less cultivated people; newer in the sense of having come into that region from some distance off. There is nothing preposterous in supposing that there were teachers and moralists in the early days of this continent. The character of a high-thinking teacher is not incompatible with some of the tribes that have lived and died on North-American soil. As stated previously, never were all the tribes of the continent in one culture condition; there were always tribes that could teach something to other tribes, and undoubtedly philanthropic individuals sometimes attempted the rôle of missionaries, just as they do in other races to-day. In fact, the recent “Resurrection Dance” or “Ghost Dance” had its prophet who preached to the natives that “the earth was to be all good hereafter; that we must be friends with one another.” Fighting, he declared, was “bad and all must keep from it.” “There is no doubt that his

religious teachings rest on a well-ordained religious system, and in spite of the numerous false reports that are spread about him, he does not claim to be either God or Jesus Christ, the Messiah, or any divine, superhuman being whatever. 'I am the annunciator of God's message from the spiritual world and a prophet for the Indian people,' is the way he defines the scope of his work among men.... Thus he considers himself a messenger of God appointed in a dream, and has on that account compared himself to St. John the Baptist."[359] This man is a full-blood, and it is evident that such an inspiration might have seized a man of a similar temperament at any period of Amerind history, and given rise finally to legends and worship that would incorrectly be ascribed to the myth of the dawn.



Potsherd Clay Cast



Potsherd Clay Cast

ANCIENT FABRIC-MARKED POTSHERDS, WITH CLAY CASTS BY HOLMES

See page 108

Quetzalcohuatl at length departed with a promise to return, and it was the belief that he would return that caused Montezuma to at first mistake the bearded Spaniards for his emissaries. Quetzalcohuatl also wore a beard.

Michabo, the Algonquin counterpart of Quetzalcohuatl, was considered to be the ancestor of the whole tribe, the founder of their ceremonies, the inventor of picture-writing, the ruler of the weather, the creator and preserver of earth and heaven. “From a grain of sand,” says Brinton, “brought from the

bottom of the primeval ocean he fashioned the habitable land and set it floating on the waters till it grew to such a size that a strong young wolf, running constantly, died of old age ere he reached its limits."



George Catlin, 1832
EHTOHKPAHSHEPEESHAH, THE BLACK MOCCASIN, CHIEF OF THE MINATAREES OVER 100 YEARS OLD

Among the Iroquois the hero-god was called Ioskeha, and he possessed many of the qualities of Michabo and Quetzalcohuatl, etc., though in his case as well as that of Michabo there seems to be no historical evidence of existence, as there is with Quetzalcohuatl, and therefore they may be, as claimed by Brinton and others, merely dawn myths.

It is possible that they may be compounds of a dawn myth and one or more actual personages.

The hero-god of the Mayas was Itzamna, and he was a beneficent personage like the others. Like Cadmus, he invented letters, and he also devised their calendar. He is spoken of as an historical personage and "is intimately associated with the noble edifices of Itzamal, which he laid out and constructed, and over which he ruled, enacting wise laws and extending the power and happiness of his people for an indefinite period."[360] Brinton identifies him with the dawn myth, but here again it is not conclusive. It seems quite as probable that he was a real person, upon whose history certain myths have been engrafted.

In putting the Amerind stories into other languages, embellishments and variations have often been introduced, or the translators have been deceived by interpreters or by the Amerinds themselves, while sometimes both causes have operated to colour or to alter the tales. Schoolcraft has generally been regarded as a faithful recorder, but in some instances he has gone considerably astray. In his time the Amerinds were not so well understood, nor were they, in all their various stocks, so accessible as now.

Formerly the European was prepared to find in the Amerind rites evidences of the Lost Tribes of Israel, of the Chinese, or some other extraordinary or romantic idea. He was not content to take things as they were. Marquette on arriving at Green Bay was delighted with what he believed to be an evidence of Christianity, a large cross set up in the middle of the village, adorned with skins, bows, etc., which the people were offering to their gods. It was only one of

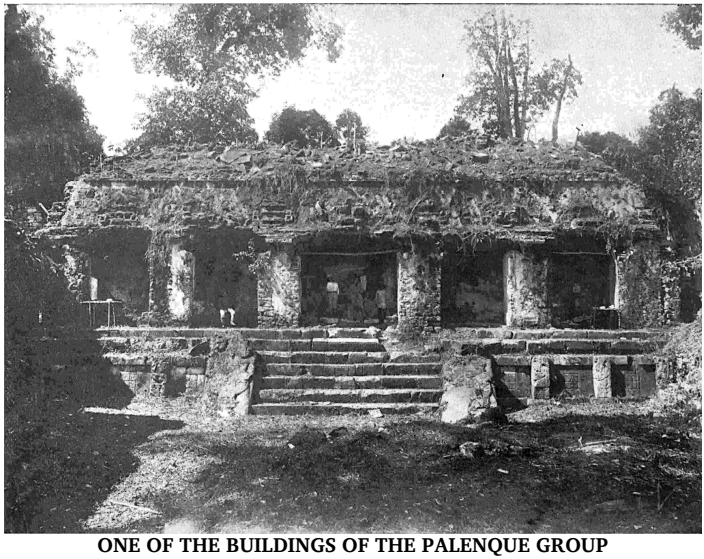
the symbols of the Midē society, and was in use long before the Discovery. In the same way Coronado found crosses in New Mexico, and there were also in Yucatan the tablets of the cross referred to in a previous chapter. The early Spaniards turned loose their own myths in the New World and then started in pursuit of them. Columbus himself was the first to float the Amazon myth to these shores, for in a letter to Rafael Sanchez he speaks of an island inhabited solely by women, and the Spaniards had a long and fruitless chase after it.[361] Thus they also pursued the myth of the *Seven Cities*, *El Dorado*, and similar tales. *El Dorado*, or, "The Gilded Man," really existed in a ceremony in New Granada, where a man was sprinkled with gold dust, but when the Spaniards had taken all the gold from these people they went on hunting for El Dorado just the same, though they never found him again.



LACANDON (MAYAN) AMERIND FROM CHOCOLHAO, YUCATAN

Certain resemblances between the myths of the Amerinds and those of the Israelites increased the belief that the American race is the Lost Tribes. The Mormons specially hold to this opinion. But there is positively no ground for the belief. The peculiar interest, however, which attaches to a comparison of Amerind and Israelite myths lies in the fact that they resemble each other, not only genetically, but specifically. They are alike in their details. Mallery has given much attention to this subject, and he says that “an Ojibway tradition tells the adventures of eight, ten, and sometimes twelve brothers, the youngest of whom is the wisest and the most beloved

of their father, and especially favoured by the high powers. He delivers his brothers from many difficulties which were brought about by their folly and disobedience. Particularly he supplies them with corn.... The Chahta have an elaborate story of their migrations, in which they were guided by a pole leaning in the direction which they should take, and remaining vertical at each place where they should encamp. A still closer resemblance to the guidance of the Israelites in the desert by a pillar of fire is found in the legendary migrations of the Tusayan (Mokis), when indication was made by the movement and the halting of a star. The Pai Utes were sustained in a great march through the desert by water that continually filled the magic cup given to the Sokus Waiunats in a dream until all were satisfied; and a similarly miraculous supply of food to the starving multitude is reported by the same people. In the genesis myth of the Tusayan, the culture hero was enabled to pass dry-shod through lakes and rivers by throwing a staff upon the waters, which were at once divided as by walls.... Mr. W. W. Warren, in his *History of the Ojibway Nation*, tells that he sometimes translated parts of Bible history to the old Ojibway men, and their expression invariably was, 'The book must be true, for our ancestors have told us similar stories generation after generation since the earth was new.'" There is also a strong resemblance between many of the Amerind myths and stories, and those of the negro, as anyone may see who will compare them with Harris's delightful *Uncle Remus*.



ONE OF THE BUILDINGS OF THE PALENQUE GROUP
House "C" on Maudsley's plan
Construction: stone. Site: tropical forest, Chiapas, Yucatan. Abandoned in prehistoric time. There was but one room with the five openings as shown. Stucco ornamentation. See page 244 and Frontispiece

All races have malignant sprites that haunt rocks and watering places, and the Amerind was no exception. The Uinkarets of Arizona declared that a certain water-pocket where we camped was a favourite resort of the Woonupits, a little elf that is full of mischief, and Chuar one night insisted that he heard one whistling in the forest. He fired a shot out into the darkness to drive it away. He did this with great solemnity and deliberation, and there was no question as to his faith in the belief. The same little elf crops out in the Moki country in the form of the Kwokwuli, a malignant sprite lurking in out-of-the-way places. He is about knee-high and conceals himself behind a rock or bush, like the Breton Korrigans inhabiting the Dolmens, and when a Moki appears he calls out in a shrill falsetto voice, "*Kwo-kwul-i-ul-i.*" If the hearer gives no heed to the cry he

may pass by in safety, but should he willingly or unwillingly express any notice he must approach the elf, who immediately climbs on his back and holds fast round his neck—Sindbad's Old-Man-of-the-Sea over again. The elf has only rudimentary legs and no wings, and this is his method of journeying from place to place.

The Amerinds of the straits of Fuca have distinct traditions of the Eskimo as a race of dwarfs, who live in the "always dark country," on the ice, dive and catch whales with their hands, and produce the aurora by boiling out the blubber, the fires reflecting on the sky. The Iroquois had legends of great giants, as also had other tribes, which were due probably to the same cause as the dwarf Eskimo myths: ignorance of the outside world. These were stone giants, and they inhabited the west. Once upon a time they started to come and destroy the Senecas, and a war party of the latter proceeded to the encounter. Before the battle came off a mighty wind came out of the west and swept all the giants into a vast abyss from which they could not escape, and because of this friendly act the West Wind became one of the Seneca gods, and was revered ever after. And the Eskimo, while themselves furnishing the material for more southerly tribes to build myths on, have their own tales of a tribe called Ardnainiq, living in the extreme North-west. The men of this people are small as children, but entirely covered with hair. They are carried about in the hoods of their wives like babies, the wives being of normal size. They have also stories of a race of women. The Iroquois believed that there was a strange creature consisting simply of a head with large eyes and long hair, called "Great Head." When he saw any live thing he growled, "I see thee, I see thee, thou shalt

die." They also had their race of dwarfs with wonderful powers, who carved the cliffs and caves and could destroy monster animals.



COSTUME WORN IN THE KWAKIUTL FESTIVALS CALLED LAÕLAXA, NORTH-WEST COAST

The coyote, the bear, the sun, and all the animals are endowed with speech and great cunning, the coyote especially so among some of the Western tribes, and are conceived as possessing human attributes, like the "Brer Rabbit" and other animals whose prowess is related by Uncle Remus. But the Eskimo, according to A. L. Kroeber, have

comparatively few animal stories. Examples of these animal stories may be found in the reports of the U. S. Bureau of Ethnology and other publications. Lack of space prevents me from introducing any here.

The slightest misunderstood noise is sufficient to rouse the Amerind imagination, of which I had an illustration in Arizona. I arrived at an out-of-the-way mine one night with two Amerind guides. It was winter and a stone cabin was placed at my disposal, to which I sent the natives while my white companions and I visited the men in charge. The natives presently came in, saying there was something wrong at the cabin, and they would not stay in it or even near it. When we investigated we discovered that the whole trouble arose from the ticking of a small clock, which we forthwith stopped; but nevertheless they would not remain there alone.

Flood stories are numerous with all tribes, and whether they arose in local inundations or in some vast and general flood cannot now be determined. If in the latter, it would be melting ice of the glacial period. A fabulous being in Eskimo mythology is Kalopaling, who lives in the sea. His body is like that of a human being and he wears clothing made out of eider ducks' skins. His jacket has an enormous hood, into which he thrusts any boatman that may be drowned. He cannot speak, but merely cry, "Be! be! be! be!" An Eskimo flood tale relates how the ocean long ago rose till it covered the whole land, even to the tops of the mountains, till the ice drifted over them. When the flood subsided the ice stranded and has ever since formed a cap on their summits.

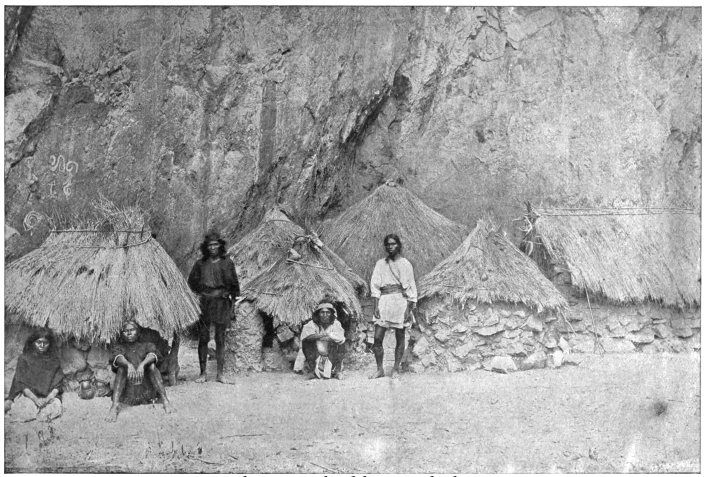
The keepers of the mythological tales were the shamans, and they are the real powers, generally, in

a tribe. Had Cortes understood this point he would have seized, not the war-chief, Montezuma, but one of the shamans, who would have been more valuable as a hostage. Many of the shamans are believed to be able to pass through fire unharmed, and to handle it with impunity; to be able to change themselves into coyotes, etc., and then return to their normal shape, all at their own pleasure.

A legend of Montezuma's coming has been attributed to the Pueblos of New Mexico, but this is an error, for they knew nothing about Montezuma till the whites came into the country. There are a great many legends concerning the occupation of this or that place, and one of these, the legend of the former occupation of the *Mesa Encantada*, or, "Enchanted Mesa," New Mexico, has recently caused a lively discussion between two distinguished ethnologists, as to whether some Puebloans did or did not once live on top of the mesa as related. Both succeeded in reaching the top. One found no evidence of any continued occupation of the mesa top; the other found what he accepted as sufficient evidence of the truth of the legend that Pueblos had once lived there and had been cut off from the world below and destroyed by a fearful storm.

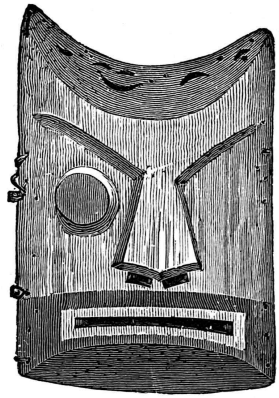
Large portions of the Maya chronicles relate the predictions of the astrologers, seers, or prophets, and after the habit of the class they foretold all manner of evil, but strangely enough they seem to have foretold the arrival of the Spaniards, for they said that white and bearded strangers would come and control the land and alter the prevailing religion. What was it that instilled them with this faith or fear? Was it coincidence, or was it what is now termed telepathy? Whatever it was, the terrible

fulfilment came upon their race like a cyclone; and when one more century has passed away the Amerind race will be more truly even than now, the North-Americans of Yesterday.[362]



Photographed by Lumholtz

GOD-HOUSES OF THE HUICHOLS AT TEAKÁTA, NEAR SANTA CATARINA, STATE OF JALISCO, MEXICO



ESKIMO MASK OF WOOD, PRINCE WILLIAM SOUND, ALASKA

CHAPTER XV

ORGANISATION AND GOVERNMENT

TRIBES often had a definite organisation and a regular government, and each held sway over a territory with fixed boundaries. When the limits were not placed at a river, lake, or mountain range they were marked by certain trees or stones, or other natural features along the trails. When at peace, those who entered another domain were considered visitors, and they were expected to be friendly with all friends of the occupants of the region. “Both the Kuchins and the Eskimos are very jealous,” says H. H. Bancroft, “regarding their boundaries.”[363]

When I was once coming out of the Shevwits country, my Uinkarets guide exclaimed as we passed a certain bowlder near the trail, “Now we are out of

the Shevwits land." Beyond that point the Shevwits would not venture except in a friendly way, so long as they were friendly with the owners of the land. I rejoiced in this fact at the time because the Shevwits had not been entirely agreeable, and I was glad to pass the point where I was certain they would not bother us. We were now in the country of the Santa Clara tribe.

The Iroquois had the habit of occupying both banks of a river or lake, hence they did not utilise these as boundaries, but ran straight lines, marked here and there by some well-known object. "On the boundary line between the Onondagas and Oneidas," says Morgan,[364] "the most prominent point was the Deep Spring (Deosongwa) near Manlius, in the county of Onondaga. This spring not only marked the limital line between them, but it was a well-known stopping-place on the great central trail or highway of the Iroquois.... From Deep Spring the line ran due south into Pennsylvania, crossing the Susquehanna near its confluence with the Chenango. North of this spring the line was deflected to the west, leaving in the Oneida territory the whole circuit of the lake. Crossing the She-u-ka or Oneida outlet, a few miles below the lake, the line inclined again to the east, until it reached the meridian of the Deep Spring. From thence it ran due north, crossing Black River, at the site of Watertown, and the St. Lawrence to the eastward of the Thousand Islands."

This line separated territories belonging to two tribes of the celebrated league, and was not a boundary between hostile or different tribes. The Iroquois were exact about their internal boundary lines, because it served to keep each member of the confederacy distinct and independent, and enabled

the idea of home rule to be properly carried out. They always knew just whose ground they were on, just as we know to-day which county or State we are in. It was another mark of the wisdom with which the confederacy was planned.

When the whites came to these shores and took possession right and left of the soil, they immediately stirred up the hostility of the owners, who naturally desired to be considered in the matter. Penn did consider them, and he had no trouble; and I have no doubt much of the fighting and enmity which followed our coming might have been avoided if Europeans had more fully recognised the native rights and had paid a fair equivalent for what they wanted. But there was nothing to compel this attention to the moral side, and justice must have force to bind it; besides, owing to the large influx of whites, the Amerinds were inevitably driven back. The English in a measure finally recognised the Iroquois rights and then afterwards turned this to good account by claiming sovereignty over the territory on the ground that the Iroquois were British subjects. The Navajos recognise the San Juan River as their northern limit and the Southern Utes correspondingly accepted it as their southern limit. “The claims of the Susquehannocks extended down the Chesapeake Bay on the east shore, as far as the Choptank River and on the west shore as far as the Patuxent. In 1654 they ceded to the government of Maryland their southern territory to these boundaries.”[365] Thus it is proved that Maryland recognised their ownership. These examples are enough to show that the territorial rights of each tribe were definitely understood, just as nations to-day have established limits. When the settlements of our people finally crowded tribes back upon each

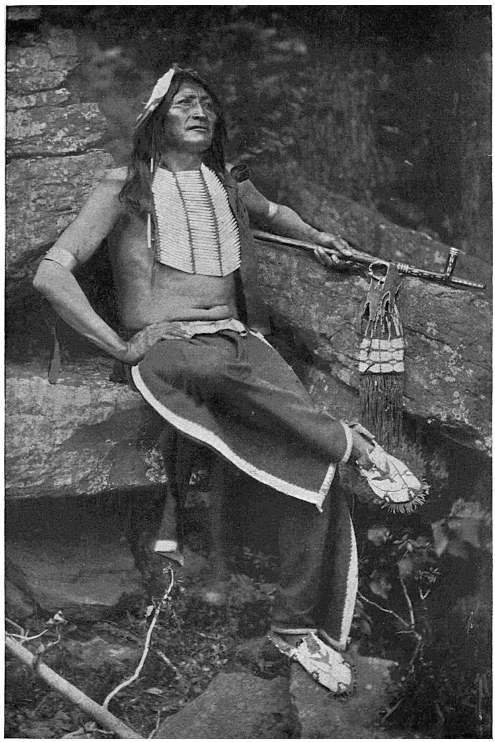
other's domain, a great deal of confusion and dispute arose as to ownership, and when the government began to pay for lands it was often necessary to pay for the same tract several times, owing to the conflicting claims.

Scattered over the territory claimed or held by a tribe were the houses and villages of the tribe or the sub-tribes. Powell states that "every tribe lived in a village, and every village constituted a distinct tribe." But the village was often spread over a wide region. Speaking of this, Adair says: "A stranger might be in the middle of one of their populous, extensive towns without seeing half a dozen houses in the direct course of his path."[366] But this was only in the interior of the country of a tribe. Along the frontier the towns would be more compactly arranged, in order that the people might easily be called to defend them. The villages were usually permanent, though they were frequently, some annually, abandoned temporarily at certain seasons for the pursuit of game or for some other good reason, all the people coming together again as the cold weather approached. The Navajos often have a winter home in the lower, sheltered lands of their territory, while in summer they proceed to the higher levels where the winter snows are deep and the summer grass is high. Each Amerind village always had at least one assembly place for which they had their special names, but the general term that is now often used by ethnologists is that of *kiva*, [367] borrowed from the Mokis, because the Moki kiva is a representative of the general assembly hall and council-chamber, or lodge. The kiva, besides being used for social purposes, as a lounging-place and a working-place for the men, is also used for religious functions. Those structures, therefore,

which crowned the mounds of the United States and Mexico, and are usually designated as “temples,” were possibly more of the nature of kivas, a temple in our usage being a structure devoted solely to worship, whereas many Amerind buildings of this class were used for various purposes. Often there were several, depending on the size of the tribe. The tribe was organised on the basis of the gens or the clan, and each gens or clan might have its own kiva. They might also belong to some of the secret orders, so that we may enumerate three kinds: the tribal, or chief kiva, the kiva belonging to the gens or clan, and the kiva belonging to the phratry, or secret society. The gens and the clan were groups of blood relations, or, as put by Powell, “an organised body of consanguineal kindred.”[368] The members of a gens often lived in one house or in a group of houses; for example, among the Iroquois in the long-house,[369] with its row of camp-fires, while in some other tribes each family might have its own house or tent, but they would then generally pitch or build it contiguous to the other habitations of their gens. It was this principle, in vogue in almost all the tribes of America, which directed the character of most of the Amerind structures. Everybody in a tribe belonged to a gens or clan, otherwise he could not be in the tribe. The complete organisation of the tribe then was: a group of families forming a gens or clan, two gentes being represented in each family; the “father must belong to one gens and the mother and her children to another,” descent being commonly in the female line, and marriage within a gens being forbidden; a group of gentes formed the phratry, and a group of phratries formed the tribe, while a group of tribes formed the confederacy, probably the highest form of government the Amerinds reached. The phratry as an

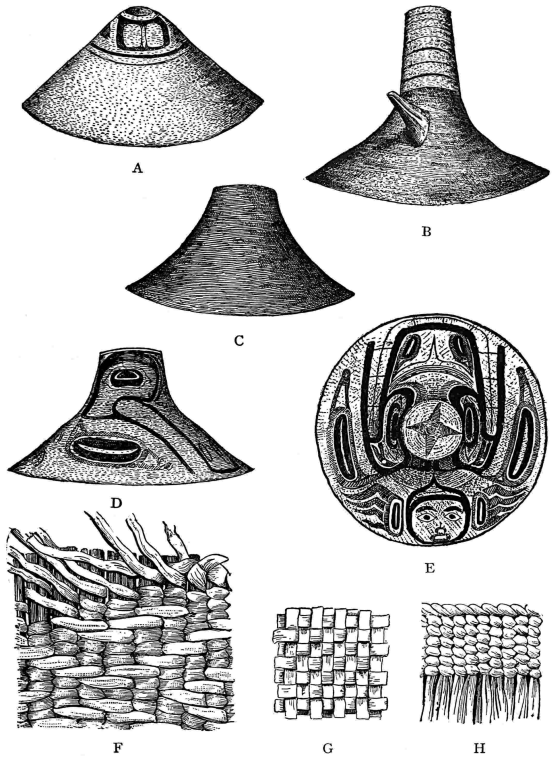
organisation was often absent, and the tribe was then composed of the gentes without any further grouping. Powell seems to use “phratry” in a different sense from Morgan and some other writers. Morgan described a phratry as a group of gentes, whereas Powell defines it as simply a brotherhood or society. Each gens governed itself so far as its internal affairs were concerned; that is, it had home rule, just as we have it to-day in our towns, counties, etc. It sent delegates to the council of the tribe to represent it, and it elected its own officers. There was sometimes no tribal or head chief. I never could learn of any among the Navajos, and the Iroquois had none. When, as was frequent, there was a sachem, or tribal chief, he was chosen or elected by the chiefs of the various clans or gentes forming the council, but in some tribes he inherited the office, or at least the right to hold it. I understood this to be the case among the Kaivavits Utes of southern Utah. A gens had the right to take into its ranks any alien it chose to. Such a person was then a member of that gens and partook of all the benefits or disadvantages, as the case might be. He was a son or brother or husband, or the corresponding relationships if a woman, and on all occasions was treated as if he had been born into the gens or clan instead of adopted into it. He was therefore eligible for all offices in the tribe, and white men in this way sometimes became chiefs. Beckwourth,[370] who, however, was really supposed by a Crow woman to be her long-lost son, became head chief of the Crows, and held the office with distinction for a number of years. He began by being fifth councillor. “In the Crow nation there are six councillors, and by them the nation is ruled. There are also two head chiefs, who sit with the council whenever it is in session. The office of first

councillor is the highest in the nation next to the head chiefs, whose authority is equal. If in any of these divisions, when a matter is brought to the vote, the suffrages are equal, one of the old pipemen is summoned before the council and the subject under discussion is stated to him, with the substance of the arguments advanced on both sides; after hearing this he gives his casting vote, and the question is finally settled."[371]



Photographed by J. K. Hillers, U. S. Geological Survey

PLENTY-HORSES, A CHEYENNE



NORTH-WEST COAST BASKETRY HATS
Made of grass and spruce roots

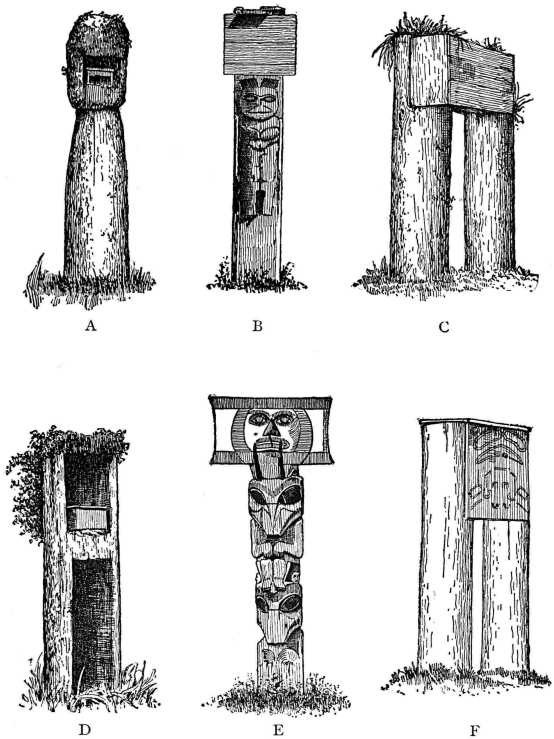
A. Parasol-shaped hat with totemic design on top and painted in solid colour on remainder of outside surface. Tlinkit
B. Has wooden appendages representing the beak of the raven. Tlinkit
C. Cedar bark hat. G shows method of plaiting it
E. Top view of D, showing totemic design of hooyeh, the raven. Haida
H. Is method of weaving the top, F of the bottom part of D

See also figures on pp. 146, 160

George Bancroft says, “There have been chiefs who could not tell when, where, or how they obtained power.... Opinion could crowd a civil chief into retirement, and could dictate his successor.” Opinion

was a most potent factor in all tribes, and this would be largely directed by those having popularity and power. Officers, in fact all persons, become extremely well known in the small community of an Amerind tribe. Every peculiarity of temperament was understood, and the individual was respected or despised according to his predominating characteristics. Those who were bold and fierce and full of strategy were made war-chiefs, while those who possessed judgment and decision were made civil chiefs or governors. In many tribes the civil and the military branches of government are separate and distinct. Certain chieftains were the peace chiefs. "They could neither go to war themselves, nor send nor receive the war belt—the ominous string of dark wampum, which indicated that the tempest of strife was to be let loose. Their proper badge was the wampum belt, with a diamond-shaped figure in the centre, worked in white beads, which was the symbol of the peaceful council fire, and was called by that name. War was declared by the people at the instigation of the 'war-captains,' valorous braves, of any birth or family, who had distinguished themselves by personal prowess, and especially by good success in forays against the enemy. Nor did the authority of the chiefs extend to any infringement on the traditional rights of the gens, as, for instance, that of blood revenge. The ignorance of this limitation of the central power led to various misunderstandings at the time, on the part of the colonial authorities, and since then, by later historians. Thus in 1728 the Delaware Indians on Brandywine were summoned by the Governor to answer about a murder. Their chief, Civility, answered that it was committed by the Minisinks, 'over whom they had no authority.' This did not

mean but that in some matters authority could be exerted, but not in a question relating to a feud of blood."[372] War-chiefs as well as civil chiefs were elected by the council, and could be deposed also by the council whenever it was desirable.



NORTH-WEST COAST MORTUARY AND COMMEMORATIVE COLUMNS

A. Kaigani. Contains a box holding ashes of the dead
B. Kaigani. Compartment boarded up contains the remains in a box
C. Kaigani. Supported box contains the dead
D. Different form of C
E. Haida. Commemorative column put in front of the house of deceased, the body being placed at a distance
F. Haida. Commemorative column same as last but with two posts

Brinton says, “The gentile system is by no means universal, ... where it exists, it is often traced in the male line; both property and dignities may be inherited directly from the father.... In fact, no one element of the system was uniformly respected, and it is an error of theorists to make it appear so. It varied widely in the same stock and in all its expressions.”[373] This intricate subject cannot be fully understood till the organisation of many tribes has been studied in detail. “In some tribes, as the Dakota, the gentes had fallen out; in others as among the Ojibways, the Omahas and the Mayas of Yucatan descent had been changed from the female to the male line.”[374] But Powell and Morgan both hold that the majority of the Amerind tribes were organised on the basis of descent in the female line. “The gens came into being,” says Morgan, “upon three principal conceptions, namely: the bond of kin, a pure lineage through descent in the female line, and non-intermarriage in the gens.”[375]

Powell in his article on the “North American Indians” in Johnson’s *Cyclopedia* seems to use the term “clan” to describe a body of kindred with descent in the female line, and “gens” where the descent is in the male line. “In most of the tribes the fundamental unit of organisation was the clan,” he says, and then again, “a few of the tribes were organised on the gentile plan and in the gens kinship is reckoned in the male line.” Such a distinction would be convenient, but Morgan did not recognise it at the time of his writing, as is evident from the quotation above from his *Ancient Society*, and general usage seems not to have defined gens to mean descent in either line specifically. Nevertheless, there is probably no reason why the distinction should not be made with regard to the Amerinds, at least, if it

should be agreed upon. Powell also says: “As a clan is a group of people who reckon kinship through females to some ancestral female, real or conventional, so a gens is a group of people who reckon kinship through males to some ancestral male, real or conventional. It seems that the primordial constitution of the tribe is by clanship and that the clanship tribe is developed into the gentile tribe. Most of the tribes of North America have clanship organisation, yet there is a goodly number with gentile organisation, while perhaps it may be said that a majority of the clanship tribes have some elements of the gentile organisation; so that it may be justly affirmed that a great many of the tribes on this continent are in the stage of transition, and there is scarcely a gentile tribe which has not some feature of clanship organisation as a survival.”[376] The privileges and obligations of the gens (or clan) were, according to Morgan as follows:

“I. The right of electing its sachem or chief.

“II. The right of deposing its sachem or chief.

“III. The obligation not to marry in the gens.

“IV. Mutual rights of inheritance of the property of deceased members.

“V. Reciprocal obligations of help, defence, and redress of injuries.

“VI. The right of bestowing names upon its members.

“VII. The right of adopting strangers into the gens.

“VIII. Common religious rites.

“IX. A common burial-place.

“X. A council of the gens.”[377]

Among the Wyandots there is a council in each gens composed of four women. “These four women councillors select a chief of the gens from its male members—that is, from their brothers and sons. This gentile chief is the head of the gentile council. The council of the tribe is composed of the aggregated gentile councils. The tribal council then is composed of one-fifth men and four-fifths women.”[378] This is not the case with other tribes, however. Among the Tlinkits it is the richest who “obtain the highest places,” the selection of the chiefs depending entirely on the amount of property they have; that is, on a property basis. These Amerinds have a better appreciation of property than any others I have ever seen. They seldom haggle, but in selling they state a price and adhere to it. A smaller amount offered is usually treated with scorn.

The sign of clan or gens membership was the totem, all members of the same gens having the same totem, and his or her name usually indicating this totem. For example, if we know an Amerind woman’s name to be Spotted Fawn, we place her at once in the deer clan. The deer is the animal that she looks up to as being most intimately connected with her past and her future, and from which her ancestors were descended. This is the clan or gens totem. As mentioned in a previous chapter, there are also two other kinds of totems, those pertaining to sex and those pertaining to the individual alone. Totems are always chosen from a class of organic objects, while a fetich may be anything at all. Thus the totems are deer, frogs, bears, snakes, corn, etc., while a fetich may be a pebble, a piece of glass wrapped in a bit of buckskin together with a feather, or some similar object. The fetich was a talisman, the totem a beneficent attending spirit and a sign of

family and origin.

The Iroquois confederacy was planned by Hiawatha through Däganowédä as an interpreter of his ideas and wishes. Some, Horatio Hale for one, think that Hiawatha was a real person, and others that it was Däganowédä who did the work under the guise of representing Hiawatha.[379] However this may be, the organisation of the several tribes into the confederacy was a work of genius, and this was one of the highest governments that was discovered on this continent. We cannot say, however, that it was *the* highest that ever existed, next to that of the Aztecs or the other Central Amerinds, for we really do not know what there may have been before, not only in Mexico and Central America, but in the Mississippi valley or even in the State of New York. As noted in a previous chapter, if the Iroquois had disappeared before our arrival, we could have gained no conception of their remarkable government from any remains that we would have found. The Mississippi valley and the South-west, as well as Mexico and Central America, exhibit traces of tribes who may easily have arrived at a governmental development equal to, if, indeed, not superior to, that of the Aztecs or the Iroquois. These tribes were undoubtedly Amerind, but there is nothing to prove that earlier Amerind tribes were inferior in their political development to later ones.

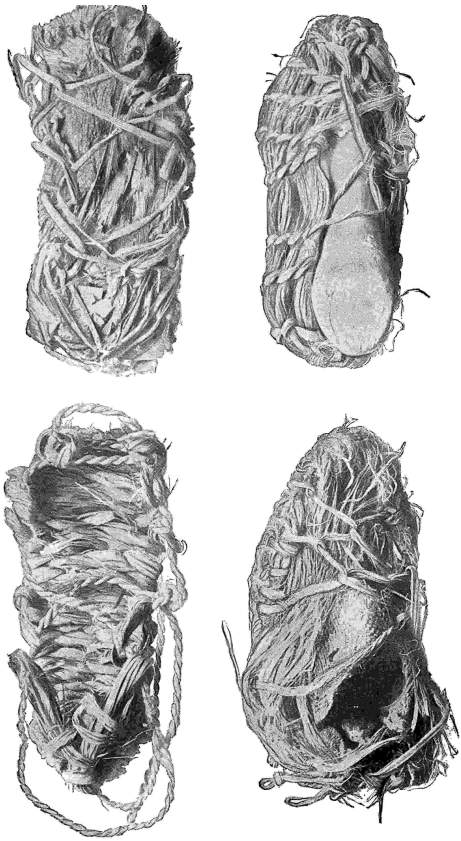
The misconceptions of the Spaniards due to ignorance of Amerind organisation gave false colouring to the Aztec confederacy; and the flowing diction of Prescott, gemmed with terms and titles applicable to Old-World society, but having no place in that of the New, added to the confusion. Pages relating to “nobles,” “princes,” “royal allies,”

"sovereigns," "lords," etc., do not help in fathoming the intricacies of Amerind government. Had the Spaniards met with the Iroquois we should have had something similar in their case; and the fact that they had no head chief would not have been discovered by the conquistadores, so eager for other prey. One of the war-chiefs would again have been taken for a royal personage, and the sachems and councillors would have been nobles and princes, while the outlying tribes of the Five Nations would have filled the bill for royal allies. It is likely that the Aztec government was in advance of that of the Iroquois, but that there was any royalty about it must be doubted till better evidence is available. On the other hand, Morgan's attempt to prove that the Aztec organisation was not beyond that of the Pueblos or the Iroquois is to be taken with caution. Brinton says: "The government of these states did not differ in principle from that of the northern tribes, though its development had reached a later stage. Descent was generally reckoned in the male line, and the male children of the deceased were regarded as the natural heirs both to his property and his dignities. Where the latter, however, belonged rather to the gens than the individual, a form of election was held, the children of the deceased being given the preference. In this sense, which was the usual limitation in America, many positions were hereditary, including that of the chieftaincy of the tribe or confederation. The Montezuma who was the ruler who received Cortez, was the grandson of Axayacatl, who in turn was the son of the first Montezuma, each of whom exercised the chief power."[380] The daughter of the first Montezuma seems to have occupied the position of head chief for a time, or, as Prescott would put it, she was queen. It

is possible that while Montezuma was a war chief he may have combined certain civil powers with his war office, and that the confederacy was actually on the road to an absolute monarchy[381] or something of the kind, which, if human progress takes always the same general directions, was the next stage to be expected on this soil. Bandelier, Morgan, and others see in the various Mexican tribes and confederacies little that is different from the organisation of the Amerinds to the northward, and probably when all is well understood we may find that they are not far from correct; that, while there are differences, they are yet not sufficient to entitle the Mexicans to the separation from other Amerinds that has been claimed for them by romantic writers. Speaking of Tlaxcala, the famous "province" where Cortes found a resting-place on his inward journey, Bandelier says: "Owing to a misconception of aboriginal institutions, it has been palmed off as a kind of Mexican Switzerland, as a free republic in the midst of despotically ruled communities. Such was not the case. There was not the slightest fundamental difference between the social organisation and mode of government of the Tlaxcaltecos and that of the Mexican tribe; but the exceptional geographical position of the latter and the natural barrenness of their land led them to seek means of subsistence from abroad. The confederacy of tribes grew out of tribal organisation, and the greater ability of the inhabitants of the Central Valley gave to their confederacy a power of aggression superior to that of any other aboriginal cluster in the same country.... The Tlaxcaltecos were organised in four localised *phratries*, like the Mexicans. Two elective chiefs—that is, elective in regard to the individual, but with heredity of office in a certain *gens*—formed the

nominal head of the tribe. The true directive power, however, lay in the council of the tribe. The tribe of Mexico had a similar organisation. What created an apparent dissimilarity was the confederacy of the valley tribes, with its chief-captain always taken from the Mexicans. As, in the single tribe, the war-chief office was hereditary in the *gens*, so, in the confederacy, the same office becomes hereditary in the *tribe*."[382] How different is the wording of Prescott when speaking of the Aztec organisation! "The government was an elective monarchy. Four of the principal nobles, who had been chosen by their own body in the preceding reign, filled the office of electors, to whom were added, with merely honourary rank, however, the two royal allies of Tezcuco and Tlacopan. The sovereign was selected from the brothers of the deceased prince, or, in default of them, from his nephews. Thus the election was always restricted to the same family. The candidate preferred must have distinguished himself in war, though, as in the case of the last Montezuma."[383] In other words, the election was restricted to a certain gens. Morgan says: "Nearly all American Indian tribes had two grades of chiefs, who may be distinguished as sachems and common chiefs. Of these two primary grades all other grades were varieties. They were elected in each gens from among its members. A son could not be chosen to succeed his father when descent was in the female line, because he belonged to a different gens, and no gens would have a chief or sachem from any gens but its own." (Morgan here evidently forgot the right of adoption. It would be perfectly regular, should a gens wish to do so, to adopt a son into the gens in order that he might succeed his father.) "The office of sachem was hereditary in the gens, in the sense

that it was filled as often as a vacancy occurred; while the office of chief was non-hereditary, because it was bestowed in reward of personal merit, and died with the individual. Moreover, the duties of a sachem were confined to the affairs of peace. He could not go out to war as a sachem. On the other hand, the chiefs who were raised to office for personal bravery, for wisdom of affairs, or for eloquence in council, were usually the superior class in ability, though not in authority over the gens. The relation of the sachem was primarily to the gens, of which he was the official head, while that of the chief was primarily to the tribe, of the council of which he, as well as the sachem, were members."[384]



ANCIENT PUEBLOAN MOCCASINS OF FIBRE, ARIZONA

Except lower left hand one worn by the Ainos of Yezo, Japan. Introduced for comparison. The Ainos were probably the earliest inhabitants of Japan. In language and character they are different from Japanese

As the Iroquois league was such an important affair, and as it was so thoroughly studied by Morgan, I will quote him further by giving his statement of the main points in the organisation.

"I. The Confederacy was a union of Five Tribes (afterwards Six), composed of common gentes under

one government on the basis of equality, each Tribe remaining independent in all matters pertaining to local self-government.

"II. It created a General Council of Sachems, who were limited in number, equal in rank and authority, and invested with supreme powers over all matters pertaining to the Confederacy.

"III. Fifty Sachemships were created and named in perpetuity in certain gentes of the several Tribes; with power in these gentes to fill vacancies as often as they occurred, by election from among their respective members, and with the further power to depose from office for cause; but the right to invest these Sachems with office was reserved to the General Council.

"IV. The Sachems of the Confederacy were also Sachems in their respective Tribes, and with the Chiefs of these Tribes formed the Council of each, which was supreme over all matters pertaining to the Tribe exclusively.

"V. Unanimity in the Council of the Confederacy was made essential to every public act.

"VI. In the General Council the Sachems voted by Tribes, which gave to each Tribe a negative upon the others.

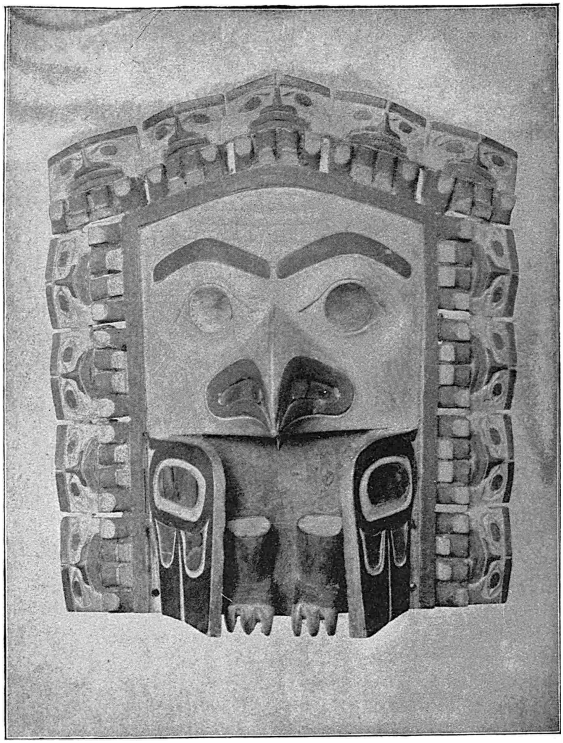
"VII. The Council of each Tribe had power to convene the General Council; but the latter had no power to convene itself.

"VIII. The General Council was open to the orators of the people for the discussion of public questions; but the Council alone decided.

"IX. The Confederacy had no Chief Executive

Magistrate or official head.

"X. Experiencing the necessity for a General Military Commander, they created the office in a dual form, that one might neutralise the other. The two principal War-chiefs created were made equal in powers."[385]



CHIMMESYAN HEAD-DRESS REPRESENTING THE WHITE OWL

It is made of maple; eyes, tongue, eye-ornament on wings, and ornament at base of the wing-feathers inlaid in Haliotis shell. Wings and eyebrows of owl, and eyebrows, eyes, and noses of the surrounding men painted black; margin of beak and body of the owl except talons and knees, mouths, arms, and legs of the surrounding men and the broad band surrounding the owl's body, painted red. 6¼ in. wide, 7½ in. high. In the American Museum

Such was the remarkable construction of the government of these Amerind people of New York. In its conception, in its details, and in its execution it was one of the most extraordinary primitive governments ever recorded. From a comparatively weak people it placed the Iroquois, though they were far inferior in numbers to surrounding tribes, in a commanding position, and enabled them to extend their sway over a vast territory. They made no attempt to hold the region that was subject to their devastation, but probably, had not the European appeared on the scene, they would have gradually expanded until their villages covered many times the area which they specifically claimed when our people first came. An increase of population which would have overtaxed the game-supply would have pushed the development of their agriculture and forced the confederacy to move along higher and broader lines. One great drawback to Amerindian progress, internecine wars, was entirely obliterated by the masterly organisation of the Iroquois league, while at the same time they gained by their union a strength for offence and defence that, together with their fertile and well-watered domain, rendered their organisation impregnable. This and the Mexican confederacy prove that the Amerind was capable of great things in governmental organisation. It only remained for him to discover the secrets of smelting and forging, and he was apparently on the brink of these discoveries, to step into a foremost place of development and progress. In some respects it is a pity the Europeans did not remain in ignorance of this continent for another five hundred years.



WOODEN "SEAL" DISH, HAIDA

CHAPTER XVI

ORIGIN, MIGRATIONS, AND HISTORY[386]

THE manner in which America was originally peopled has been the cause of considerable speculation. For a long time it was generally believed, and there are some who still hold that belief, that this peopling occurred within comparatively recent times by way of Bering Strait, and that before that the continent was not inhabited. But peoples do not willingly migrate into frozen regions, and the Bering Strait and Alaska down to Dixon Entrance were not many centuries ago buried under a mantle of ice. I doubt if there were even Eskimo in Alaska five hundred years back. It is my belief that all the tribes of the North-west migrated there from the South and South-east, and not within recent geologic time from the Asiatic direction.



TLINKIT SUMMER CAMP

That the continent was entirely peopled by way of Bering Strait within the last thousand years, by migrations through a zone of ice, is improbable. To assume that a population came over and passed down to Mexico and Yucatan and even South America, carrying with them their arts, but not exercising them on this interminable journey, is ridiculous. No pottery has yet been found between the Yukon and the Humboldt, or even farther south, probably because the Eskimo learned what little they knew about it while in the St. Lawrence valley or the Atlantic region, and the tribes of the North-west coast never came into sufficiently close contact with potters to learn the art.[387] Furthermore, no authentic trace of any Old-World language thus far has been found on this continent, and the only Asiatic language now known to be allied to an American is that of a branch of the Eskimo family which crossed from this side within the last three hundred years. The Amerind languages change slowly. An immense period must have elapsed since their separation from the rest of the world. It is said that two Japanese vessels a year are wrecked on our California coast, and some have peopled the continent from this source; a more absurd theory than the other. The number of Japanese vessels that were afloat a thousand years ago was as nothing compared with those afloat to-day, and if only two per annum are wrecked on these shores to-day, the wrecks a thousand years ago did not add materially to the population.[388] It is possible, however, that a few persons may have reached either seaboard that way, and like Cabeza de Vaca, they may have wandered for years among the various tribes as teachers and medicine-men, giving rise to legends of “white and bearded strangers.” But in the early days

vessels were frail and did not venture far from the coast, so that the chances of being driven to American shores without foundering were very slight. The Northmen made the voyage, however, and others may have done it. Yet the supposed visits of the Irish and Danes are hardly worthy of serious consideration, although it would be rash to deny the possibility of their having come. As for the Lost-Tribes-of-Israel theory, on which Kingsborough was wrecked, no archæologist of to-day would be willing to give it a second thought. A multitude of stock languages, differing from each other, yet forming a world-group by themselves, are found here. The people who speak them, from Panama to the Arctic, are in their habits, customs, and physical characteristics wonderfully homogeneous,[389] yet they appear to exhibit several types that have been moulded into a family resemblance by some strange circumstance. Toward Panama, some of them attained a considerable degree of progress, but these were not of one special stock but of diverse stocks. Farther north there was another group attaining to a less but a similar kind of progress, and they also were, and are, of diverse stocks. In the Mississippi valley are evidences of another similar culture group, probably also of diverse stocks because some of them were allied to, or were part of, the stocks found there when the whites came. The same general conditions prevailed farther east, and a centre of development was rapidly forming in New York when it was destroyed by our coming. One of the most widespread stocks, the Shoshonean or Uto-Aztecan, is composite, containing within it tribes of the highest culture and tribes of the least culture, tribes that were peaceful and tribes that were warlike. It is evident then that *culture was no evidence of*

relationship or the reverse among the Amerind people. By some powerful influence and long association they had, whatever their origin, been moulded into one race. “Where had they come from?” “How did they come to be so much alike?” “Why did their highest development take place down by the Isthmus instead of by the Great Lakes or in the fertile valley of the Mississippi?” These are pertinent questions. Attempts have been made to answer them by importing different people from different parts of the world and their recent culture with them. But the more the Amerinds are studied, the more homogeneous do we find them and the more isolated from Old-World influences. Culture, as mentioned, was not confined to one stock; it permeated through unrelated stocks. The languages too are totally different from all others. Thus the more the matter is investigated, the more closely are we confined to the Western Hemisphere for the origin of the Amerind people, *as we know them*. Toward Panama, that is below the City of Mexico, a kind of civilisation was attained, and there we find was the densest population on the continent. Culture never develops in a game country with a sparse population, and there is, therefore, an intimate connection between a crowded population and “culture” or “civilisation.” It may be broadly asserted, I think, that *civilisation is crowding*; it is man’s effort at self-preservation. Where the game-supply is exhausted or insufficient and subsistence must be wholly or largely wrested from the soil, there will be found the culture centres, the hothouses of art and science, from which a filtration occurs into all the contiguous regions and peoples. On this continent the chief centre of culture was the narrowest part; the population was packed there as

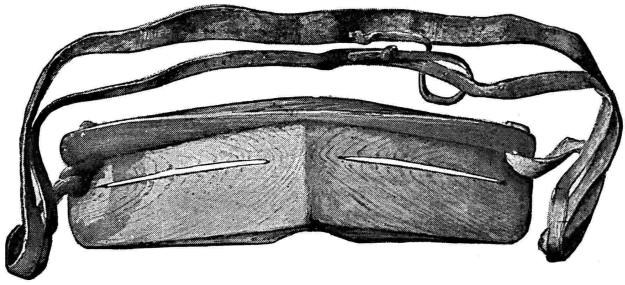
in the narrow end of a funnel, leaving the whole broad top thinly peopled. The question immediately arises: “Why was this so?” It is evident at a glance that there was some preponderating, irresistible influence which compelled the inhabitants to draw into these narrow, restricted regions, there to act and react one tribe on another, and this influence was constantly at work moulding them all. If the continent had been peopled within any comparatively recent time, it is not reasonable to suppose that the tribes would willingly have huddled together far down in the most limited area. It is also from this area apparently that all the arts have spread. The crowding and the culture development were coincident. What was the cause of it? If we can arrive at a satisfactory understanding of the cause, it seems to me that we have the solution of the whole matter. The explanation appears to be that the continent was peopled before the beginning of the glacial epoch, and the crowding into the narrow regions, and consequently the development of culture there, were due to the encroachment from the north of the great cold. Wright says: “Just before the beginning of the ice age, a temperate climate corresponding to latitude 35 on the Atlantic coast extended far up toward the north pole, permitting Greenland and Spitzbergen to be covered with trees and plants similar in most respects to those found at the present time in Virginia and North Carolina. Here indeed in close proximity to the north pole were then residing, in harmony and contentment, the ancestors of nearly all the plants and animals which are now found in the north temperate zone.” It is not unreasonable to suppose, then, that man was also here, though as yet the scientific evidence is perhaps not sufficient to prove it. If he circled the globe in

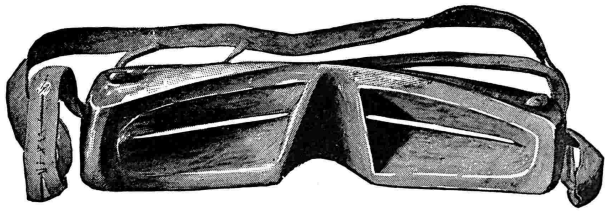
the Northern regions at that time, and was also occupying Central portions, the cold drove all south and together with changes of land levels cut off the American division from the other world.[390] Migration legends are useless in determining the origin of the Amerinds, for they can only relate to the *comparatively recent changes* of location before which, for a long period, the people drifted up and down and across the continent under the influences I have suggested. However man first originated, or where, he was doubtless distributed, like the flora and fauna, at some exceedingly remote period, over the whole world, by causes not now understood, but one of which was probably a greater continuity of land surfaces than exists to-day.[391] Some of the earlier-world people were possibly more advanced than we have been willing to concede, and there was, from a very early day, a differentiation of tribes. Some were making respectable weapons and tools of stone while others were using clubs. Too much stress has been placed upon the European classification of stone implements. It may exhibit conditions that existed in Europe, but it has nothing to do with a standard of measurement for the world. When Moses was leading his enlightened people, the European was a painted savage. The period of time in which man used stone implements is enormous; that in which he has used metal tools, comparatively insignificant. It stands to reason, therefore, that during this long use of stone, tribes attained to varying degrees of culture, and varying degrees of perfection in stone tools. There never could have been a single period of time when all tribes the world round made a certain quality of implements, then another period when they all made other quality of implements. Classification of tribes and

races in a time-scale, or even in a culture scale, according to the kind of stone implements they used, is impossible. The Pai Ute and the Iroquois made equally good tools in the seventeenth century, while in other lands still inferior tribes were making implements about as good, and others were struggling on with poorer ones. At the time of the Aztec confederacy, their stone tools were not greatly superior to those of the Pai Ute. Therefore, it would seem that any resemblance between so-called American "paleolithic" implements and modern stone implements cannot be used as an argument to disprove the age of the former, nor that a polished stone implement found in a supposed ancient gravel is necessarily an indication of intrusion or that the gravel is not ancient. The implements thus far found in the California auriferous gravels have been similar to those found on the surface to-day, and this has been held by some to be a suspicious circumstance. It is not. Some tribes in California in those remote times were probably making stone implements quite as good as anything made to-day. Stone-working is not capable of high development. The range is limited. Some tribes compassed it early. Because also we do not find stone implements abundant in the North-American glacial drift proves nothing concerning man's condition, presence or absence on the continent at that time. The population *was almost entirely below the glacial limit*, only a few inferior tribes skirting its southern fringe. We should, then, expect to find few northerly pre-glacial evidences, [392] as the main culture development took place south of the ice line, and tribes above this in pre-glacial times would be the most primitive.



ESKIMO SUMMER CAMP, PORT CLARENCE

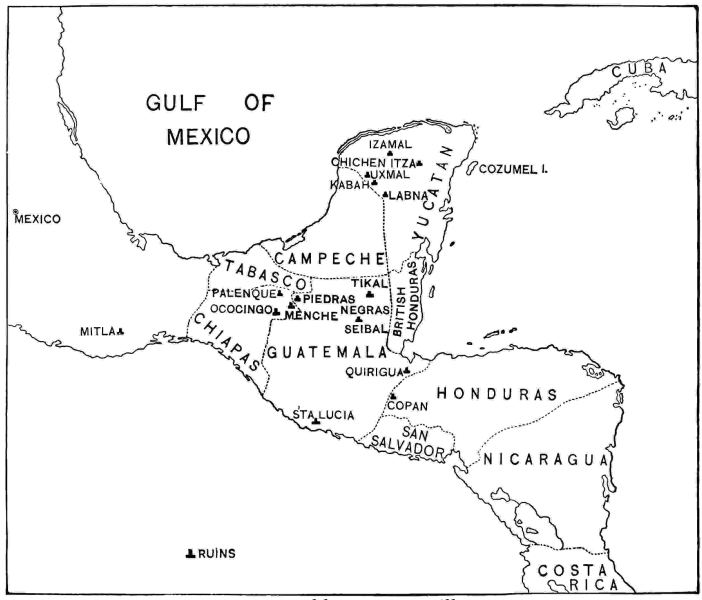




WOODEN SNOW GOGGLES OF THE CENTRAL ESKIMO

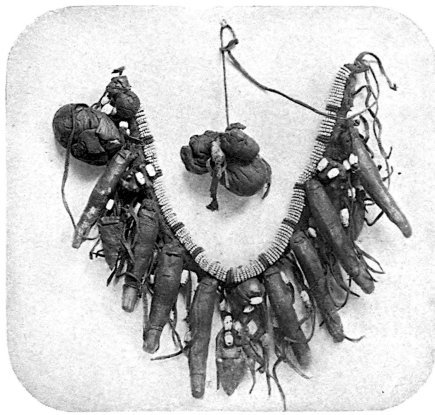
The material evidences concerning the antiquity of man in America are many, but few are entirely satisfactory. The Calaveras skull and other remains in the auriferous California gravels seem to place him here as early as the Tertiary, and this, says Holmes, [393] would make man older on this continent than anywhere else in the world according to present evidence. A rudely chipped arrow-head has also been found in another region under some elephant bones.

A primitive hearth was discovered in well digging in an old beach of Lake Ontario which dates back to the glacial time. Many specimens of stone implements have been found throughout the land in deposits which appear to be of great age. There is always the question of modern introduction through burials, overturned trees, etc., but the number and varying positions seem to indicate that some of these tools have been found in their original places. I excavated a mound in southern Utah from the depths of which I brought out an exceedingly primitive grinding-stone, yet not a single stone implement of any other kind was found. The grinding-stone was twenty feet below the top of the mound and ten below the present general level of the surface. The mound was formed of many layers of earth interspersed with thin layers of charcoal and ashes. All around the site there were house ruins on the surface, but in the mound not a trace of a building stone was seen. I was told that in digging a well not far from this locality a small earthen jug of antique type was found about thirty feet below the present level. I did not see it nor even the man who found it, but the great abundance of such finds must indicate antiquity, for they could not all be fraudulent, nor all recent intrusions.



Prepared by M. H. Saville

PRINCIPAL KNOWN RUINS OF CENTRAL AMERICA



NECKLACE OF DRIED HUMAN FINGERS OBTAINED ON BATTLEFIELD OF WOUNDED-KNEE BY CAPTAIN BOURKE

The cause of the glacial period has been much discussed. It seems to have been largely due to changes in land levels,[394] and to other causes not

now understood. The people inhabiting the world before it may have been originally much alike in kind and colour with local variations, and the isolation produced by glacial conditions modified this colour and increased the variations, those finally left in hot lands becoming darker, medium temperatures producing brown, still cooler the reds and yellows, and the forests of Europe evolving a shade or shadow people, shrinking from the strong sun; the so-called white race. The glacial epoch is often spoken of as if the whole world were frozen solid, whereas in North America, from the Ohio and the Columbia to the Isthmus, the climate was doubtless about relatively the same as it is now from Davis Strait to the Potomac and from Yakutat Bay to northern California. The ice extended down about to the Ohio River in the East and on lowlands not below the Columbia in the West. The Western mountain tops must have been completely glaciated and all elevated regions were cold, the conditions prevailing resembling those now found in Southern Alaska. The Sierra Nevadas, receiving the warm, moist airs from the Pacific, must have been far more heavily glaciated than the Rockies, which received less moisture in consequence. The ice period is estimated to have endured from ten to twenty thousand years, with an interval of recession in it and subsequent advance. The people were driven southward, and those most favourably situated developed the most. The people most favourably situated were all *who were already in*, or could fight their way to, the temperate lowlands of southern Mexico and Central America, which were rendered somewhat more extensive by the recession of the sea, caused by the withdrawal of the immense quantities of water that were heaped up in ice thousands of feet in thickness.

[395] This has been estimated to have lowered the waters of the ocean by from 600 to 1000 feet.[396] The lands thus laid bare were climatically inviting and probably were soon covered with vegetation. In South America the people were crowded northward, or held there by the cold coming from the south. It would be in the northern portions, particularly the lowlands, that we ought to find evidence of the highest development, especially on the side receiving warm currents, and there is where we do find it. We apparently have then a northern and a southern limit to the ancient inhabitants of this hemisphere, within which climatic conditions during the period of great cold, and for some time thereafter, were most favourable to human development. This limit in the Northern continent is latitude 23 and in the Southern also 23. Within these lines the great precolumbian development took place, and the heart of this development on the Northern continent seems to have rested between the Isthmus of Tehuantepec and the present upper frontier of Honduras, chiefly on the lowlands, and probably also on lands now beneath the ocean.



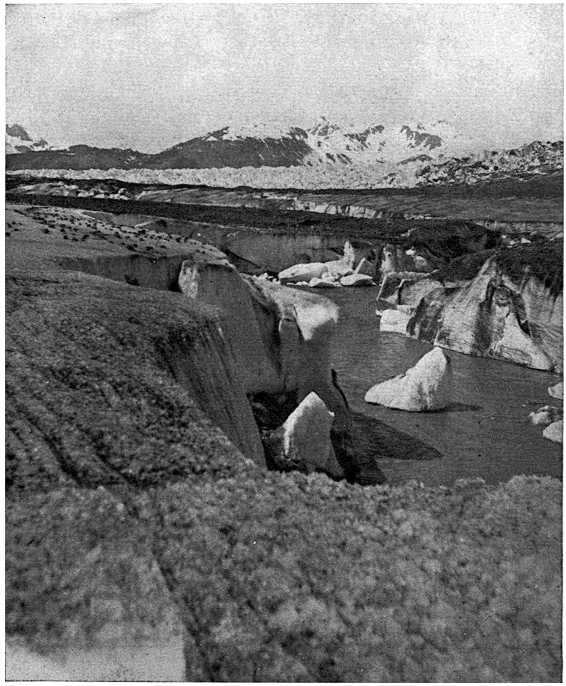
Prepared by M. H. Saville

PRINCIPAL KNOWN RUINS OF MEXICO

In North America, south of latitude 23, then, most of the tribes of the continent were crowded by the great cold, and here they developed their chief characteristics, so that by the time the ice began its last recession they had become a homogeneous people, with the greatest advancement and the greatest similarities in the region where the population had been densest, with a diminishing scale outward, those tribes farthest from the culture centre varying most from the highest culture attained. The tribe on the extreme edge was, and is now, represented by the Eskimo.[397] The development and the distribution of the arts were in the same order, and here apparently is the explanation of the superior excellence of Central-American arts, and the seeming derivation of all the arts on the continent from this centre. Finally the

recession of the ice caused renewed trouble. The melting of it and the return thereby of the locked-up waters to the ocean caused a submergence of lowlands that had been made habitable by their withdrawal. There were floods and floods. Tribes were overwhelmed or were driven to higher ground. There was a renewed shifting of populations over the whole continent. Those which had been held back toward the highlands and toward the ice, accustomed to the cool airs and to a particular food, readily followed the retrogression of the ice, impelled always by pressure of the tribes farther south. They were inured to cold. The most southerly tribes became inured somewhat to heat, and clung to their lands, impelled also to do this by the pressure of wilder tribes recoiling from contact with still other tribes. But heat being debilitating, and especially so to the Amerind constitution, the Yucatec peoples, who were those who had attained the highest development, gradually degenerated under its influence, and before the voyage of Columbus whole cities were depopulated. Some held their own for a longer period, but were already on the way to decline when the Spaniards appeared. In some cases their towns were occupied by an inferior tribe of perhaps the same stock, or an inferior tribe dwelt around them and, not knowing the origin of the architectural works, attempted to account for them by fairy tales like the legend of the *Dwarf's House*, which Stephens learned. The people nearest the ice front are still represented by the Eskimo, and their next neighbours, as of yore, are the Athapascans, and Algonquins, and so on down in zones more or less distinct, but considerably deranged by subsequent migrations, to the builders of the Yucatec ruins. The Apaches and Navajos are usually said to have *come*

down from their kin in the North, but it is equally possible that they *remained behind* in the high mountains while their kin pushed on.[398] The table-lands of Mexico, being high and temperate, formed a final refuge for many tribes, some of whom had profited by contact with the centre of development, and these roamed the plateau, one branch finally settling around the lake of Mexico, and there planting again the seeds of the lowland culture. Many tribes were early crowded into the California coast region, because the lowland climate there remained comparatively mild, and the supply of fish, seals, etc. was so great that they were not compelled to till the soil for subsistence (if indeed they were possessed of sufficient knowledge, or if the land were in condition to produce), as was the case farther south, where the population was denser and natural supplies insufficient. But the region was so inhospitable that only fragments of these tribes survived. They did not multiply.



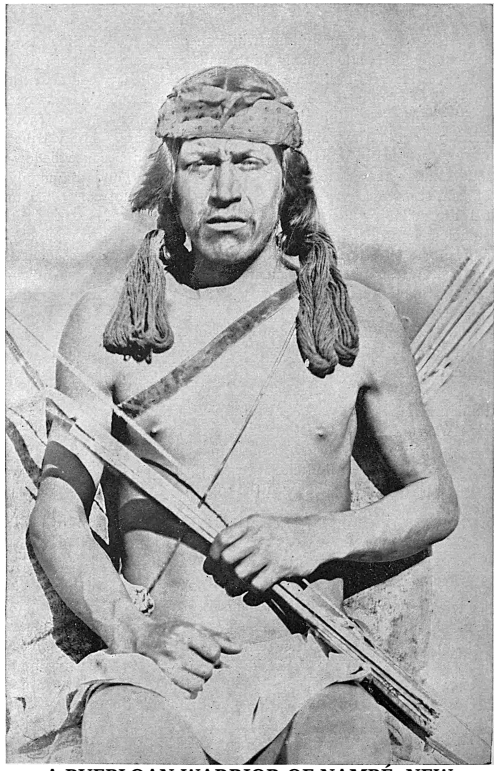
Photographed by the author

PROBABLE ASPECT OF ALASKA SUMMER LANDSCAPE SOME 600 YEARS AGO

The reason the Eastern continents produced many and diverse peoples is that the glacial period temperate zone, or warm zone, extended through many degrees of *longitude*, offering extensive areas of settlement to the races in that hemisphere, where they remained more or less isolated and independent, to advance in their own way and along their own lines; that is, on the Eastern continents there was ample *latitudinal* land space, while on the Western there was a very limited latitudinal land space that retained a salubrious climate. This was the cause of North American race homogeneity.

The period of time that has elapsed since the so-called disappearance of the ice was formerly believed

to be very great, but latterly views on this point have been much modified. Gilbert has declared, after a study of the Niagara gorge, that the time since the ice left that region is not more than seven thousand years, perhaps less. More recent investigations have tended to confirm his suggestion of fewer years. Immediately after the recession of glacial ice, as may be seen in Alaska to-day, erosion is extremely rapid. I have not space to discuss this point at length, but it is apparent that the rate of erosion is variable, and I doubt if more than five thousand years have passed since the ice left the vicinity of the Niagara gorge. As it still lingers in the North, far down on the Pacific side, it *is probably not more than a thousand years since its influence was powerful in affecting the climate of all the region southward*. The North is undoubtedly growing warmer. Some five hundred years ago Alaska was still covered with glacial ice. Five hundred years from now there will scarcely be a glacier to be found there, except in the highest mountains. “The next generation will find few of them with their fronts still in the sea,” says Henry Gannett.[399]



A PUEBLOAN WARRIOR OF NAMBÉ, NEW MEXICO, IN BATTLE ARRAY

The most widely spread stocks are made up of those that were forced to occupy a middle position during the cold, like the Algonquins and Athapascans, who were invigorated by it. Other stocks, for reasons not understood, dwindled to mere handfuls of people, like the Karankawan, now extinct, the Adaizan, the Natchezan, the Uchean, the Zuñian, Keresan, and others. The oldest people of the Valley of Mexico mentioned are the Xicalancas, Olmecas, and the Toltecs. Brinton believed the latter never existed, but other authors, fully as distinguished, accept them as a *bona-fide* tribe. They may have been kindred to the Nahuatls, coming from

the crowded lowlands, as the waters rose and the heat increased, and occupying the cooler plateau. Their wilder relatives later became influenced by them and adopting their learning began the famous development in the Valley of Mexico. The period of evolution in the crowded region was very long. Tribes rose to power and declined.[400] Other tribes, profiting by their experience, took up some of their ways and progressed. Many of these tribes we have no reminiscence of.

Back of the Conquest of Mexico by Cortes, the thread of authentic history becomes most uncertain. It begins about the sixth century. Ixtlilxochitl, the native Mexican, has written a good deal, but it must be taken, oftentimes, with extreme caution. The history of the Amerind race is written mainly by their conquerors. It is a one-sided affair, and even so is not pleasant reading. Balzac says: “Historians are privileged liars, who lend their pen to popular beliefs.” Certainly the character of the Amerind and his doings have not often been too charitably drawn, while, on the other hand, our actions toward him, even as related by ourselves, are enough to make one sometimes doubt the benefits of civilisation. Morgan, speaking of the remnant of the Senecas, says: “To embitter their sense of desolation as a nation, the pre-emptive right to these last remnants of their ancient possessions is now held by a company of land speculators, the Ogden Land Company, who, to wrest away these few acres, have pursued and hunted them for the last fourteen years with a degree of wickedness hardly to be paralleled in the history of human avarice. Not only have every principle of honesty, every dictate of humanity, every Christian precept been violated by this company in their eager artifices to despoil the Senecas; but the darkest

frauds, the basest bribery, and the most execrable intrigues which soulless avarice could suggest, have been practised in open day upon this defenceless and much injured people."[401]



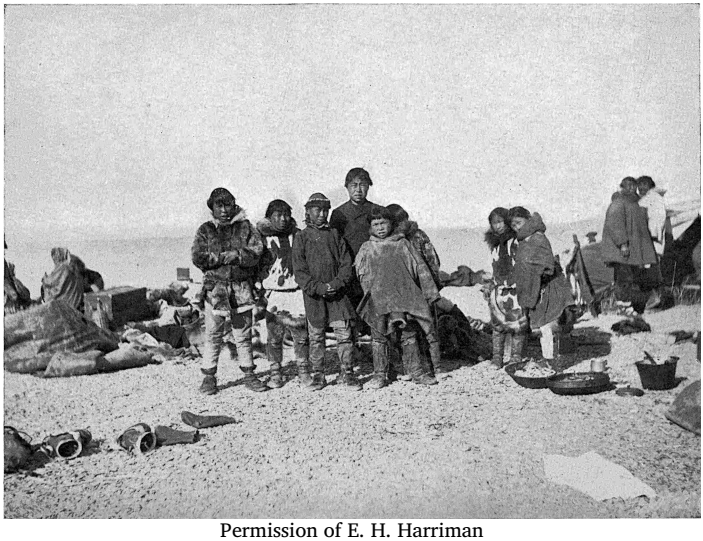
APACHE WOMAN CARRYING WATER IN A WICKER BOTTLE

On one occasion in 1643, out of a spirit of revenge for a murder committed by an Indian who had been infuriated by whisky, but whose friends, according to Amerind custom, offered to pay a blood indemnity, Governor Kieft, heading a band of soldiers and freebooters from Dutch privateers, fell upon the unsuspecting Algonquins and slaughtered over a hundred of them. Little children were tossed into the river, and the parents who plunged to the rescue were prevented from landing by the soldiers, and child and parent both perished. In this incident began the Dutch and Indian War, which lasted two years. Can anyone condemn them for going to war

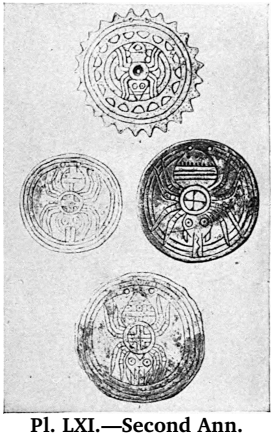
after such treatment?

Acts of white brutality of this character could be quoted to fill a volume, but these are sufficient to indicate the manner of the European approach, except in the case of Penn. The more docile the Amerinds were, the more abuse they got. If they became self-supporting like the Navajos, the government gave them nothing; if they were murderous and deadly, like the Apaches, the government took care of them and fed them. Issuing rations is a proper thing, when we have destroyed the native means of subsistence, but the tribe that works and helps itself ought to be aided further toward civilisation in other ways. One of the most stubborn of the numerous Amerind wars was the Seminole in the Everglades of Florida. Our whole available force was engaged in this war, besides some fifty thousand militia and volunteers. Though there were probably not more than four hundred warriors, the cost of the war was over $30,000,000, and three thousand lives were sacrificed. The wars with the Apaches were long and difficult. The Modocs also carried on a disastrous war, and recently the Sioux took their turn. These wars could generally have been averted by proper diplomacy. The battle of Wounded Knee was precipitated by a wild and unauthorised shot at a critical moment by one of our soldiers. Had he remained inactive the battle would probably never have occurred. Many tribes were exterminated at an early period. Most of the Carolina tribes were destroyed between 1714 and 1740. To-day very few Amerinds exist in the United States east of the Mississippi. Those who were not destroyed, or who are not still living on lands reserved for them, are mostly west of the Mississippi, either on lands belonging to them in the Indian

Territory, or on scattered reservations. Tribes in Indian Territory have long conducted a sort of civilised government, but some of them are now on the eve of selling their lands and purchasing broader tracts with the funds obtained, in Mexico. The Navajos are in possession of an enormous area lying across the line of Arizona and New Mexico, and their vast herds of sheep, cattle, and horses require extensive grazing, so that it will be impossible to reduce the area allotted to them, especially as the tribe is steadily increasing in numbers. Schools of mechanic arts should speedily be established among them, in order that when they eventually are obliged to look to other avenues of support than stock-raising, they can do work that will command a price. It makes not the slightest difference whether or not they are able to read English, if they have wares to sell that white people need and want, and the Navajo is capable of great development on the mechanical side. They will learn English when necessity requires it. The Mokis have a reservation adjoining the Navajos, and it is ample for them for all time, as they are not increasing, and their herds of sheep are small.



Permission of E. H. Harriman
GROUP OF ESKIMO, PORT CLARENCE, ALASKA

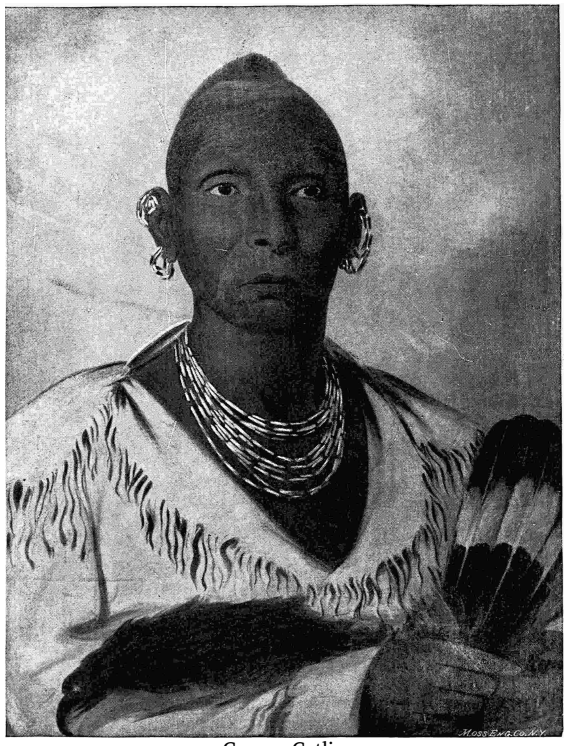


Pl. LXI.—Second Ann.
SHELL SPIDER GORGETS
From mounds in Missouri, Illinois, and Tennessee

In the West the history of the Amerind is linked mainly with that of but two other races, the Spanish and the Anglo-Saxon, while in the East it is intimately bound up with the wars and history of the

Dutch and French as well. All the struggles of these European races for supremacy affected the Amerind, and in the East he is found sometimes on one side, sometimes on another.[402] He did not for some time discover that his doom was in the European regardless of kind. At first, too, the Amerind extended the law of hospitality to the newcomers, and the Europeans would have starved to death in some instances had it not been for the timely aid of the race in possession of the soil, and whose reward was subsequent destruction. The Amerinds at last tried to combine, as in the conspiracy of Pontiac, against their increasing foe, and had they been able to throw aside some of their peculiar regulations and form a wide-spreading and close confederacy, they could have compelled the Europeans to halt on the Atlantic slopes of the Appalachian chain for a long period. “In our ignorance,” says Simon Pokagon, chief of the Pokagon Pottawatomies, “we did not comprehend the mighty ocean of humanity that lay back of the advance waves of pioneer settlement. But being fired by as noble patriotism as ever burned in the hearts of mortals, we tried to beat back the reckless white man who dared to settle within our borders—and vast armies were sent out to punish us. We fought most heroically against overpowering numbers for home and native land; sometimes victory was ours, as when, during the last decade of the eighteenth century, after having many warriors killed, and our villages burned to the ground, our fathers arose in their might, putting to flight the alien armies of Generals Harmer and St. Clair, hurling them in disorder from the wilderness across our borders into their own ill-gotten domain.”[403] But the whites who had already come to America, however much they might have desired to leave the

Amerinds alone, were powerless to prevent other whites, in search of better fortunes, from dispossessing them, and so impelled by the pressure of European population, numbers came and numbers came again and again, and yet still others behind them. The result, the final result, was inevitable. The Amerind was doomed when Columbus first saw the Western land, and nothing that the Amerind could have done would have greatly changed the final course of events. Tecumseh made an heroic effort to unite his people in a stubborn stand against the enemy, but the difficulty was that there were not enough Tecumsehs. The powerful league of the Iroquois, that once promised to dominate the whole continent, began its decline with the very first intercourse with the Europeans, so that in 1750 they were about half their former number. The league was probably formed about the middle of the sixteenth century, and in these two hundred years they reached their highest power and were on the wane. As it must have taken them some time to reach the point where they could form such a body as the league, they must have been a powerful and progressive people at least a hundred years before, so that their main existence as a progressive people probably covered a period of some three hundred years if not more. Had they not been wrecked by contact with Europeans, it is safe to assume that they would have advanced to double their power, at least, in another century. They destroyed the Siouan tribes of the East, held the Lenapé in subjection, and terrorised the Algonquins as far as the banks of the Mississippi.



George Catlin
BLACK HAWK
The great central figure in the Black Hawk War, 1832



Photographed by M. H. Saville, 1890

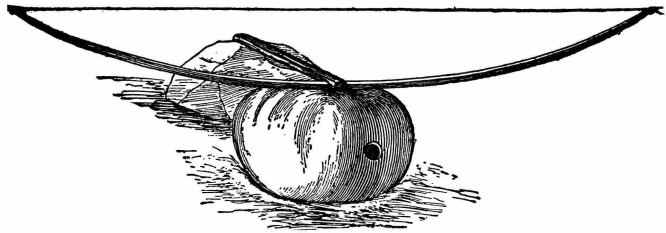
PORTION OF THE SO-CALLED "PALACE" OF LABNA, YUCATAN
Construction: stone. Site: tropical forest. Abandoned in prehistoric times

Saville says: "The entire surface of the country is covered with forests.... Immediately to the south and west no white man has ever penetrated beyond the first range of hills; and who can tell what gems of ancient architecture lie buried in the wilderness"

King Philip, Red Jacket, Pontiac, Black Hawk, and many other Amerinds distinguished themselves as men of wide capacity, and in our later day may be mentioned the famous Sitting Bull, whose sagacity, intelligence, and military skill were of an extremely high order. He gave us much trouble, to be sure, but if all is fair in war, Sitting Bull deserves great praise for his ability.

In war the Amerinds were given to killing all they could, but as this is the business of war, and as white armies use weapons that are also meant to kill, and seem to try to do killing in battle, we cannot be too hard on the Amerind warrior if he did not always do his killing exactly in the way we do it. "Murder as a

fine art" was not one of his studies. He killed and we kill; where is the difference? Wars may be necessary; I think they sometimes are; so did the Amerind.



MUSICAL BOW OF THE SOUTHERN TEPEHUANES AND THE AZTECS, MEXICO

The sounding-board is a gourd with a hole in it. The other end of the brace attached to the bow rests on a stone. The cord of the bow was struck by a stick to produce the desired noise. Found by Lumholtz in use. Length of bow, 1 metre 36.5 centimetres. See page 308; and also article on "Geographical Distribution of the Musical Bow" by O. T. Mason, *American Anthropologist*, November, 1897; *Natural History of the Musical Bow*, by Henry Balfour; and "Symbolism of the Huichol Indians," by Carl Lumholtz, *Memoirs of the American Museum*, vol. iii, pages 206, 207

Long before any permanent settlers pushed to the wilderness, adventurous traders penetrated to remote regions with the whisky keg, and as they seldom expected to go to the same place twice, they usually swindled the native outrageously. Many of these were Frenchmen, and they were given the name of *Coureurs du Bois*. There were also always certain outlaws who found safety in putting a great distance between themselves and the law. These classes were more apt to stir the native up against the European than to render intercourse easy, and often, in early times as well as in our day, they incited the Amerinds to war for the sake of their own gains. But it was the coming of actual settlers which caused the greatest trouble. They appropriated the soil, killed the game, and otherwise interfered with rights which the tribe concerned had for centuries, perhaps,

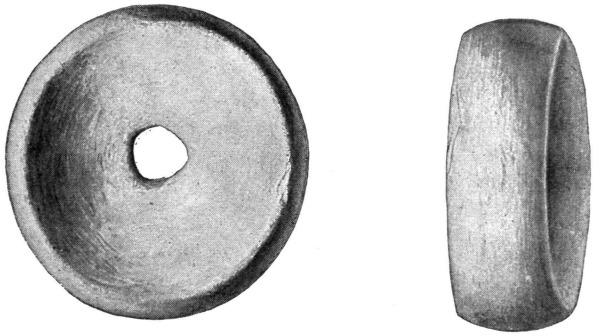
regarded as theirs alone. In the case of the Hudson Bay Company, it being well understood that they occupied certain points merely for trade, no trouble was ever experienced. *For two hundred years this company traded all over the northern part of the continent without a serious rupture with any tribe!* Each tribe held its own lands as before, so far as the company was concerned, hence there was no clashing; but with settlers taking up choice places it becomes another matter.



GENERAL TYPE OF CHIMMESYAN, HAIDA, AND TLINKIT CHIEF'S COSTUME, NORTH-WEST COAST

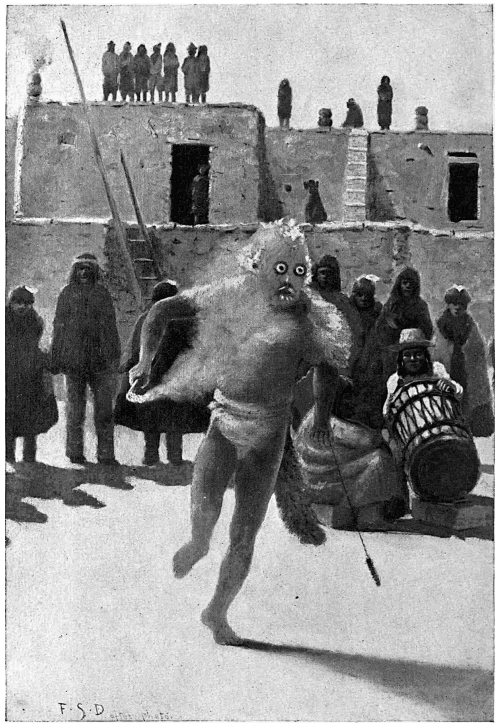
The Chilkat blanket which this man has over his shoulders "is so called because the best specimens come from the Chilkat country,"

says Niblack. All the North-west coast tribes use it. The warp is cedar bark twine and the woof a yarn made of mountain-goat wool. See pages 128, 142.



PERFORATED DISCOIDAL STONE, ILLINOIS

The stories of Cabeza de Vaca, Soto, Cortes, Coronado, John Smith, La Salle, Tonti, Joliet, Lewis and Clark, Fremont, and many others are valuable, not only for the adventures contained in them and the descriptions of new country, but because of the descriptions of Amerinds as they existed in the beginning. Our understanding of the routes of some of these explorers is not always strictly accurate, and the accuracy of the route has much to do with our properly placing geographically the Amerinds named therein. There are grave discrepancies in the tracing of that of Coronado, for example. In another place I have presented my views on this subject.[404]



HOBOBO, THE FIRE KATCINA IN THE SOMAIKOLI CEREMONY, CICHUMOVI, 1884
From a drawing by the author, after one of his photographs. The mask enclosed the whole head, and was of cloth, stained green, with globular eyes attached



CIRCLE OF DANCERS IN THE INTERVALS

BETWEEN THE APPEARANCES OF THE VARIOUS KATCINAS IN THE MOKI SOMAIKOLI CEREMONY, CICHUMOVI, ARIZONA, 1884

As there were outlaws among the whites, so too there were outlaws among the Amerinds. These were men from various tribes who had committed crimes and escaped the punishment they should have received according to the law of their people, and coming together they sometimes formed a band by themselves in some strong and isolated position. A good example of such a band of renegades was that of one Patnish in south-eastern Utah near the Navajo mountain. It was composed of outlaws from the surrounding tribes, chiefly Utes and Navajos, and was the terror of the country, though in 1872, when I first knew of it, nothing in the way of serious depredation had been attempted for several years. The Mormons of southern Utah looked upon Patnish as a dangerous man, yet he sometimes came to their frontier villages in a peaceful way. He had three or four stalwart sons who usually accompanied him in his travels, and they were always ready for emergencies. The band wore the Navajo dress and, I understood, preferred to be considered Navajos. Beckwourth mentions a renegade band of this sort in his time, a village "composed of outlaws from all the surrounding tribes, who were expelled from their various communities for sundry infractions of their rude criminal code; they had acquired a hard name for their cruelties and excesses, and many white traders were known to have been killed by them.... The village numbered three hundred lodges, and could bring from twelve to fifteen hundred warriors into the field.... We called it the City of Refuge."[405] He speaks of them as Cheyennes, but I suppose they were Cheyennes in the same way that Patnish's band

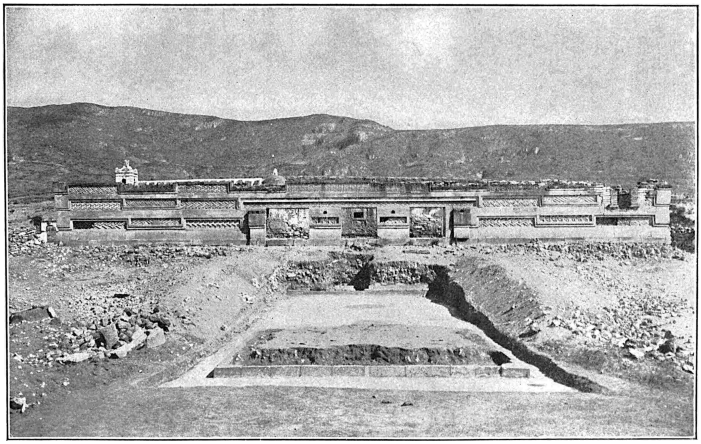
were Navajos; because they preferred to be called so.

These outlaws often caused trouble between the better class of Amerinds and the whites, because, especially in the earlier days, an “Indian” was an “Indian” always and everywhere, and a crime of the outlaws or others was revenged upon the first “Indian” that was met with. There never was any inquiry to find out if he committed the crime; he was generally shot on sight. Innocence was a quality never thought of in dealing with “Indians.” By reason of their birth, they were all guilty of any crime perpetrated.

But I have already exceeded the limits prescribed for this book. In concluding, I would say that it seems from all the evidence available that this continent was peopled at a period so remote that other races had not yet developed their present characteristics. This was probably before the glacial epoch began, while the Northern climate was mild, and while land surfaces were distributed more on latitudinal lines, separated by narrower waters. Afterwards there was a rearrangement by the forces of nature, which, together with the extreme cold of the North, effectually separated the Amerinds from other peoples, and caused them to mingle and react on each other till even the affinities which had before developed in different localities and had produced some differentiation of types were almost rubbed out and remain to-day only as tinges of the earlier qualities. The other world tribes, subjected to other influences, have developed other differences and have diverged from their original stocks. It is also probable that in the redistribution of land surfaces and rearrangement of land levels, many stocks, some highly developed, were obliterated.

Slight modifications may have occurred through later accidental intrusions from the Eastern Hemisphere, but if there had been any considerable intercourse within a recent period between outside peoples and the Amerinds we should have found distinct traces of it in the writings of early days. People as different and extraordinary as the Amerinds were would have produced a vivid impression on any who might have seen them and contrariwise a European, for example, would have left a lasting impression. On the extreme North-west coast there seems to be a type resemblance to Asiatics, but this is more likely due to an extremely early colouring which was preserved by special isolation on this continent, rather than to any considerable infusion of Asiatic blood in recent time. As before remarked, I am of the opinion that the Alaska and North-west coast tribes reached those regions from the South and South-east in comparatively late times.[406] Taking a broad view of the question, it seems to be an inevitable conclusion that the Amerind race, or rather *the various races of which it was originally composed*, were early cut off on this hemisphere from intercourse with the remainder of the world, and held in isolation by a change in land distribution and by the continued glaciation of the northern portions of the continent which in a measure endures to this day. The climate of North-eastern Siberia was also glacial and prevented migrations from milder regions. Many eminent archæologists agree that the Amerind was here before the great cold moved down, although the evidence of implements and remains as we now understand them is, perhaps, insufficient. Languages, traits, customs, and arts are also to be considered, and they seem all to favour, as outlined above, the theory of an exceedingly remote peopling of this

continent from various directions. But this slight attempt to outline vast movements must be brought to a close. To sum briefly up, then, it seems that the Amerindian race, while originally composed of different elements, was, as a body, separated from the other peoples of the world, at a remote epoch, and by peculiar climatic and geographic influences, welded into an ethnic unity, which was unimpressed by outside influences till modern times.



Photographed by M. H. Saville

FRONT OF THE HOUSE OF THE COLUMNS, MITLA, OAXACA

The excavation is shown that was made by Saville in January, 1900. A cement floor was uncovered and the base of a square that was probably a shrine. On the left, behind, is seen the top of the Catholic church that has been built on the site of one of the ancient structures. Excavations at the sites of old cities will doubtless yield valuable returns. Recently (October, 1900) a sewer excavation in the City of Mexico, near the Cathedral, the site of the great teocalli, furnished several wagon-loads of idols, gold objects, jade beads, etc. See also pages 209, 246

NOTE.—For an excellent *résumé* of facts on "The Prehistoric Archæology of North America," see the article by Henry W. Haynes, p. 329, Winsor's *Narrative and Critical History of the United States*, vol. i.; also "The Progress of Opinion Respecting the Origin and Antiquity of Man in America," by

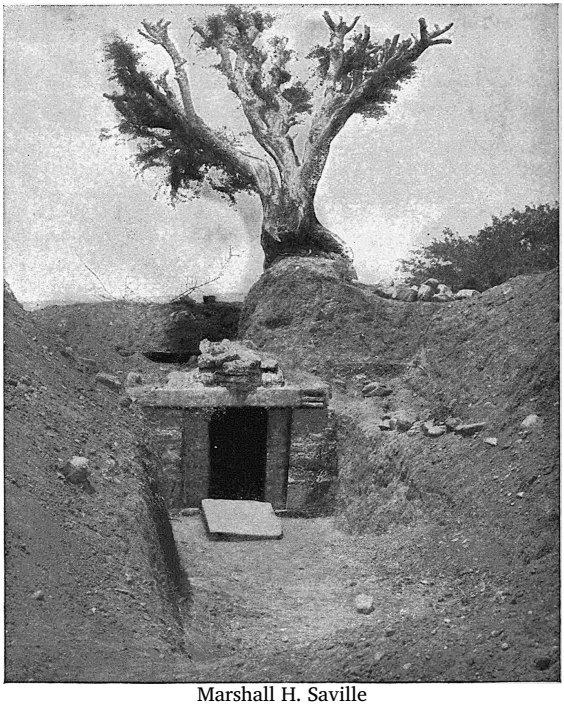
Justin Winsor, *ibid.*, p. 369; also the "Critical Essay on Sources of Information," p. 316; and for pre-Columbian explorations see p. 76; and, *The Fundamental Principles of Old and New World Civilisations*, by Mrs. Zelia Nuttall, Peabody Museum.



Harlan I. Smith

A COSTUMED HUMAN FIGURE FROM TAMPICO, WASHINGTON
½ natural size.

The material is antler. Found in a stone cist somewhat resembling the stone graves of Kentucky and Ohio, but covered by a heap of jagged basaltic rocks about 8 feet in diameter. The skeleton of a child was found in the cist. The antler figure is 247 mm. long and from 2 to 5 mm. thick. The front is engraved as shown above. The back is plain. See paper on this subject by Harlan I. Smith.—*Bulletin American Museum*, vol. xx, pp. 195–203.



Marshall H. Saville

ENTRANCE OF A TOMB AT CUILAPA, MEXICO

It was around the entrances of such tombs as this that the terra-cotta funeral urns were found, shown on pp. xii, xxviii, 115. They were usually in series of five with nothing in them.



STICK USED IN THE AWL GAME

APPENDIX[407]

A LIST of the principal stocks or families, tribes, and many sub-tribes of the North American Amerinds, based on the linguistic classification of the U. S. Bureau of Ethnology, as given in the *Seventh Annual Report*; on Brinton's classification in his *The American Race*, on Mason's "Linguistic Families of Mexico," in the *American Anthropologist*, N. S., vol. ii., No. 1; in *Mexico*, Washington, 1900, Bureau of American Republics; Dall's Tribes of the Extreme Northwest, *Contributions to North American Ethnology*, vol. i.; James Mooney's *Siouan Tribes of the East*; and on lists in the *Bibliographies* of James C. Pilling, with tribal names from other sources.

List of Stocks and Sub-Stocks[408]

The abbreviations are the ones used in the alphabetical list of tribes. By referring back from that list to this, the linguistic affinity and general geographical location of a tribe may be determined. The author has added the term "HOPITAN" as a sub-stock of the SHOSHONEAN to designate the group of Hopi tribes, which, while showing strong linguistic affinity, are otherwise, like the PIMAN and NAHUATLAN, so markedly separated in habits from the true SHOSHONEAN stock that an individual classification for them seems desirable. As the HOPITAN are ranked as SHOSHONEAN in the general

scheme the harmony of the classification is not interfered with. PUEBLOAN is also given as a comprehensive descriptive term for all the permanent house-building tribes, regardless of linguistic affinities, or ancient or modern existence. This is necessary because it is not possible to assign a linguistic place to the former occupants of ruins like those of the Chaco, yet it is settled that they were of a kind with the other town builders. Thus, also, the Cliff-dwellers may be conveniently classed under this head. Tusayan and Cibola, as applied respectively to the HOPITAN and the ZUÑIAN, should never be used, for the reason that it is not certain that these are the places that were so designated by Coronado in 1540. The author believes they were not seen by Coronado. [409] It is in the interest of accuracy to avoid these unnecessary designations, which confuse ethnological and geographical matters.

Ada. ADAIZAN. Western Louisiana.

Alq. ALGONQUIAN. North-east third of the continent, from Tennessee and Montana.

Ath. ATHAPASCAN. North-west part of the continent, and from the Utah-Colorado line southward into Mexico. There are also some small groups on the Pacific coast in south-western Oregon and north-western California.

Att. ATTACAPAN. Southern Louisiana.

Beo. BEOTHUKAN. Northern Newfoundland. Extinct. Formerly all Newfoundland.

Cad. CADDOAN. Louisiana, Texas, Arkansas, and North Dakota.

Crb. CARIBBEAN. Caribbean Islands and British Honduras. Also probably Florida and S. E. United States at a very early period.

Cpn. CHAPANECAN. Chiapas, Mexico.
Chi. CHIMAKUAN. North-west Washington.
Chrk. CHIMARIKAN. Northern California.
Chyn. CHIMMESYAN. British Columbia, near Dixon Entrance, and the neighbouring Annette Island, in Alaska.
Cit. CHINANTECAN. Oaxaca, Mexico.
Chik. CHINOOKAN. Lower portion of the Columbia River.
Cht. CHITIMACHAN. Southern Louisiana.
Chon. CHONTAL.See Zap., My., Tqs., also Tzental.
Chm. CHUMASHAN. Southern California coast.
Coh. COAHUILTECAN. Lower valley of the Rio Grande del Norte, adjacent to the Gulf of Mexico.
Cop. COPEHAN. Northern California.
Cso. CUSABOAN. Coast of South Carolina; possibly mainly related to the Muskhogean. It is a group title. See Gp.
Cost. COSTANOAN. California, south of the Golden Gate.
Dak. DAKOTA. See Siu.
*E. Siu.*SIOUAN OF THE EAST.Same as Siu.
Esk. ESKIMAUAN. From Prince William Sound, Alaska, all along the northern coasts, islands, and inlets to Hudson Bay, Greenland, and northern Newfoundland.
Alk. Esk. Alaska Eskimo.
Alu. Esk. Aleut Eskimo. Aleutian Islands.
Gr. Esk. Greenland Eskimo.
Lab. Esk. Labrador Eskimo.
M. Esk. Middle or Central Eskimo. North of Hudson Bay.
Gp. GROUP TITLE. Several tribes of different stocks classed erroneously together.

Gua. GUATUSOAN. Nicaragua.
Ess. ESSELENIAN. South coast of California.
Hai. HAIDA. See Skit.
Hua. HUAVAN. Isthmus of Tehuantepec.
Ho. HOPITAN. North-east Arizona. Classed as Shoshonean.
Ir. IROQUOIAN. Around lakes Erie and Ontario, and down the St. Lawrence as far as Quebec; along the Susquehanna and its branches as far as the mouth, and also a belt through northern Georgia, eastern Tennessee, western North Carolina, and southern Virginia.
Kal. KALAPOOIAN. Western Oregon.
Kar. KARANKAWAN. Southern Texas. Extinct.
Kers. KERESAN. Northern New Mexico.
Kio. KIOWAN. Indian Territory, formerly in the Platte valley.
Kit. KITUNAHAN. British Columbia and Oregon.
Kols. KOLUSCHAN. Dixon Entrance to Prince William Sound, Alaska.
Kuln. KULANAPAN. North-western California.
Kus. KUSAN. Western Oregon.
Ln. LENCAN. Honduras.
Lut. LUTUAMIAN. Southern Oregon and northern California.
Mar. MARIPOSAN. Southern California.
Mgn. MATAGALPAN. Nicaragua.
My. MAYAN. Northern border of Honduras to Isthmus of Tehuantepec.
Mex. MEXICANA. See Nah.
Mixt. MIXTECA. See Zap.
Mo. MOQUELUMNAN. Central California.
Mus. MUSKHOGEAN. Mississippi, Alabama, Georgia, northern Florida, and western Tennessee.

Nah. NAHUAN. See NAHUATLAN.
Nah. NAHUATLAN. Southern portion of Mexico and parts of Central America. Classed as Shoshonean.
Nah. NAHUATLACA. See NAHUATLAN.
Nat. NATCHESAN. Northern Louisiana, western Mississippi. Now in Indian Territory.
Ot. OTOMIAN. Central Mexico.
Pal. PALAIHNIHAN. North-eastern California.
Pa. PANI. See Cad.
Pim. PIMAN. The Sonoran region of Mexico, and southern Arizona. Classed as Shoshonean.
Pbl. PUEBLOAN. See Ho., Kers., Pim., Tan., Zun., etc. Northern Mexico and the south-western part of the United States. The stone and adobe house building tribes.
Puj. PUJUNAN. North-eastern California.
Qrs. QUERES. See Kers.
Qor. QUORATEAN. Northern California.
Sli. SALINAN. Southern California coast.
Salh. SALISHAN. North-west Oregon, northern Washington, northern Idaho, western Montana, south-western British Columbia.
Sas. SASTEAN. Northern California.
Ser. SERIAN. Tiburon Island and adjacent coast of Mexico.
Shap. SHAHAPTIAN. South-east Washington, north-west Oregon, western Idaho.
Sho. SHOSHONEAN. Southern Texas to northern Montana and north of the Colorado River, west to the Sierra Nevada. In southern California through to the Pacific. Under Shoshonean are classed by

some authorities not only the true Shoshonean but the Nahuatlan, Piman, and Hopitan. Including the Piman and Nahuatlan the stock range would extend throughout Mexico and to parts of Central America.

Siu. SIOUAN. Continuously from northern Louisiana to the province of Saskatchewan, eastward to the Mississippi, and in Wisconsin as far as Lake Michigan. Westward to the eastern boundaries of Colorado and Idaho. There were also formerly a number of tribes of this stock in North Carolina, South Carolina, and Virginia. See E. Siu.

Skit. SKITTAGETAN. Queen Charlotte Island, North-west coast.

Sub. SUBTIABAN. Nicaragua.

Tak. TAKILMAN. South-west Oregon.

Tan. TAÑOAN. Valley of the Rio Grande del Norte, New Mexico.

Tar. TARASCAN. Michoacan, Mexico.

Tqs. TEQUISTLATECAN. Oaxaca, Mexico.

Te. TEWAN or TEHUAN. See Tan.

Tim. TIMUQUANAN. Florida.

Tl. TLINKIT. See Kols.

Tkn. TONIKAN. Eastern Louisiana and western Mississippi.

Tow. TONKAWAN. Western and southern Texas.

Tot. TOTONACAN. State of Vera Cruz, Mexico.

Tzl. TZENTAL. Tabasco, Mexico. See also Chon.

Uch. UCHEAN. Georgia.

Ulv. ULVAN. Honduras.

Un. UNIDENTIFIED. Region, state, or possible affinity following.

Uto-Az. UTO-AZTECAN. See Ho., Nah., Pim.,

Sho.
Wlp. WAIILATPUAN. North-east Oregon.
Wak. WAKASHAN. Coast of British Columbia.
Wash. WASHOAN. Eastern California; western Nevada.
Wei. WEITSPEKAN. North-west California; south-west Oregon.
Wish. WISHOSKAN. North-west California.
Ykn. YAKONAN. Coast of Oregon.
Yan. YANAN. Northern California.
Yuk. YUKIAN. Western California.
Yma. YUMAN. Arizona, southern California, and Lower California.
Zap. ZAPOTECAN. Southern Mexico.
Zo. ZOQUEAN. Chiapas and Oaxaca, Mexico.
Zun. ZUÑIAN. Western New Mexico.

List of Tribes

The stocks are also included and are printed in capitals. In order to facilitate reference several titles of the same tribe are sometimes given.

Abbāto-tenā. *Ath.*
Abnaki. *Alq.*
Absáruqe. *Siu.*
Acadiau. *Alq.*
Acaxees. *Nah.*
Acconeechy. *E. Siu.*
Acha. *Pbl.*
Achē'to-tin'neh. *Ath.*
Achis. *My.*
Achomâwi. *Pal.*
Acolhua. *Nah.*
Acoma. *Kers.*
Acomita. *Kers.*

Acquera. *Tim.*
Acxoteca. *Nah.*
Adahi. *Ada.*
Adáí. *Ada.*
ADAIZAN. *Ada.*
Adaize. *Ada.*
Adees. *Ada.*
Adshusheer. *E. Siu.*
Aggomiut. *M. Esk.*
Agualulco. *Nah.*
Aguateca. *My.*
Aguile. *Tim.*
Agutit. *M. Esk.*
Ahaknanelet. *M. Esk.*
Ahántchuyuk. *Kal.*
Ahome. *Pim.*
Ahowsaht. *Wak.*
Aht. *Wak.*
Ahtena. *Ath.*
Aicale. *My.*
Aivillirmiut. *M. Esk.*
Aiyan. *Ath.*
Ajoye. *My.*
Akansea. *Siu.*
Akbat. *Gr. Esk.*
Akenatzy. *E. Siu.*
Akoklako. *Kit.*
Akorninak. *Gr. Esk.*
Akudliarmiut. *M. Esk.*
Akudnirmiut. *M. Esk.*
Alaguilac. *Nah.*
Alame. *My.*
Alasapa. *Coh.*
Aleut. *Alu. Esk.*
Algonkin. *Alq.*
ALGONQUIAN. *Alq.*

Algonquin. *Alq.*
Alibamu. *Mus.*
Aliche. *Cad.*
Alikwa. *Wei.*
Alimacani. *Tim.*
Alsea. *Ykn.*
Altatin. *Ath.*
Aluik. *Gr. Esk.*
Amitormiut. *M. Esk.*
Amuchgo. *Zap.*
Amusgo. *Zap.*
Anaddakka. *Cad.*
Anani. *E. Siu.*
Anarnitsok. *Gr. Esk.*
Anasitch. *Kus.*
Andaste. *Ir.*
Angmagsalik. *Gr. Esk.*
Annocchy. *E. Siu.*
Anouala. *Tim.*
Apache. *Ath.*
Apalachi. *Mus.*
Appalou. *Tim.*
Aquamish. *Wak.*
Aquonena. *Tim.*
Arapaho. *Alq.*
Arctic Highlander. *Gr. Esk.*
Ariquipa. *Ath.*
Arikara. } *Cad.*
Arikaree.}
Aripa. *Yma.*
Arispa. *Pim.?*
Arivaipa. *Ath.*
Arkansa. *Siu.*
Arra-arra. *Qor.*
Arvillirmiut. *M. Esk.*
Aseguang. *Skit.*

Ashochimi. *Yuk.*
Asomoches. *Alq.*
Assinaboin. *Siu.*
Assinai. *Cad.*
Assiwikales. *Alq.*
Astina. *Tim.*
Ătaăkût not Ā]. *Ath.*
Atakwa. *E. Siu.*
Atai. *Ada.*
Ateacari. *Nah.*
Atfálati. *Kal.*
Athabascan. *Ath.*
Athapacca. *Ath.*
Athapasca. *Ath.*
ATHAPASCAN. *Ath.*
Atka. *Alu. Esk.*
Atnah (1). *Salh.*
Atnah (2). *Ath.*
Atore. *Tim.*
Attacapa. *Att.*
ATTACAPAN. *Att.*
Atuamih. *Pal.*
Auk. *Kols.*
Awani. *Mo.*
Axion. *Alq.*
Ayankēld. *Kal.*
Ayapai. *Mar.*
Ayhuttisaht. *Wak.*
Aztec. *Nah.*
Babiocora. *Pim.*
Backhooks. *E. Siu.*
Baiyu. *Puj.*
Balló Kai Pomo. *Kuln.*
Baluxa. *E. Siu.*
Bannock. *Sho.*
Basirora. *Pim.*

Basisa. *Tim.*
Batemdikáyi. *Kuln.*
Batucari. *Pim.*
Batuco. *Pim.*
Beaver. *Ath.*
Belbellah. *Wak.*
Bellacoola. *Salh.*
Benixono. *Zap.*
Beothuk. *Beo.*
BEOTHUKAN. *Beo.*
Bethuck. *Beo.*
Biara. *Pim.*
Bilkula. *Salh.*
Biloxi. *E. Siu.*
Binukhsh. *Siu.*
Blackfeet. *Siu.* (*See* Sihasapa.)
Blackfeet. *Alq.* (*See* Siksika.)
Blood Indians. *Alq.*
Boka. *Puj.*
Bollanos. *Mo.*
Braba. *Pbl.*
Brulé. *Siu.*
Bulbul. *Ulv.*
Búldam Pomo. *Kuln.*
Cacalote. *Coh.*
Cachopostate. *Coh.*
Cacores. *E. Siu.*
Cadapouce. *E. Siu.*
Caddo. *Cad.*
CADDOAN. *Cad.*
Cadica. *Tim.*
Cahita. *Pim.*
Cahokia. *Alq.*
Cahrok. *Qor.*
Cahuillo. *Sho.*
Cailloux. *Wlp.*

Cajono. *Zap.*
Cakchiquel. *My.*
Calabaw. *E. Siu.*
Calanay. *Tim.*
Calapooya. *Kal.*
Canai. *Alq.*
Caniba. *Alq.*
Canaway. *Alq.*
Capaha. *Siu.*
Cape Fear. *E. Siu.*
Carcha. *Ulv.*
Carib. *Crb.*
CARIBBEAN. *Crb.*
Carrizo. *Coh.*
Casa Chiquita. *Coh.*
Casa Grande. *Pbl.*
Casas Grandes. *Pbl.*
Cascade. *Chik.*
Casti. *Tim.*
Catajano. *Coh.*
Catawba. *E. Siu.*
Cathlamet. *Chik.*
Cathlapotle. *Chik.*
Cathlascon. *Chik.*
Cattoway. *E. Siu.*
Caughnawaga. *Ir.*
Cayuga. *Ir.*
Cayuse. *Wlp.*
Cenis. *Cad.*
Ceri. *Yma.*
Chaco (Ruins). *Pbl.*
Chahta. *Mus.*
Chainímaini. *Mar.*
Chalca. *Nah.*
Chalqueño. *Nah.*
Chamule. *My.*

Chaneabal. *My.*
Changuaguane. *Ath.*
Chapa. *Cpn.*
Chapanec. *Cpn.*
CHAPANECAN. *Cpn.*
Charack. *Siu.*
Charaeo. *Ot.*
Charense. *Ot.*
Chasta Costa. *Ath.*
Chata. *Mus.*
Chatcheeni. *Skit.*
Chatino. *Zap.*
Chauchila. *Mo.*
Chawishek. *Kuln.*
Chayopine. *Coh.*
Chehalis. *Salh.*
Chelamela. *Kal.*
Chele. *My.*
Chelekee. *Ir.*
Chemehuevi. *Sho.*
Chenposel. *Cop.*
Chepewyan. *Ath.*
Cheraw. *E. Siu.*
Cherokee. *Ir.*
Chetco. *Ath.*
Cheyenne. *Alq.*
Chia. *Pbl.*
Chicasa. *Mus.*
Chichen Itza. *My.*
Chichilticalli. *Pbl.*
Chichimec. *Gp.*
Chichominy. *Alq.?*
Chickasaw. *Mus.*
Chicklesaht. *Wak.*
Chicora. *Cso.*
Chiglit. *Alk. Esk.*

Chikakokim. *Alq.*
Chikaree. *E. Siu.*
Chikelaki. *Alq.*
Chilicothe. *Alq.*
Chilili. *Tim.*
Chilkat. *Kols.*
Chilluckquittequaw. *Chik.*
Chillúla. *Wei.*
Chilpain. *Ath.*
CHIMAKUAN. *Chi.*
Chimakum. *Chi.*
Chimalakwe. *Chrk.*
Chimalapa. *Zo.*
Chimalapas. *Zo.*
Chimalpanec. *Nah.*
CHIMARIKAN. *Chrk.*
Chimariko. *Chrk.*
CHIMMESYAN. *Chyn.*
Chimsian.}
Chimsyan.} *Chyn.*
CHINANTECAN. *Cit.*
Chinanteco. *Cit.*
Chinarra. *Nah.*
Chinipa. *Pim.*
Chinook. *Chik.*
CHINOOKAN. *Chik.*
Chinquíme. *Zo.*
Chipeway. *Alq.*
Chippewa. *Alq.*
Chippewyan. *Ath.*
Chiricahua. *Ath.*
Chiroehaka. *Ir.*
Chitimacha. *Cht.*
CHITIMACHAN. *Cht.*
Choam Chadila Pomo. *Kuln.*
Chochona. *Zap.*

Choctaw. *Mus.*
Chokuyem. *Mo.*
Chole. *My.*
Cholupaha. *Tim.*
Chontal (1). *Gp.*
Chontal (2). *My.*
Chontal (3). *Tqs.*
Chopunnish. *Shap.*
Chorotega. *Cpn.*
Chorti. *My.*
Chowanoc. *Alq.*
Choya. *Tim.*
Chozetta. *E. Siu.*
Christanna. *E. Siu.*
Chuchaca. *Kers.*
Chuchona. *Zap.*
Chugachigmiut. *Alk. Esk.*
Chukaímina. *Mar.*
Chūkchansi. *Mar.*
Chumash. *Chm.*
CHUMASHAN. *Chm.*
Chumâwa. *Pal.*
Chumaya. *Yuk.*
Chumidok. *Mo.*
Chūmteya. *Mo.*
Chumtiwa. *Mo.*
Chumuch. *Mo.*
Chumwit. *Mo.*
Chunut. *Mar.*
Chwachamajù. *Kuln.*
Cia. *Pbl.*
Cicumovi. *Ho.*
Cicuye. *Pbl.*
Cimopavi. *Ho.*
Cipaulovi. *Ho.*
Clackama. *Chik.*

Clahoquaht. *Wak.*
Clallam. *Salh.*
Clamets. *Lut.*
Clatsop. *Chik.*
Clickass. *Skit.*
Cliff-Dwellers. *Pbl.*
Clowetsus. *Wak.*
COAHUILTECAN. *Coh.*
Coahuilteco. *Coh.*
Coaquilenes. *Coh.*
Cochimi. *Yma.*
Cochiti. *Kers.*
Coco. *Ulv.*
Cocomaricopa. *Yma.*
Cocome. *My.*
Coconino. *Yma.*
Coconūn. *Mar.*
Cocopa. *Yma.*
Cœur d'Alêne. *Salh.*
Coguinache. *Pim.*
Cohonino. *Yma.*
Cohuixca. *Nah.*
Colotlan. *Nah.*
Colouse. *Cop.*
Colville. *Salh.*
Comanche. *Sho.*
Combahee. *Cso.*
Comecrudo. *Coh.*
Comeya. *Yma.*
Comiteco. *My.*
Comopari. *Pim.*
Comupatrico. *Pim.?*
Comuripa. *Pim.*
Comux. *Salh.*
Concho (1). *Yma.*
Concho (2). *Coh.*

Conestoga. *Ir.*
Confitachiquí. *Uch.*
Congaree. *E. Siu.*
Coninos. *Yma.*
Conoy. *Alq.*
Cook-koo-oose. *Kus.*
Cooniac. *Chik.*
Coosa. *Un. Mus.? Cso.?*
Cootenai. *Kit.*
Copalis. *Salh.*
Copan. *My.*
Copeh. *Cop.*
COPEHAN. *Cop.*
Coquilth. *Wak.*
Cora. *Pim.*
Coraru. *Nah.*
Coree. *Ir.?*
Corsaboy. *Cso.*
Coshatta. *Mus.*
Cosninos. *Yma.*
Costano. *Cost.*
COSTANOAN. *Cost.*
Cotober. *E. Siu.*
Cotoname. *Coh.*
Coutani. *Kit.*
Covisca. *Zo.*
Covisco. *Zo.*
Cowichin. *Salh.*
Cowlitz. *Salh.*
Coyotero. *Ath.*
Cree. *Alq.*
Creek. *Mus.*
Crow. *Siu.*
Cuchan. *Yma.*
Cuicateco. *Zap.*
Cuitlateco. *Nah.*

Culua. *Nah.*
Cumshawa. *Skit.*
Cûñopavi. *Ho.*
Cusabo. *Cso.*
CUSABOAN. *Cso.*
Cushna. *Puj.*
Cusso. *Cso.*
Cuthead. *Siu.*
Cuttawa. *E. Siu.*
Dāho′-tenā. *Ath.*
Dakota. *Siu.*
Dakubetede. *Ath.*
Dápishul Pomo. *Kuln.*
Daupom. *Cop.*
Delamateno. *Ir.*
Delaware. *Alq.*
Didja-Za. *Zap.*
Diegueño. *Yma.*
Digger. *Gp.*
Digothi. *Ath.*
Dirian. *Cpn.*
Dog Rib. *Ath.*
Dohme. *Pim.*
Dowaganha. *Alq.*
Dwamish. *Salh.*
Eastern People. *Kuln.*
Eataubau. *Siu.*
Echeloot. *Chik.*
Edelano. *Tim.*
Edisto. *Cso.*
Ehiamana. *Tim.*
Ehnek. *Qor.*
Ekŏg´mint. *Alk. Esk.*
Eloquale. *Tim.*
Enecaqua. *Tim.*
Eno. *E. Siu.*

Erie. *Ir.*
Erío. *Kuln.*
Eriwoneck.
Erússi. *Kuln.*
Esaw. *E. Siu.*
ESKIMAUAN. *Esk.*
Eskimo. *Esk.*
Eskin. *Puj.*
Esopus. *Alq.*
Esquimaux. *Esk.*
Esselen. *Ess.*
ESSELENIAN. *Ess.*
Estakewach. *Pal.*
Etchemin. *Alq.*
Etiwaw.}
Eutaw. } *Cso.*
Euchre Creek. *Ath.*
Eudeve. *Pim.*
Éukshikni. *Lut.*
Eurok. *Wei.*
Faraone. *Ath.*
Flachbogen. *Kit.*
Flanahaskie. *E. Siu.*
Flatbow. *Kit.*
Flathead (1). *E. Siu.*
Flathead (2). *Salh.*
Flathead-Cootenai. *Kit.*
Flonk´o. *Ath.*
Fox. *Alq.*
Gallinomréo. *Kuln.*
Ganawese. *Alq.*
Gaspesian. *Alq.*
Gileño. *Ath.*
Gohunes. *Yma.*
Gosiute. *Sho.*
Grand Pawnee. *Cad.*

Gros Ventres. *Siu.*
Guaicuru. *Yma.*
Guailopo. *Pim.*
Guajiquero. *Ln.*
Gualála. *Kuln.*
Guatuso. *Gua.*
GUATUSOAN. *Gua.*
Guaymas. *Pim.*
Guazapari. *Nah.*
Guetares. *Cpn.*
Guilito. *Cop.*
Guimen. *Mo.*
Gyidesdzo. *Chyn.*
Gyitgāata. *Chyn.*
Gyitksan. *Chyn.*
Gyitqātla. *Chyn.*
Gyitsalaser. *Chyn.*
Gyitsumrälon. *Chyn.*
Haeltzuk. *Wak.*
Haida. *Skit.*
Hailtzuk. *Wak.*
Haishilla. *Wak.*
Hammonasset. *Alq.*
Hanahaskies. *Siu.*
Hanega. *Kols.*
Hano. *Tan.*
Hanocoroucouay. *Tim.*
Hantewa. *Pal.*
Hapaluya. *Tim.*
Hare. *Ath.*
Hasatch. *Kers.*
Hasinninga. *E. Siu.*
Hatteras. *Alq.*
Havasupai. *Yma.*
Helto. *Puj.*
Hemes. *Tan.*

Hettitoya. *Mo.*
Heve. *Pim.*
Hicaranaou. *Tim.*
Hichucios. *Pim.*
Hidatsa. *Siu.*
Himeri. *Pim.*
Hiouacara. *Tim.*
Hirrihiqua. *Tim.*
Hishquayquaht. *Wak.*
Hitchitee. *Mus.*
Hizo. *Pim.*
Hoak. *Puj.*
Hoankut. *Puj.*
Hololúpai. *Puj.*
Homolua. *Tim.*
Hoodsunu. *Kols.*
Hoopah. *Ath.*
Hopi. *Ho.*
HOPITAN. *Ho.*
Hopitu. *Ho.*
Howakan. *Skit.*
Howchuklisaht. *Wak.*
Hualapai. *Yma.*
Huasteca. *My.*
HUAVAN. *Hua.*
Huaves. *Hua.*
Huaztonteco. *Hua.*
Huecos. *Cad.*
Huichol. *Nah.*
Huite. *Nah.*
Huma.}
Hume.} *Nah.*
Humâwhi. *Pal.*
Hunah. *Kols.*
Hupa. *Ath.*
Huron. *Ir.*

Husky. *Esk.*
Husorone. *Pim.*
Hutchnom. *Yuk.*
Hydah. *Skit.*
Igdlolnarsuk. *Gr. Esk.*
Iglulingmiut. *M. Esk.*
Ikogmiut. *Alk. Esk.*
Illinois. *Alq.*
Ilmâwi. *Pal.*
Imahklimiut. *Alk. Esk.*
Inguhklimiut. *Alk. Esk.*
Innies. *Cad.*
Innuit. *Esk.*
Iowa. *Siu.*
Ipapapan. *Tot.*
IROQUOIAN. *Ir.*
Iroquois. *Ir.*
Isantei. *Siu.*
Isleta, New Mex. *Tan.*
Isleta, Texas. *Tan.*
Issa. *E. Siu.*
Iswa. *E. Siu.*
Itafi. *Tim.*
Itara. *Tim.*
Itaziptco. *Siu.*
Ititcha. *Mar.*
Itivimiut. *Lab. Esk.*
Itza. *My.*
Ivimiut. *Gr. Esk.*
Ixil. *My.*
Janos. *Ath.*
Jaripecha. *Tar.*
Jemez. *Tan.*
Jicarilla. *Ath.*
Jocolabal. *My.*
Jonaz. *Ot.*

Jope. *Zo.*
Joshua. *Ath.*
Kabinapek. *Kuln.*
Kadapaw. *E. Siu.*
Kagutl. *Wak.*
Kaialigmiut. *Alk. Esk.*
Kaigani. *Skit.*
Kaimé. *Kuln.*
Kaiowe. *Kio.*
Kai Pomo. *Kuln.*
Kaivavitz. *Sho.*
Kaiyuh-khotānā. *Ath.*
Kakamatsis. *Wak.*
KALAPOOIAN. *Kal.*
Kalapuya. *Kal.*
Kăltsuerea tûnnĕ. *Ath.*
Kamalel Pomo. *Kuln.*
Kangivamiut. *Lab. Esk.*
Kangmaligmiut. *Alk. Esk.*
Kaugormiut. *M. Esk.*
Kani. *Mo.*
Kāniăgmiut. *Alk. Esk.*
Kansa. *Siu.*
Karankawa. *Kar.*
KARANKAWAN. *Kar.*
Karok. *Qor.*
Karsuit. *Gr. Esk.*
Kaskaskia. *Alq.*
Kassooo. *Mar.*
Kassovo. *Mar.*
Kastel Pomo. *Kuln.*
Kasua. *Sli.*
Katchan. *Yma.*
Kato Pomo. *Kuln.*
Kauía. *Mar.*
Kaulits. *Salh.*

Kaus. *Kus.*
Kauvuyas. *Sho.*
Kaviagmiut. *Alk. Esk.*
Kaw. *Siu.*
Kaweah. *Mar.*
Kaweya. *Mo.*
Kâwiasuh. *Sho.*
Kayowe. *Kio.*
Kayung. *Skit.*
Kcaltana. *Ath.*
Kechemeches. *Alq.*
Kechis. *Sho.*
Keimanoeitoh. *Wak.*
Kek. *Kols.*
Kēlta. *Un., Ath.?*
Kemisak. *Gr. Esk.*
Kenai. *Ath.*
Kenay. *Ath.*
Kenesti. *Ath.*
Kera. *Kers.*
Keres. *Kers.*
KERESAN. *Kers.*
Keswhawhay. *Ker.*
Keyauwee. *E. Siu.*
Kiawaw. *Cso.*
K'iapkwainakwin. *Zun.*
Kiawétni. *Mar.*
Kichai. *Cad.*
Kickapoo. *Alq.*
Kiguaqtagmiut. *Lab. Esk.*
Kikapoo. *Alq.*
Kikkertarsoak. *Gr. Esk.*
Killamuk. *Salh.*
Kinarbik. *Gr. Esk.*
Kingnaitmiut. *M. Esk.*
King's River. *Mar.*

Kinnepatu. *M. Esk.*
Kiowa. *Kio.*
KIOWAN. *Kio.*
Kioway. *Kio.*
Kisani. *Pbl.*
Kiscapocoke. *Alq.*
Kitsmaht. *Wak.*
Kittegareut. *Alk. Esk.*
Kittuwa. *Ir.*
KITUNAHAN. *Kit.*
Kizh. *Sho.*
Klallam. *Salh.*
Klamath (1). *Lut.*
Klamath (2). *Wei.*
Klanoh-Klatklam. *Kit.*
Klaokwat. *Wak.*
Klenekate. *Kols.*
Klikitat. *Shap.*
K'naia-khotona. *Ath.*
Knik. *Ath.*
Knisteneau. *Alq.*
Koasáti. *Mus.*
Koloma. *Puj.*
Kolomum. *Puj.*
Kolosch. *Kols.*
KOLUSCHAN. *Kols.*
Komácho. *Kuln.*
Kombo. *Un., Yan.?*
Komuk. *Salh.*
Konjagen. *Esk.?*
Konkau. *Puj.*
Kootenai. *Kit.*
Kopagmiut. *Alk. Esk.*
Kopé. *Cop.*
Korusi. *Cop.*
Kouksoarmiut. *Lab. Esk.*

Kowagmiut. *Alk. Esk.*
Kowelits. *Salh.*
Kowilth. *Wish.*
Koyukukhotānā. *Ath.*
Kramalit. *M. Esk.*
Kuagmiut. *Alk. Esk.*
Kuchin. *Ath.*
Kuitc. *Ykn.*
Kulá Kai Pomo. *Kuln.*
KULANAPAN. *Kuln.*
Kulanapo. *Kuln.*
Kūlmeh. *Puj.*
Kulomum. *Puj.*
Kung. *Skit.*
Kunxit. *Skit.*
Kupule. *My.*
Kusa. *Kus.*
KUSAN. *Kus.*
Kuscarawock. *Alq.*
Kuskwogmiut. *Alk. Esk.*
Kutani. *Kit.*
Kŭtchā-Kŭtchin´. *Ath.*
Kutchan. *Yma.*
Kutchin´. *Ath.*
Kutenay. *Kit.*
Kwaiantikwoket. *Sho.*
Kwakiutl. *Wak.*
Kwalhioqua. *Ath.*
Kwantlen. *Salh.*
Kwapa. *Siu.*
Kwashilla. *Wak.*
Kwatóa. *Puj.*
Kwazami. *Ath.*
Kwikhpăgmiut. *Alk. Esk.*
Kwokwoos. *Kus.*
Kyoquaht. *Wak.*

Lacandon. *My.*
Laguna. *Kers.*
Laimono. *Yma.*
Lákmiut. *Kal.*
Láma. *Kuln.*
Las´sik. *Cop.*
Leaf-shooters. *Siu.*
Lenapé. *Alq.*
Lenca. *Ln.*
LENCAN. *Ln.*
Lenni-Lenapé. *Alq.*
Likatuit. *Mo.*
Likwiltoh. *Wak.*
Lilowat. *Salh.*
Lipan. *Ath.*
Liwaito. *Cop.*
Llanero. *Ath.*
Loldla. *Cop.*
Lolon´kūk. *Ath.*
Lolsel. *Cop.*
Long Island. *Alq.*
Long Valley. *Sho.*
Lopolatimne. *Mo.*
Loucheux. *Ath.*
Lower Coquille. *Kus.*
Lucururu. *Tim.*
Lummi. *Salh.*
Lutuami. *Lut.*
LUTUAMIAN. *Lut.*
Macaw. *Wak.*
Machapunga. *Alq.*
Machaua. *Tim.*
Machemni. *Mo.*
Machemoodus. *Alq.*
Macock. *Alq.*
Magemiut. *Alk. Esk.*

Mahican. *Alq.*
Mablemiut. *Alk. Esk.*
Mahoc. *Un., E. Siu.?*
Maidu. *Puj.*
Maiera. *Tim.*
Makah. *Wak.*
Makhelchel. *Cop.*
Malaka. *Cop.*
Malica. *Tim.*
Maliseet. *Alq.*
Mam. *My.*
Mamaleilakitish. *Wak.*
Manahoac. *E. Siu.*
Manakin. *E. Siu.*
Mandan. *Siu.*
Maneetsuk. *Gr. Esk.*
Mangoac. *Ir.*
Mangue. *Cpn.*
Manhattan. *Alq.*
Mano de perro. *Coh.*
Manosaht. *Wak.*
Mantese. *Alq.*
Mareschit. *Alq.*
Maricopa. *Yma.*
Mariposa. *Mar.*
MARIPOSAN. *Mar.*
Marracou. *Tim.*
Mascoutin. *Alq.*
Maskegon. *Alq.*
Maskoki. *Mus.*
Massachuset. *Alq.*
Massawomek. *Ir.*
Massett. *Skit.*
Massinacak. *E. Siu.*
Matagalpan. *Un.*
Matapane. *Pim.*

Matelpa. *Wak.*
Mathaica. *Tim.*
Matlaltzinco. *Ot.*
Matlame. *Ot.*
Mattamuskeet. *Alq.*
Mattapony. *Alq.*
Mattoal. *Ath.*
Mauvais-Monde. *Ath.*
Maya. *My.*
MAYAN. *My.*
Mayapan. *My.*
Maya-Quiche. *My.*
Mayarca. *Tim.*
Mayáyu. *Mar.*
Mayo. *Pim.*
Mazahua. *Ot.*
Mazapil. *Nah.*
Mazateco. *Zap.*
Mecos. *Ot.*
Meewoc. *Mo.*
Mehemencho. *E. Siu.*
Meherrin. *Ir.*
Meidoo. *Puj.*
Meipontsky. *E. Siu.*
Melchora. *Ulv.*
Meliseet. *Alq.*
Melona. *Tim.*
Melukitz. *Kus.*
Mengwe. *Ir.*
Menominee. *Alq.*
Mequachake. *Alq.*
Mescal. *Coh.*
Mescalero. *Ath.*
Met'how. *Salh.*
Mexicana. *Nah.*
Meztitlateca. *Nah.*

Miakan. *Coh.*
Miami. *Alq.*
Michoa. *Tar.*
Michōpdo. *Puj.*
Micikqwûtme tûnnĕ. *Ath.*
Micmac. *Alq.*
Mico. *Ulv.*
Micoñinovi. *Ho.*
Mije. *Zo.*
Mikono tûnnĕ. *Ath.*
Mimbreño. *Ath.*
Mingo. *Ir.*
Minisink. *Alq.*
Minitaree. *Siu.*
Minneconjou. *Siu.*
Minsi. *Alq.*
Misálamagūn. *Kuln.*
Mishongnovi. *Ho.*
Misisauga. *Alq.*
Missouri. *Siu.*
Mita. *Wei.*
Mitoám Kai Pomo. *Kuln.*
Miwok. *Mo.*
Mixe. *Zo.*
Mixtec. *Zap.*
Mixteca-Zapoteca. *Zap.*
Moan´auzi. *Sho.*
Moapariats. *Sho.*
Mobilian. *Mus.*
Mochilagua. *Pim.?*
Mocoso. *Tim.*
Mocossou. *Tim.*
Moctoby. *E. Siu.*
Modoc. *Lut.*
Módokni. *Lut.*
Mogollon. *Ath.*

Mohave. *Yma.*
Mohawk. *Ir.*
Mohegan. *Alq.*
Mohetan. *E. Siu.*
Mohican. *Alq.?*
Mokelumni. *Mo.*
Moki. *Ho.*
Molale. *Wlp.*
Molua. *Tim.*
Monachi. *Sho.*
Monagan. *E. Siu.*
Monahasanugh. *E. Siu.*
Monasiccapano. *E. Siu.*
Mono. *Sho.*
Monocan. *E. Siu.*
Monqui. *Yma.*
Monsey. *Alq.*
Monsoni. *Alq.*
Montagnais (1). *Ath.*
Montagnais (2). *Alq.*
Montagnard. *Ath.*
Montauk. *Alq.*
Moose. *Alq.*
Moosonee. *Alq.*
Mopan. *My.*
MOQUELUMNAN. *Mo.*
Moquelumne. *Mo.*
Moquis. *Ho.*
Moscoso. *Tim.*
Mosilian. *Alq.*
Moundbuilder. Composite. *Gp.*
Mowachat. *Wak.*
Mowhemcho. *E. Siu.*
Muclaht. *Wak.*
Muctobi. *E. Siu.*
Mukaluk. *Lut.*

Mulluck. *Kus.*
Multnoma. *Chik.*
Munsee. *Alq.*
Musakakūn. *Kuln.*
MUSKHOGEAN. *Mus.*
Muskhogee. *Mus.*
Muskoki. *Mus.*
Musquito. *Un.*
Mūtsūn. *Mo.*
Muutzizti. *Pim.*
Naas. *Gp., Chyn., Salh.?*
Nachitoches. *Cad.*
Nacu. *Kus.?*
Nadowessiwag. *Siu.*
Nagailer. *Ath.*
Nageuktormiut. *M. Esk.*
Nahauni. *Ath.*
Nahsuzi. *Pbl.*
Na'htchi. *Nat.*
Nahua. *Nah.*
Nahuatl. *Nah.*
NAHUATLAN. *Nah.*
Nahuatleca. *Nah.*
Nahyssan. *E. Siu.*
Na-isha. *Ath.*
Naktche. *Nat.*
Nakum. *Puj.*
Nakwahtoh. *Wak.*
Naltun netûnnĕ. *Ath.*
Nambé. *Tan.*
Nanaimo. *Salh.*
Nanoos. *Salh.*
Nantic. *Alq.*
Nanticoke. *Alq.*
Naolingo. *Tot.*
Napa (1). *Cop.*

Napa (2). *Yuk.*
Napetuca. *Tim.*
Narraganset. *Alq.*
Narsuk. *Gr. Esk.*
Nascapee. *Alq.*
Nasquá. *Chyn.*
Nataco. *Cad.*
Natches. *Nat.*
NATCHESAN. *Nat.*
Natchez. *Nat.*
Natchitoches. *Cad.*
Natowek. *Ir.*
Natowesieux. *Siu.*
Nātsit-Kŭtchin´. *Ath.*
Naugatuck. *Alq.*
Nauset. *Alq.*
Navaho.}
Navajo.} *Ath.*
Nawiti. *Wak.*
Nayerit. *Pim.*
Nehalim. *Salh.*
Nehantic. *Alq.*
Nehaunee. *Ath.*
Nehethawa. *Alq.*
Nenenot. *Alq.*
Nespelum. *Salh.*
Netchillirmiut. *M. Esk.*
Netela. *Sho.*
Netzicho. *Zap.*
Neusiok. *Alq.?*
Neuter. *Ir.*
Nevome. *Sho.*
New Gold Harbour. *Skit.*
Newichumni. *Mo.*
Nez Percé. *Shap.*
Nicaraos. *Nah.*

Nicassias. *Mo.*
Nicoutamuch. *Salh.*
Nihaloth. *Chik.*
Nikonha. *E. Siu.*
Nimkish. *Wak.*
Nipissing. *Alq.*
Nipmuc. *Alq.*
Nipnet. *Alq.*
Niquiran. *Nah.*
Nīshinam. *Puj.*
Nisqualli. *Salh.*
Nitinaht. *Wak.*
Niwiti. *Wak.*
Noema. *Cop.*
Noje. *Yan.*
Nomlaki. *Cop.*
Nommuk. *Cop.*
Nootka. *Wak.*
Norelmuk. *Cop.*
Normuk. *Cop.*
Norridgewock. *Alq.*
Notchee. *Nat.*
Notoánaiti. *Mar.*
Nottoway. *Ir.*
Noyùki. *Cop.*
Nozi. *Yma.*
Nuchalaht. *Wak.*
Nugumiut. *M. Esk.*
Nuksahk. *Salh.*
Numpali. *Mo.*
Num´su. *Cop.*
Nunatogmiut. *Alk. Esk.*
Nuncock. *Siu.*
Nunivagmiut. *Alk. Esk.*
Nuntaly. *Un., E. Siu.?*
Nuntaneuck. *Un., E. Siu.?*

Nusdalum. *Salh.*
Nushagagmiut. *Alk. Esk.*
Nusulph. *Salh.*
Nūtchu. *Mo.*
Nūtha. *Sho.*
Nutka. *Wak.*
Nuwungmiut. *Alk. Esk.*
Oathcaqua. *Tim.*
Occaneechi. *E. Siu.*
Ochíngita. *Mar.*
Ocotlano. *Zap.*
Oenock. *E. Siu.*
Ogalalla.} *Siu.*
Oglála. }
Oglemiut. *Alk. Esk.*
Ohiat. *Wak.*
Ojadagochroene. *E. Siu.*
Ojibwa. *Alq.*
Okahoki. *Alq.*
Okeeogmiut. *Alk. Esk.*
Okinagan. *Salh.*
Okkiosorbik. *Gr. Esk.*
Okomiut. *M. Esk.*
Olamentke. *Mo.*
Olelato. *Cop.*
Olhone. *Mo.*
Olla. *Puj.*
Olmeca. *Un., Mex.*
Olowidok. *Mo.*
Olowit. *Mo.*
Olowiya. *Mo.*
Olposel. *Cop.*
Oluláto. *Cop.*
Olumpali. *Mo.*
Omaha. *Siu.*
Onathcaqua. *Tim.*

Onava. *Pim.*
Oneida. *Ir.*
Onochaquara. *Tim.*
Onondaga. *Ir.*
Ontponas. *E. Siu.*
Oohenopa. *Siu.*
Opata. *Pim.*
Opatoro. *Ln.*
Opechisaht. *Wak.*
Openango. *Alq.*
Opuhnarke. *Alq.*
Oraibe. *Ho.*
Orarian. *Alk. Esk.*
Orejone. *Coh.*
Orista. *Cso.*
Orotina. } *Cpn.*
Orotinan.}
Osage. *Siu.*
Osile. *Tim.*
Otaki. *Puj.*
Otari. *Ir.*
Otayachgo. *Alq.*
Oto. } *Siu.*
Otoe.}
Otomi. *Ot.*
OTOMIAN. *Ot.*
Ottawa. *Alq.*
Ounángan. *Esk.*
Oustaca. *Tim.*
Owilapsh. *Ath.*
Paanese. *E. Siu.*
Paboksa. *Siu.*
Pacaos. *Coh.*
Pachenaht. *Wak.*
Pachera. *Pim.*
Pacuâche. *Coh.*

Padlimiut. *M. Esk.*
Paduca. *Gp.*
Paguate. *Kers.*
Pah Ute.}
Pai Ute.} *Sho.*
Paiuti. }
Pajalate. *Coh.*
Pakamalli. *Pal.?*
Pakawá. *Coh.*
Palaihnih. *Pal.*
PALAIHNIHAN. *Pal.*
Palaik. *Pal.*
Palenque. *My.*
Paléumni. *Sho.*
Palligawonap. *Sho.*
Paloos. *Shap.*
Paluxsi. *E. Siu.*
Pamaque. *Coh.*
Pamawaioc. *Alq.*
Pame. *Ot.*
Pamlico. *Alq.*
Pampopa. *Coh.*
Pamticoke. *Alq.*
Pamunkey. *Alq.*
Pani. *Cad.*
Panpakan. *Puj.*
Pantasma. *Ulv.*
Panteco. *My.*
Papabuco. *Zap.*
Papago. *Pim.*
Parrastah. *Ulv.*
Paskagula. *Siu.*
Pasquotank. *Alq.*
Passamaquoddi. *Alq.*
Pastancoya. *Coh.*
Patacale. *Coh.*

Patawat. *Wish.*
Patáwe. } *Cop.*
Patcháwe.}
Patchica. *Tim.*
Patshenin. *E. Siu.*
Patwin. *Cop.*
Paugusset. *Alq.*
Paupákan. *Puj.*
Pausane. *Coh.*
Pavant. *Sho.*
Paviotso. *Sho.*
Pawnee. *Cad.*
Paya. *Un.*
Payseya. *Coh.*
Pea. *Alq.*
Pecos. *Pbl.*
Pedee. *E. Siu.*
Pehtsik. *Qor.*
Pekwan. *Wei.*
Pend d'Oreille. *Salh.*
Penobscot. *Alq.*
Pennacook. *Alq.*
Pentlash.} *Salh.*
Pentlatc.}
Peoria. *Alq.*
Pequot. *Alq.*
Pericu. *Yma.*
Perquiman. *Alq.*
Peten. *My.*
Piankishaw. *Alq.*
Picuris. *Tan.*
Pi Ede. *Sho.*
Piegan. *Alq.*
Pihique. *Coh.*
Pilingmiut. *M. Esk.*
Pima. *Pim.*

PIMAN. *Pim.*
Pinal Coyotero. *Ath.*
Pinome. *Zo.*
Pintahae. *E. Siu.*
Pipile. *Sho.*
Piqua. *Alq.*
Pirinda. *Ot.*
Piros. *Tan.*
Piscataway. *Alq.*
Pisquow. *Salh.*
Pitkachì. *Mar.*
Pitt River. *Pal.*
Pi Ute. *Sho.*
Poam Pomo. *Kuln.*
Pocomtock. *Alq.*
Podunk. *Alq.*
Poélo. *Sho.*
Pohállin Tinleh. *Mar.*
Pohonichi. *Mo.*
Pojoaque. *Tan.*
Pokomam. *My.*
Pokonchi. *My.*
Poluksalgi. *E. Siu.*
Pomo. *Kuln.*
Pomouik. *Alq.*
Ponca. *Siu.*
Ponderay. *Salh.*
Popoluca. *Gp., Mex.*
Poquonnoc. *Alq.*
Potanou. *Tim.*
Poteskeet. *Alq.*
Potlapigua. *Pirn.*
Pottawatomi. *Alq.*
Pottawattomi. *Alq.*
Powhattan. *Alq.*
Pueblito. *Kers.*

Pueblo. *Pbl.*
PUEBLOAN. *Pbl.*
Pujunan. *Puj.*
Pujuni. *Puj.*
Pulairih. *Pal.*
Punyeestye. *Kers.*
Punyekia. *Kers.*
Pusityitcho. *Kers.*
Pusúna. *Puj.*
Putum. *My.*
Puyallup. *Salh.*
Qagutl. *Wak.*
Qaumauangmiut. *M. Esk.*
Qinguamiut. *M. Esk.*
Quaitso. *Salh.*
Quapaw. *Siu.*
Quatquiutl. *Wak.*
Quatsino. *Wak.*
Quekchi. *My.*
Queniut. *Salh.*
Queptlmamish. *Salh.*
Querechos. *Un., Sho.?*
Queres. *Kers.*
Quiahanless. *Skit.*
Quiche. *My.*
Quile-Ute. *Chi.*
Quinnebaug. *Alq.*
Quinnipiac. *Alq.*
Quinpi. *Alq.*
Quivira. *Un., Siu.?*
Quoddy. *Alq.*
QUORATEAN. *Qor.*
Quoratem. *Qor.*
Qwinctûnnetûn. *Ath.*
Rama. *Un.*
Ramapoo. *Alq.*

Ramcock. *Alq.*
Reho. *Un.*, *Cali.*
Republican Pawnee. *Cad.*
Riccaree. *Cad.*
Rickohockan. *Ir.*
Rikwa. *Wei.*
Rogue River. *Ath.* and *Tak.*
Runsien. *Gp.*
Rurok. *Wei.*
Saagit. *Wei.*
Sabaquis. *Pim.*
Sabaibo. *Nah.*
Sac. *Alq.*
Sac and Fox. *Alq.*
Sacumehu. *Salh.*
Sagdlirmiut. *M. Esk.*
Saharipa. *Pim.*
Sahewamish. *Salh.*
Sahkey. *Alq.*
Saiaz. *Ath.*
Saidyuka. *Sho.*
Saint Regis. *Ir.*
Saiwash. *Sas.*
Sakaiakumni. *Mo.*
SALINAN. *Sli.*
Salish. *Salh.*
SALISHAN. *Salh.*
Saluda. *Alq.?*
Samamish. *Salh.*
Samish. *Salh.*
San Antonio. *Un.*
Sandia. *Tan.*
Sanetch. *Salh.*
San Felipe. *Kers.*
Sanhican. *Alq.*
San Ildefonso. *Tan.*

Sanipao. *Con.*
San Juan. *Tan.*
San Juan de Guacara. *Tim.*
San Mateo. *Tim.*
San Rafael. *Mo.*
Sans Arcs. *Siu.*
Sans Puell. *Salh.*
Santa Ana. *Kers.*
Santa Barbara. *Sli.*
Santa Clara, New Mexico. *Tan.*
Santa Clara, Utah. *Sho.*
Santa Cruz, Cali. *Mo.*
Santa Elena. *Cso.*
Santa Inez. *Sli.*
Santa Lucia de Acuera. *Tim.*
Santee. *E. Siu* and *Siu.*
Santiam. *Kal.*
Santo Domingo. *Kers.*
Saponi. *E. Siu.*
Saps. *E. Siu.*
Saptin. *Shap.*
Sara. *E. Siu.*
Sarcees. *Ath.*
Saste. *Sas.*
SASTEAN. *Sas.*
Satsika. *Alq.*
Satsop. *Salh.*
Saturiwa. *Tim.*
Sauk. *Alq.*
Saumingmiut. *M. Esk.*
Sauteux. *Alq.*
Savanna. *Alq.*
Sawákhtu. *Mar.*
Sawamish. *Salh.*
Saxapahaw. *E. Siu.*
Sayúskla. *Ykn.*

Scatacook. *Alq.*
Sebasa. *Wak.*
Secoffie. *Alq.*
Secotan. *Alq.*
Seemunah. *Kers.*
Seguas. *Nah.*
Sekamish. *Salh.*
Sekumne. *Puj.*
Selawigmiut. *Alk. Esk.*
Selish. *Salh.*
Seminole. *Mus.*
Seneca. *Ir.*
Senecú. *Tan.*
Senel. *Kuln.*
Sequas. *Nah.*
Seri. *Ser.*
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THE SWASTIKA
A primitive and universal sign

FOOTNOTES:

[1] See the last chapter.

[2] See linguistic map p. 33, and list of tribes and stocks in Appendix.

[3] When the ice front was along the Ohio, the Eskimo naturally were distributed along the southern fringe.

[4] For many details of the life of the American Indians, or Amerinds, see *The Indians of To-Day*, by George Bird Grinnell. For the origin of the word Amerind see the *American Anthropologist*, N. S., vol. i., No. 3, p. 582.

[5] It must be borne in mind that the general estimate of the Amerind is entirely drawn from white men's writings. The Amerind side has never been presented.

[6] *Narrative of James P. Beckwourth*, p. 254; Irving's *Bonneville*, p. 225.

[7] "Amidst all the devastating incursions of the Indians in North America it is a remarkable fact that no Friend who stood faithful to his principles in the disuse of all weapons of war, the cause of which was generally well understood by the Indians, ever suffered personal molestation from them," vol. v., p. 63, Brinton's *Library of Am. Ab. Literature*, from *An Account of the Conduct of the Society of Friends toward the Indians*, p. 72. London, 1844.

[8] Payne says, "Anahuac was becoming a military despotism." *History of the New World called America*, vol. ii., p. 494.

[9] See Preface and the last chapter.

[10] Brinton's "Uto-Aztecan." The connection between the Nahuatl, or Aztec, and Shoshonean is not well established.

[11] Lewis H. Morgan, *Houses and House Life*, Dr. W. J. McGee has added a fourth stage, "Enlightenment."

[12] For a full statement of this story, see the fascinating book, *Atlantis: The Antediluvian World*, by Ignatius Donnelly.

[13] See Chap. XVI. and also the Preface.

[14] The widest differences were in the Maya and the

Timuquanan. Each of these differed greatly from the bulk of the Amerind languages and from each other, probably because both stocks held more isolated positions than the others during the glacial period, and preserved more of their earlier life, whatever it may have been.

[15] See J. N. B. Hewitt, *American Anthropologist*, October, 1893.

[16] "There are well-known examples in the ethnography of other races, where reliance on language alone would lead the investigator astray; but all serious students of the native American tribes are united in the opinion that with them no other clue can compare to it in general results."—D. G. Brinton, *The American Race*, Preface.

[17] As to the value of linguistics as a means of classification, Cyrus Thomas says: "On the one side, it is held by some authors that affinity of languages implies racial identity or unity of origin; on the other, it is contended that the theory that the affinity of languages necessarily implies identity of race is not warranted."

[18] D. G. Brinton, *The American Race*. He does not approve wholly of these terminations.

[19] *Seventh Annual Report, U. S. Bureau of Ethnology*, contains complete list of American race stocks, north of Mexico, as far as known. See Appendix.

[20] *Essays of an Americanist*, p. 35.

[21] Hopi is the singular; Hopituh the plural. Dr. Fewkes and others having decided in favour of the singular form, it is so given here.

[22] They have intermarried with the Hopi and Navajo till Fewkes believes that in "the next generation the percentage of pure Tañoan blood will be so small that we cannot regard the stock as Tañoan."—*American Anthropologist*, April, 1894, p. 167.

[23] See Chap. XVI.

[24] *The American Race* and *Chronicles of the Maya*.

[25] For further coincidences see Payne, *History of the New World Called America*, vol. ii., p. 78, *et seq*.

[26] See the *American Anthropologist*, July, 1894, vol. vii., "The Chinook Jargon," by Myron Eells.

[27] *Snake Dance of the Mokis*, p. 190.

[28] There are analogies between the Nahuatl and some languages of the North-west and Alaska, especially that of the Koluschan, or Tlinkit, living along the sea from Dixon Entrance to Prince William Sound.

[29] The Maya, however, has been found a useful language by Europeans. Dr. Berendt met "whole families of pure white blood" who used this language and did not know Spanish. This is not the usual fate of the Amerind tongues.

[30] This word was popularly written Esquimaux, after the French. Then the Bureau of Ethnology wrote it Eskimo, and this has been the accepted spelling and pronunciation. But it is from the Abnaki dialect of Algonquin, according to Brinton (*The American Race*, p. 59), and is properly Eskimwhan. This is better represented by Eskimä than by Eskimo.

[31] See the list of stocks in the Appendix.

[32] "Their language was reduced to writing some sixty years ago and has now a considerable literature. Nearly all the men of the tribe are able to conduct personal correspondence in their own language."—Mooney, *American Anthropologist*, N. S., vol. i., No. 1, p. 137, 1899.

[33] The "l" like "cl" in "exclaim."

[34] See also Payne's *History of the New World*, vol. ii., p. 96 *et seq.*, for an excellent discussion of Amerind languages.

[35] "Cherokee Formulas," Mooney, *Seventh Ann. Rept. Bu. Eth.*

[36] For a complete presentation of the subject of sign-language, see paper by Garrick Mallery, *First Ann. Rept. Bu. Eth.*, and for that of picture-writing see *Tenth Ann. Rept.*, a paper by same author, and one in *Fourth Ann. Rept.*

[37] Note in Preface and last chapter statement as to irregularity of culture progress.

[38] The Mayas, however, had passed the zenith of their development.

[39] "Etching" is the word commonly used, but as etching is a totally different thing it has no place in this

connection, and only adds to the incongruities already existing in writings on the Amerind subject.

[40] *Painted* characters are found in southern California, west and south-west of Sierra Nevada; *painted* and *scratched*, from Colorado River to Georgia, north to West Virginia and along the Mississippi. Remaining parts of United States show rock scratchings almost exclusive of paintings, according to Mallery.

[41] The name applied by the Pai Utes to the old Puebloans.

[42] That is, the rock faces change slowly. Other changes may occur, as, for instance, the foothold from which the pictures were made. I remember seeing in Keam's Canyon, Arizona, some pictographs on a cliff wall that were far above reach, ten or twelve feet above my head. My explanation was that the ground had been washed away after they were made.

[43] I say "type," because the Pueblo culture was not confined to one stock. "Puebloan" may be used to designate them.

[44] A rock near Yarmouth, Nova Scotia, is inscribed with characters supposed to be Runic, which have been translated by Phillips, "*Harkussenmen varu*" = "Harko's son addressed the men." The Dighton inscription was read as an account of the party of Thorfinn, while other interpreters have made out Scythian and Phœnician characters. It is possible that there may have been a few Runic characters mingled with the Algonquian on the Dighton Rock.

[45] For a full account of the Walam Olum, see Brinton's "The Lenapé and their Legends," in vol. v. of his *Library of American Aboriginal History*.

[46] The pronunciation of this word always sounded to me "*kat-chee´-nah*," but Dr. Fewkes eliminates the "h" sound from this and other words, and as he has devoted much attention to the subject I follow his spelling.

[47] See Brinton, *Essays of an Americanist*, p. 213.

[48] At Newark, Ohio, a business was carried on in the manufacture of inscribed stones, buried and dug up to suit occasion.

[49] See "A Remarkable Counterfeiter" by A. E. Jenks,

American Anthropologist, April-June, 1900.

[50] J. T. Goodman, *Biologia Centrali Americana*, part ix., p. 11.

[51] The Sauk, of Algonquian stock, "have a syllabic alphabet, apparently the work of some early French missionary, by means of which they keep up a correspondence with friends on their various scattered reservations."—Mooney, *American Anthropologist*, January, 1899, p. 143.

[52] For an explanation of the Lost Tribes theory see Payne's *History of the New World Called America*, vol. ii., p. 75 *et seq.*

[53] Finally, after 1714, the machine-made beads grew in favour, because the supply of native beads diminished with the diminution of the number of Amerinds. These machine-made beads were of uniform size, while the native beads varied considerably. See Horatio Hale, *Pop. Sci. Monthly*, February, 1897.

[54] "The best blanket-makers, smiths, and other artisans among the Navajos are the descendants of captives from Zuñi and other Pueblos."—J. G. Bourke, *Jour. Am. Folk-Lore*, p. 115.

[55] Garrick Mallery, *Fourth Ann. Rept. Bu. Eth.*

[56] Mallery, *Fourth Ann. Rept. Bu. Eth.*

[57] See "The Mountain Chant," by Washington Matthews, *Fifth Ann. Rept. Bu. Eth.* The dry-paintings also occur in the "Yebitchai" ceremony, described by James Stevenson, *Eighth Ann. Rept. Bu. Eth.*

[58] "Pictographs of the feathered, horned serpent are also found on the cliff to the south-west of Walpi. These pictographs have the head, with a representation of a horn and feathers, and the same conventionalised markings of parallel lines and arrow-points which are found on the kilts of the Snake priests."—Fewkes, *Journal of American Ethnology*, vol. ii., p. 38.

[59] *Thirteenth Ann. Rept. Bu. of Eth.*, p. 92.

[60] By Dr. Nicolas Leon. *Science*, Jan. 27, 1899, p. 156. Still another lately turned up in possession of an English gentleman.

[61] "They may have passed through some of the same stages of growth, but the general consensus of opinion is

that the Mayan is the older of the two classes, and that these two classes have developed independently."—Thomas, *Study of American Archæology*, p. 360.

[62] P. 213 *et seq.*

[63] Several have recently been splendidly reproduced and may be found at large libraries.

[64] Suggested by the Abbé Brasseur.

[65] Egypt had three kinds of writing.

[66] *Biologia Centrali Americana*, part ix., p. 11.

[67] For a fac-simile of part of the Landa MS. and bibliographic notes on Mayan and Mexican writing see *Winsor's Nar. and Crit. Hist. of the U. S.*, vol. i., p. 197.

[68] See the Preface, p. vii., and the last chapter.

[69] Cyrus Thomas, Introduction to *Study of American Archæology*, p. 361.

[70] *Ibid.*, p. 343.

[71] *Queen Moo*, by A. Le Plongeon, p. xv.

[72] Pp. 95 and 100.

[73] The "Codex Cortesianus is considered to furnish a connecting link between Maya and Mexican symbols."—Powell.

[74] Written in 1558. An abridgment of an older book.

[75] Goodman gives these three signs for 20  and remarks, "the last of the three being drawn with a great variety of detail."—*Biologia Centrali Americana*, part viii., p. 64.

[76] *Sixth Ann. Rep. Bu. Eth.*, p. 337.

[77] See the monumental work on basketry by Otis T. Mason, and other writings on this subject by the same author.

[78] See the *American Anthropologist*, April, 1894, vol. vii., "The Basket Drum," by Washington Matthews, as an illustration of how a certain specialty in an art may survive after the art itself is neglected.

[79] Murdoch found fragments of a cooking pot at Point Barrow.—*Ninth Ann. Rept. Bu. Eth.*, p. 91. Rude cups were also sometimes made.

[80] *Thirteenth Ann. Rept. Bu. Eth.*, p. 276.

[81] W. H. Holmes, *Fourth Ann. Rept. Bu. Eth.*, "Pottery of the Ancient Pueblos."

[82] The Amerind paste was generally quite dark, a light surface colour being obtained by a "slip." But I have found fragments of a pinkish-white ware in Arizona the same colour all the way through.

[83] The earthenware of the Greeks and Romans was not glazed, but covered with wax, bitumen, etc.

[84] With all the differences, however, an examination of pottery from all over North America will convince any close observer of its general homogeneity.

[85] W. H. Holmes, "Ancient Pottery of the Mississippi Valley," *Fourth Ann. Rept. Bu. Eth.*, p. 372.

[86] W. H. Holmes, "Ancient Art of the Province of Chiriqui," *Sixth Ann. Rept. Bu. Eth.*, p. 56.

[87] F. S. Dellenbaugh, "Death-Masks in Ancient American Pottery," *American Anthropologist*, February, 1897.

[88] In this connection it may be mentioned that Swallow found a human skull enclosed in an earthen jar, the opening of which was too small to admit of the skull's extraction.

[89] W. H. Holmes, "Prehistoric Textile Fabrics," *Third Ann. Rept. Bu. Eth.*; *Ibid.*, "Prehistoric Textile Art," *Thirteenth Ann. Rept. Bu. Eth.*

[90] F. S. Dellenbaugh, "Fabric-Marked Pottery," *Popular Science Monthly*, March, 1898.

[91] Brinton states that the art of the potter was extensively practised by the Lenapé, but if this were accurate fragments of pottery ought to be commoner than they are in the region formerly their home.

[92] Compare Preface and last chapter.

[93] M. H. Saville, "Exploration of Zapotecan Tombs in Southern Mexico," *American Anthropologist*, N. S., April, 1899.

[94] *American Anthropologist*, N. S., 1899, i., p. 355.

[95] W. H. Holmes, "Ancient Art of the Province of Chiriqui," *Sixth Ann. Rept. Bu. Eth.*

[96] W. H. Holmes, "Ancient Art of the Province of Chiriqui," *Sixth Ann. Rept. Bu. Eth.*

[97] Rib is the term applied by our potters to the small thin pieces of wood used for smoothing the ware. The Moki "rib" corresponds closely in size, shape, and use to that I have seen employed by our potters.

[98] For soapstone or steatite vessels, see Chap. X.

[99] Hoffman, *Fourteenth Ann. Rept. Bu. Eth.*, p. 260.

[100] Holmes, *Thirteenth Ann. Rept. Bu. Eth.*, p. 22.

[101] Boas, *Report U. S. Nat. Museum*, p. 319.

[102] Gibbs, *U. S. G. S., Contrib. to N. A. Ethnology*, vol. i., part ii., p. 219.

[103] National Academy of Sciences, *Bones of the Hemenway Expedition*, Introduction by Washington Matthews, p. 157.

[104] See for description of kiva the chapter in this book on Architecture, etc., and also Macmillan's *Dictionary of Architecture*.

[105] Dr. Washington Matthews, "Navajo Weavers." *Third Ann. Rept. Bu. Eth.*, p. 375.

[106] Washington Matthews, *Third Ann. Rept. Bu. Eth.*, p. 377.

[107] Some of the finest Navajo blankets command high prices. A two faced blanket is described by Matthews in the *American Anthropologist*, vol. ii., No. 4.

[108] Bandelier, *Final Report*, part i., p. 158.

[109] Prescott's *Mexico*, vol. i., pp. 439, 442.

[110] *Ibid.*, vol. ii., p. 13.

[111] *Ibid.*, p. 71.

[112] The *timatli* or *tilmatli* for men was a piece of cloth, according to Biart, "four feet long, which enveloped the body, and two corners of which were knotted upon the breast or upon the shoulder."

[113] *Ibid.*, p. 73.

[114] Du Pratz, *Hist. de la Louisiane*, vol. ii., pp. 191, 192.

[115] Prescott's *Mexico*, vol. ii., pp. 133, 134.

[116] Lucien Biart, *The Aztecs*.

[117] Squier, *Nicaragua*, p. 289.

[118] *The History of Erie County, N. Y.*, pp. 58, 59, edited by H. Perry Smith.

[119] Quoted in Captain Simpson's *Report*, p. 494.

[120] Buckingham Smith's translation.

[121] Lieutenant Mowry, *Report*, p. 587, Ex. Doc. No. 11, 35th Cong., 1st Session.

[122] John W. De Forrest, *History of the Indians of Connecticut*, pp. 9–11.

[123] Catlin had wonderful success in persuading Amerinds to pose for him. When I went amongst the Navajos and Mokis in 1884–85 I found it next to impossible to get them to sit for me. Only one solitary specimen in the whole region was willing to run the risk. It was considered very "bad medicine."

[124] The Crows, Sioux, Mandans, and Assiniboins are the same stock—the Dakota or Siouan.

[125] Catlin, *Smithsonian Report*, 1885, pp. 450, 451.

[126] Dorsey, "Omaha Sociology," *Third Ann. Rept. Bu. Eth.*, p. 310.

[127] Geo. Gibbs, "Tribes of Western Washington and North-western Oregon," *U. S. G. S. Contrib.*, vol. i., part ii., p. 220.

[128] *Ibid.*, p. 219.

[129] *Ibid.*, p. 176.

[130] The same kind of a wicker cap is worn by many California Amerinds.

[131] Cushing says of the early Zuñis: "They wore but scant clothing besides their robes and blankets—breech-cloths and kilts, short for the men, long for the women, and made of shredded bark and rushes or fibre; sandals also of fibre.... The hair was bobbed to the level of the eyebrows in front, but left long and hanging at the back, etc."—*Thirteenth Ann. Rept. Bu. Eth.*, p. 358.

[132] "Coronado Letter," *Fourteenth Ann. Rept. Bu. Eth.*, p. 562.

[133] "Narrative of Jaramillo," *Ibid.*, pp. 586, 587.

[134] "Relación Postrera de Sívola," *Ibid.*, p. 569.

[135] C. MacCauley, "Seminole Indians of Florida," *Fifth Ann. Rept. Bu. Eth.*, p. 486.

[136] *Memoirs Long Island Hist. Soc.*, vol. i., p. 99, "Journal of a Voyage to New York in 1679–80."

[137] See chapter on Weapons, and note also the quotation from Prescott—pp. 134 and 136.

[138] James Mooney, "The Ghost-Dance Religion," *Fourteenth Ann. Rept. Bu. Eth.*, pp. 789, 790; see also Chap. IX., this work.

[139] Murdoch, "The Point Barrow Eskimo," *Ninth Ann. Rept. Bu. Eth.*; Boas, "The Central Eskimo," *Sixth Ann. Rept. Bu. Eth.*; Turner, "Hudson Bay Eskimo," *Eleventh Ann. Rept. Bu. Eth.*

[140] Murdoch.

[141] Dr. Kane, *Arctic Exploration*, vol. i., p. 203.

[142] John D. Hunter, *Memoirs of a Captive among the Indians of North America*, London, 1823, pp. 289, 290.

[143] Sometimes two high poles are set up, between which, at a potlatch or "grease feast," the piles of blankets forming payment for a "copper" are laid. These are called "blanket-poles."

[144] There is a fine specimen in the American Museum of Natural History, New York.

[145] See *Tenth Ann. Rept. Bu. Eth.*, p. 478.

[146] W. H. Dall, *Third Ann. Rept. Bu. Eth.*, p. 112.

[147] Franz Boas, "The Kwakiutl Indians," *Rep. Nat. Mus.*, 1895, pp. 323, 324.

[148] Franz Boas, "The Kwakiutl Indians," *Rep. Nat. Mus.*, 1895, pp. 370, 371.

[149] *Ninth Ann. Rept. Bu. Eth.*

[150] *Sixth Ann. Rept. Bu. Eth.*

[151] Chap. V., and *American Anthropologist*, February, 1897.

[152] *Prehistoric Art*, p. 477.

[153] Joseph D. McGuire, "American Aboriginal Pipes," *Rep. Nat. Mus.*, 1897, p. 468.

[154] H. W. Henshaw, "Animal Carvings," *Second Ann. Rept. Bu. Eth.*, p. 166.

[155] Warren K. Moorehead, *The Bird-Stone Ceremonial* (pamphlet).

[156] The Pai Utes make rude clay and wood dolls, but nothing larger, and no pottery.

[157] A. F. Bandelier, *Final Report*, p. 152.

[158] A. F. Bandelier, *Final Report*, p. 153.

[159] *Ibid.*, p. 161.

[160] A painted design, similar to that of the "Calendar Stone," was found on one of the inside walls at Mitla. See pl. xxv., Fig. 1, Bandelier's *Archæological Tour*.

[161] A compass card has five concentric circles, and the Calendar Stone appears to have the same number. The compass was known in Europe in the twelfth century, in China earlier.

[162] A. F. Bandelier, *Report of an Archæological Tour in Mexico*, p. 78.

[163] Two structures at Palenque are so called on account of the tablets in them bearing emblems that resemble a cross. In that designated by Stephen as No. 2, by Charnay later as No. 1, and by H. H. Bancroft as No. 4, the cross form is the more pronounced, and it is the one usually referred to by the above title.

[164] For the exterior of the Temple of the Sun, see Frontispiece.

[165] Leonhard Stejneger, "Poisonous Snakes of North America," *Rep. U. S. Museum*, 1893, p. 421.

[166] Edward S. Holden, "Studies in Central American Picture-Writing," *First Ann. Rept. Bu. Eth.*, p. 229.

[167] Charnay found at Palenque that some of the figures were modelled first nude and draperies applied afterwards, the latter separating from the figure itself.

[168] Desiré Charnay, *Ancient Cities of the New World*.

[169] "Ancient Art of the Province of Chiriqui," *Sixth Ann. Rept. Bu. Eth.*, p. 27.

[170] For definitions of aboriginal architecture, see Macmillan's *Dictionary of Architecture*.

[171] Bandelier, *Final Report*, part i., p. 103.

[172] Or, if the climate should change, the character of the house might change with it.

[173] For full information on Dakota customs, etc., see the papers of the late Rev. James Owen Dorsey in the third, eleventh, thirteenth, and fifteenth *Ann. Repts. Bu. Eth.*

[174] Wigwam is frequently used in a general sense to designate any Amerind house of the skin or earth or

wood type.

[175] See “ti” and “pi” in *Dakota-English Dictionary*, vol. vii.; *Cont. U. S. G. S.*, pp. 421, 467.

[176] Lewis H. Morgan, “Houses and House Life of the American Aborigines,” *Contributions to N. A. Ethnology*, vol. iv., p. 114.

[177] Castañeda describes the Querechos and Teyas in 1540 as travelling, “like the Arabs, with their tents and troops of dogs loaded with poles, and having Moorish pack-saddles and girths.”—Winship’s translation, *Fourteenth Ann. Rept. Bu. Eth.*, p. 527.

[178] Morgan’s “Houses and House Life,” etc., p. 113.

[179] W. J. Hoffman, “The Menominee Indians,” *Fourteenth Ann. Rept. Bu. Eth.*, pp. 254–55.

[180] The Lenapé houses “were built in groups and surrounded with a palisade.... In the centre was sometimes erected a mound of earth, both as a place of observation and as a location to place the children and women.”—Brinton, *The Lenapé*, p. 51.

[181] Cyrus Thomas, “Mound Explorations,” *Twelfth Ann. Rept. Bu. Eth.*, p. 647.

[182] *Ibid.*, p. 649.

[183] Cyrus Thomas, *Twelfth Ann. Rept. Bu. Eth.*, p. 653.

[184] Francis Parkman, *Discovery of the West*, p. 277.

[185] George Bancroft, *U. S. History*.

[186] L. H. Morgan, *Houses and House Life*, p. 120; see also *The Iroquois League*, by Morgan.

[187] Brinton, *The American Race*, p. 77.

[188] Gibbs cites a split plank he saw in Puget Sound region, 24 feet long and 4½ feet wide.

[189] Gibbs mentions a house of the Makah, north-west Washington, 75 feet long, 40 wide, and 15 high, all one room; and another used for festivals 520 feet long, 60 feet wide, 15 feet high in front, and 10 feet in the rear. —George Gibbs, “Tribes of Western Washington and North-western Oregon,” *Contributions U. S. G. S.*, vol. i., p. 215.

[190] Stephen Powers, “Tribes of California,” *Contributions*, etc., vol. iii., p. 255.

[191] *Ibid.*, p. 215.

[192] *Ibid.*, p. 45.

[193] W. H. Dall, "Tribes of Alaska," *Contributions U. S. G. S.*, vol. i., p. 82.

[194] The tree growth ceases at about the line of the village of Kodiak on Kodiak Island. The Aleuts ranged over the Aleutian Islands and eastward as far as Stepovak Bay on the peninsula.

[195] For definitions of these terms see Macmillan's *Dictionary of Architecture*.

[196] Schwatka found cliff-dwellings occupied by Tarahumaris in northern Mexico. See *Cave and Cliff-Dwellers*, by Frederick Schwatka, p. 187.

[197] In early days upper stories in New Mexico were sometimes built of wood, plastered.

[198] For details of Pueblo architecture, see paper on the subject by Victor Mindeleff, *Eighth Ann. Rept. Bu. Eth.* And "The Cliff Ruins of Canyon de Chelly," by Cosmos Mindeleff, *Sixteenth Ann. Rept. Bu. Eth.*

[199] See Macmillan's *Dictionary of Architecture*.

[200] See paper by Cosmos Mindeleff, "Aboriginal Remains of the Verde Valley," *Thirteenth Ann. Rept. Bu. Eth.*

[201] See illustrations, pp. 225, 227, 228.

[202] See the writings of Geo. H. Pepper, director of the Hyde Expedition.

[203] *Commerce of the Prairies.*

[204] See Macmillan's *Dictionary of Architecture*. Kiva is a Moki term to replace the Spanish estufa, which is misleading. The kiva is not a sweat house, as the Spanish term seems to imply. A sweat house or lodge is expressly built and heated for the purpose of a sweat bath.

[205] See *Mem. Nat. Acad. Sciences*, vii., p. 146. Introduction by Washington Matthews.

[206] "And have five or six stories, three of them with mud walls and two or three with thin wooden walls."—"Relacion del Suceso," *Fourteenth Ann. Rept. Bu. Eth.*, p. 575.

[207] Littré gives *pisé* as "made with a species of large bricks made in wooden moulds"; *piser*, "to construct by

beating earth between two planks."

[208] Prescott, *Mexico*, i., p. 474.

[209] *Ibid.*, ii., p. 70.

[210] *Ibid.*, ii., p. 110.

[211] Prescott, *Mexico*, ii., p. 109.

[212] *Voyages of Vancouver*, ii., p. 274.

[213] Morgan, *House Life*, p. 231. For the houses and house life of some modern cave and cliff dwellers see *Unknown Mexico*, by Carl Lumholtz.

[214] M. H. Saville, "Temple of Tepoztlan," *Monumental Records*, i., No. 1.

[215] Goodman in *Biologia Centrali Americana*. From an inscription on the back of the "Yucatec Stone" 10,731 years back to the date of an action represented on the front of the stone from 1895.

[216] Cyrus Thomas (*American Anthropologist*, July, 1899) says: "Here we see the culmination of Mayan art." There are several terraces, but one is so large as to eclipse the others.

[217] Viollet-le-Duc thinks these buildings and the Maya ones originated in wooden structures. For details of construction, see Bandelier's *Archæological Tour in Mexico*.

[218] For mining operations see Chap. X.

[219] The Lenapé had arrow-heads and pipes made of copper. See Abbott's *Primitive Industry*.

[220] The Amerind muscles that came into play in bow shooting were so highly developed that a white man untrained could not half pull a bow that a generally weaker Amerind could pull with ease.

[221] Hoffman (*Fourteenth Ann. Rept. Bu. Eth.*, p. 281) describes similar bows found in Arizona and Nevada, three feet long, but made of wood in a composite way.

[222] Hough says he has often made fire in thirty seconds with the palm-drill and in five seconds with the bow-drill.—*National Museum Report*, 1888, p. 531.

[223] See chapter on Customs for a quotation from Prescott describing the festival of the new-fire.

[224] The Iroquois rigged large pump-drills out of saplings.

[225] Hoffman denies this, *Fourteenth Ann. Rept. Bu. Eth.*, p. 279.

[226] For modern arrow-making among the Menominee, see *Fourteenth Ann. Rept. Bu. Eth.*, p. 275 *et seq.*

[227] It is said that a blow-gun was also used by some North American tribes. “Many of the Siouan Indians use the lance, javelin, or spear.”—McGee, *Fifteenth Ann. Rept. Bu. Eth.*, p. 171.

[228] “Primitive American Armour,” *Report of National Museum*, 1893.

[229] Bancroft, H. H., *Native Races*, vol. ii., p. 407.

[230] Veytia, *Hist. Ant. Mej.*, tom. i., pp. 289, 290; see also page 134, this book.

[231] Brinton, *The American Race*, p. 138.

[232] “The Ghost-Dance Religion,” by James Mooney, *Fourteenth Ann. Rept. Bu. Eth.*; see also Chap. VI., this book.

[233] The Utah Mormons wear an undergarment supposed to have such resistance. The idea may have come from them.

[234] James Mooney, “The Ghost-Dance Religion,” *Fourteenth Ann. Rept. Bu. Eth.*, p. 790.

[235] See Preface pages iv. and v., and also the last chapter of this book.

[236] For “Medicine Arrows of the Oregon Indians,” see A. S. Gatschet, *Journal of American Folk-Lore*, 1893.

[237] The surface flint was in bowlders and nodules.

[238] For a valuable account of stone implements of the “Potomac-Chesapeake Tidewater Province,” see paper by W. H. Holmes in *Fifteenth Ann. Rept. Bu. Eth.*; also, “The Obsidian Mines of Hidalgo, Mexico,” by the same author, *American Anthropologist*, vol. ii., No. 3, N. S.

[239] Tylor declares that it is not possible to distinguish stone weapons from one part of the world from those from any other part.

[240] From the Aztec: *metlatl*.

[241] While the Eastern Amerinds generally seem not to have known how to melt copper, some few may have experimented in a limited way with it.

[242] Walter Hough, “The Lamp of the Eskimo,” *Rep. Nat. Mus.*, 1896, p. 1028.

[243] The Amerinds of Vancouver Island were said by Captain Chase to use a lamp made of a clam shell, with oil from the whale or porpoise. The wick was bark.—Hough, p. 1039.

[244] See Castañeda’s narrative, Winship’s translation, *Fourteenth Ann. Rept. Bu. Eth.*, p. 527; and Ternaux Compans, *Relation de Castañeda*, p. 190, “ils ont de grands troupeaux de chiens qui portent leur bagage; ils l’attachent sur le dos de ces animaux au moyen d’une sangle et d’un petit bât”; also the same narrative, *Fourteenth Ann. Rept. Bu. Eth.*, p. 456.

[245] For excellent descriptions in detail of the Eskimo sledge and methods of using it, see Boas, *Sixth Ann. Rept. Bu. Eth.*, p. 529 *et seq.*; Murdoch, *Ninth Ann. Rept. Bu. Eth.*, p. 353 *et seq.*; and Turner, *Eleventh Ann. Rept. Bu. Eth.*, p. 241 *et seq.*

[246] Murdoch, *Ninth Ann. Rept. Bu. Eth.*, p. 358.

[247] O. T. Mason, “Primitive Travel,” *Rep. Nat. Mus.*, p. 566; see also p. 564; and Turner, in the *Eleventh Ann. Rept. Bu. Eth.*, p. 307.

[248] See O. T. Mason, “Primitive Travel,” *Rep. Nat. Mus.*, pp. 381–410; *Eleventh Ann. Rept. Bu. Eth.*, pp. 308–312; *Ninth Ann. Rept. Bu. Eth.*, pp. 344–352.

[249] For details of construction see Turner, *Eleventh Ann. Rept. Bu. Eth.*, p. 305; and Hoffman, *Fourteenth Ann. Rept. Bu. Eth.*, p. 292.

[250] Baidarka is the Russian term used at Kodiak and along the Alaska peninsula. Baidar = umiak; baidarka = kayak.

[251] For details of kayak and umiak construction, see Murdoch, *Ninth Ann. Rept. Bu. Eth.*, p. 328; Boas, *Sixth Ann. Rept. Bu. Eth.*, p. 527; Turner, *Eleventh Ann. Rept. Bu. Eth.*, p. 235; see, also, for hunting weapons and methods, “Aboriginal American Zoötechny,” by Otis Tufton Mason, *American Anthropologist*, N. S., vol. i., No. 1, 1899.

[252] The Omahas made one out of dried bison hides, branches, and saplings.

[253] Mines of steatite vessels have been found on

Santa Catalina Island, California, as well as on the Eastern United States coast. Charles F. Holder describes the Santa Catalina mines in the *Scientific American* for December 16, 1899.

[254] W. H. Holmes, *Fifteenth Ann. Rept. Bu. Eth.*, pp. 108, 109.

[255] For a description of these chultunes, see "The Chultunes of Labna," *Memoirs of Peabody Museum*.

[256] Champlain's *Voyages*, Prince Society edition, vol. ii., p. 236.

[257] Now in the National Museum, Washington. See article on the subject by Charles Moore, *Report of U. S. Museum*, 1895.

[258] Frank Hamilton Cushing, "Primitive Copper Working, An Experimental Study," *American Anthropologist*, O. S., vol. vii., No. 1, 1894.

[259] Fewkes found several of these bells in his excavations around the headwaters of the Gila.

[260] During my stay with the Mokis and in their vicinity and in all the long time I have been observing them, I never saw nor heard of a single object in metal wrought by them.

[261] Brinton, *The Lenapé*, p. 52.

[262] F. Boas, "The Kwakiutl Indians," *Rept. Nat. Mus.*, 1895, p. 344.

[263] Washington Matthews, "Navajo Silversmiths," *Second Ann. Rept. Bu. Eth.*, p. 171.

[264] The tribes of the North-west made some gold and silver ornaments, and at Sitka to-day there is a jewelry establishment kept by a native Tlinkit, who makes most of his own silverware.

[265] Washington Matthews, "Navajo Silversmiths," *Second Ann. Rept. Bu. Eth.*, p. 172.

[266] Prescott, *Mexico*, vol. i., p. 138.

[267] Daniel Wilson, *Prehistoric Man*, vol. i., pp. 213–215.

[268] *Ibid.*, p. 216.

[269] *Ibid.*, p. 218.

[270] Daniel Wilson, *Prehistoric Man*, vol. i., p. 222.

[271] W. H. Holmes, “Ancient Art of the Province of Chiriqui,” *Sixth Ann. Rept. Bu. Eth.*, p. 186.

[272] Brinton, *The Lenapé*, p. 53.

[273] Washington Matthews, “Navajo Weavers,” *Third Ann. Rept. Bu. Eth.*, p. 376.

[274] Squier describes a Tyrian purple of various shades secured in Nicaragua from the murex shellfish by a slow and tedious process; see his *Nicaragua*, p. 286.

[275] Dr. J. Walter Fewkes, *Journal of American Folk-Lore*, vol. ii., p. 151.

[276] Cyrus Thomas, *Sixth Ann. Rept. Bu. Eth.*, p. 271.

[277] Prescott, *Mexico*, vol. i., p. 111.

[278] *Ibid.*, p. 112. The intercalation of these 12½ or 13 days is denied by Payne, *History of the New World*, vol. ii., pp. 294–316 *et seq.*, but Mrs. Zelia Nuttall and other eminent scholars are certain they were intercalated.

[279] Goodman, *Biologia Centrali Americana*, part viii., pp. 5, 8.

[280] This bell is supposed, however, to have developed here from the rattle.

[281] The Peabody Museum contains an exhibit of forty-five whistles made of bone, all found together in one basket. They were wrapped with split reed and were seven to ten inches in length.

[282] Washington Matthews, “The Basket Drum,” *American Anthropologist*, O. S., vol. vii., No. 2, April, 1894.

[283] A. F. Bandelier, *Archæological Tour*, p. 150.

[284] John Comfort Fillmore, “The Harmonic Structure of Indian Music,” *American Anthropologist*, N. S., April, 1899. See also Chas. K. Wead, “The Study of Primitive Music,” *Am. Anthropologist*, N. S., vol. ii., No. 1.

[285] James Mooney, “The Ghost-Dance Religion,” *Fourteenth Ann. Rept. Bu. Eth.*, pp. 994, 995.

[286] James Mooney, “The Ghost-Dance Religion,” *Fourteenth Ann. Rept. Bu. Eth.*, pp. 994, 995

[287] Murdoch says the Point Barrow Eskimo wake up in the night to sing.—*Ninth Ann. Rept. Bu. Eth.*, p. 388.

[288] James Mooney, The Ghost-Dance Religion, *Fourteenth Ann. Rept. Bu. Eth.*, pp. 1002, 1003.

[289] J. Walter Fewkes, *Jour. of Am. Eth.*, vol. ii., p. 159.

[290] James Mooney, *Fourteenth Ann. Rept. Bu. Eth.*, p. 1008.

[291] Stephen Powers, *Tribes of California*, pp. 211, 212.

[292] *Eleventh Ann. Rept. Bu. Eth.*, p. 255.

[293] For a description of the "Cat's Cradle" games of the Amerinds, see the elaborate work *String Figures* by Caroline Furness Jayne.

[294] Col. Richard Irving Dodge, *The Plains of the Great West*, pp. 329, 330.

[295] *Plains of the Great West*, p. 324.

[296] John T. Short, *The North Americans of Antiquity*.

[297] From the Moki method of guiding shower-waters amongst the corn to guiding waters from a brook or river in that way would not be a great step; indeed, it would be most simple and natural and would easily be forced by circumstances.

[298] Cosmos Mindeleff, "Aboriginal Remains of Verde Valley," *Thirteenth Ann. Rept. Bu. Eth.*, p. 238.

[299] The term "horticulture" as employed by some writers means agriculture on a small scale, the operations not being considered by them extensive enough to merit the title of agriculture.

[300] Refer to previous chapter on "Architecture and Dwellings."

[301] J. Walter Fewkes, "Preliminary Account of Archæological Field Work in Arizona in 1897," *Smithsonian Report*, 1897, p. 613.

[302] Desiré Charnay, *Ancient Cities*, p. 36.

[303] Bancroft, *History of the United States*, vol. i., p. 209.

[304] Cyrus Thomas, *Twelfth Ann. Rept. Bu. Eth.*, p. 408.

[305] Cyrus Thomas, *Twelfth Ann. Rept. Bu. Eth.*, p. 408.

[306] In New England there was once a fortification in Sanbornton, N. H., which had walls six feet thick and breast-high, faced outside with stone.—Winsor, *Nar. and Crit. Hist.*, vol. i., p. 404.

[307] The great Cahokia mound in Illinois is seven

hundred feet by five hundred feet on the ground. For illustration of Etowah mound see page 337.

[308] Cyrus Thomas, *Study of North American Archæology*, p. 125.

[309] Gerard Fowke describes in the *American Anthropologist*, N. S., vol. ii, No. 3, "Points of difference between Norse Remains and Indian works."

[310] *Ancient Cities.*

[311] Ad. Bandelier, *Archæological Tour*, p. 233 *et seq.*

[312] Contact with civilisation has, however, changed the average health in many if not all tribes.

[313] Bancroft, *History of the United States*, vol. i.

[314] For further details of the Mexican drinks, see Charnay's *Ancient Cities*.

[315] Squier, *Nicaragua*, p. 272.

[316] Biart, *The Aztecs*, p. 290.

[317] *The Life and Adventures of James P. Beckwourth, Mountaineer, Scout, and Pioneer, and Chief of the Crow Nation of Indians*, p. 444. Harper Bros., 1856.

[318] *Ibid.*, p. 445.

[319] The council was opened by the sachem puffing smoke from the pipe over the heads of the assembly, and then each councillor in turn drawing at the pipe. This accomplished, business was begun.

[320] Mrs. Erminnie A. Smith, "Myths of the Iroquois," *Second Ann. Rept. Bu. Eth.*, p. 72.

[321] *History of the United States.*

[322] Important announcements are made by appointed criers.

[323] *Life and Adventures of James P. Beckwourth*, p. 228.

[324] *History of the United States.*

[325] Payne's *History of the New World*, vol. ii., pp. 495, 499, and 501.

[326] *Conquest of Mexico*, vol. i., p. 81.

[327] *Conquest of Mexico*, vol. i., p. 126; see also pp. 251, 252 of this book.

[328] Lucien Carr, *Smithsonian Report*, 1891, p. 543; see also Payne's *History of the New World*, page 330.

[329] *Ibid.*

[330] See Fewkes, "The New-Fire Ceremony at Walpi," *American Anthropologist*, N. S., vol. ii., No. 1.

[331] For details of cenoté, etc., see Desiré Charnay's *Ancient Cities*.

[332] *Archæological Tour*, p. 204.

[333] James Mooney, "The Ghost-Dance Religion," *Fourteenth Ann. Rept. Bu. Eth.*, p. 980.

[334] Mrs. Erminnie Smith, "Myths of the Iroquois," *Second Ann. Rept. Bu. Eth.*, p. 68.

[335] *Conquest of Mexico*, vol. i., p. 121.

[336] James Mooney, "Sacred Formulas of the Cherokees," *Seventh Ann. Rept. Bu. Eth.*, p. 328.

[337] "Our materia medica owes tobacco, gum copal, liquid amber, sarsaparilla, resin of tecamaca, jalap, and huaca to the Aztecs."—L. Biart, *The Aztecs*, p. 285.

[338] D. G. Brinton, *The American Race*, p. 82.

[339] *League of the Iroquois*, p. 55.

[340] *Ibid.*, pp. 330–333.

[341] Brinton, *The American Race*, p. 77.

[342] These ceremonials often introduce historical matters. I was surprised once to hear the song change to one of our Sunday-school hymns. This portion of the ceremony was describing the establishment of a Presbyterian mission at Keam's Canyon years before.

[343] See J. Walter Fewkes, *Journal of American Ethnology*, for a description of some of the Moki ceremonials and other papers by the same author.

[344] In some of the pueblos there is a constant inter-killing going on for supposed evil practices of witchcraft (Bandelier *Report*, part i., p. 35), but whether this has any connection with the secret orders, I do not know.

[345] For information on these and other social points see the various writings of J. W. Powell.

[346] The clan totem is probably an expansion of the individual totem by increase.

[347] See pp. 162, 164, 241, this book, for illustrations of totem poles.

[348] Dr. H. C. Yarrow, "Mortuary Customs," *First Ann.*

Rept. Bu. Eth.

[349] The head-stones of these graves were this shape, [** symbol] and a portion in some cases protruded above the ground when I was there. The ground was very sandy. The stones were natural slabs, about 1½ in. thick.

[350] Stansbury, in his *Report*, describes graphically a "death lodge" he found, but, unfortunately, space is lacking to reprint it here.

It is important in studying burial customs of the Amerinds to remember that all members of a tribe were not necessarily disposed of in the same way. Cabeza de Vaca mentions that "sometimes common members of a tribe were buried while medicine men were burned."

[351] See p. 46, this book.

[352] D. G. Brinton, *The Lenapé and their Legends*, pp. 158, 164.

[353] "The spirit of any plant, any star, or other personage in creation may become a man's attendant. In our popular phraseology this is called his medicine."—Jeremiah Curtin, *Creation Myths*, p. 29.

[354] See "The Lessons of Folklore," J. W. Powell, *American Anthropologist*, vol. ii., No. 1, N. S., January, 1900.

[355] Jeremiah Curtin, *Creation Myths of Primitive America*, p. 499.

[356] Bandelier, *Archæological Tour*, p. 180.

[357] *Ibid.*, p. 193. See p. 170 *et seq.* for his whole discussion of Quetzalcohuatl. See also the "Book of Quetzalcohuatl." Payne, *History of the New World*, II., p. 435 *et seq.*

[358] *American Hero Myths*, p. 64 *et seq.*

[359] A. S. Gatschet, "An Indian Visit to Jack Wilson, the Payute Messiah," *Journal of American Folk-Lore*.

[360] *American Hero Myths*, p. 147.

[361] Payne accepts the Amazon stories as true. *History of the New World*, vol. ii., p. 11.

[362] For some Amerind legends delightfully related, see *Blackfoot Lodge Tales*, and other books, by George Bird Grinnell.

[363] *Native Races*, vol. i., p. 129.

[364] *League of the Iroquois*, p. 43.

[365] Brinton, *The Lenapé*, p. 15.

[366] *History of the American Indians*, p. 282.

[367] See Macmillan's *Dictionary of Architecture*; pronounced *kee-vah*.

[368] *First Ann. Rept. Bu. Eth.*, p. 59.

[369] See Macmillan's *Dictionary of Architecture*.

[370] Parkman mentions Beckwourth in the *Oregon Trail*, p. 124, as "a mongrel of French, American, and Indian blood.... He is a ruffian of the worst stamp, bloody and treacherous, without honour or honesty"; but other writers seem to give him a better character.

[371] Beckwourth, *Life and Adventures*, first ed., pp. 227, 228.

[372] Brinton, *The Lenapé*, p. 47.

[373] *The American Race*, p. 46.

[374] Morgan, *Houses and House Life*, p. 8. "In the ancient gens descent was limited to the female line." *Ibid.*, p. 5.

[375] *Ancient Society*, p. 69.

[376] *American Anthropologist*, N. S., vol i., No. 4, October, 1899, p. 710.

[377] *Ancient Society*, p. 71, and *Houses and House-Life*, p. 7.

[378] Powell, *First Ann. Rept. Bu. Eth.*, p. 61.

[379] Originally *Häyowenthä* in the Mohawk. He and *Däganowédä* are usually considered mythical personages.

[380] *The American Race*, p. 130.

[381] Payne, as before noted, says "a military despotism."

[382] *Archæological Tour*, p. 31, and footnote, p. 31.

[383] *Conquest of Mexico*, vol. i., p. 23.

[384] *Ancient Society*, pp. 71, 72.

[385] *Houses and House-Life*, p. 28.

[386] See the Preface of this book, and also Payne's *History of the New World*, vol. ii., which, unfortunately, the author did not have the benefit of seeing till after

this book was written.

[387] In this connection see "Archæology of the Thompson River Region, British Columbia," by Harlan I. Smith, *Memoirs of the American Museum*, vol. ii., May, 1900. The Eskimo probably entered Alaska along the coast from the east.

[388] It is of course possible that some infusion of blood occurred in this manner, but it is not likely that it was ever sufficient to tinge a whole stock.

[389] "This uniformity finds one of its explanations in the geographical features of the continent, which are such as to favour migrations in longitude, and thus prevent the diversity which special conditions of latitude tend to produce."—Brinton, *American Race*, p. 41.

[390] See also "On the Peopling of America," by August R. Grote, *Bulletin Buffalo Society of Natural Sciences*, February 2, 1877.

[391] The tinge of resemblance between certain Amerind stocks and foreign stocks endures from the pre-glacial period, then, when intercourse was on different lines, and does not indicate any latter-day relationship.

[392] These tools might easily be quite as good as many found on the surface to-day, and it would be difficult to distinguish them from at least the ruder forms of modern implements.

[393] W. H. Holmes, "Preliminary Revision of the Evidence Relating to Auriferous Gravel Man in California," *American Anthropologist*, October, 1899.

[394] An elevation of the ocean bottom in the Atlantic tropical regions would probably disturb the existing climate of the North Atlantic regions by deflecting the warm currents.

[395] See *A Naturalist in Nicaragua*, by Thomas Belt, Chap. XIV.

[396] Payne believes that by this lowering of the waters combined with land elevation, a Miocene land passage was formed leading from Asia to the North-west coast and that the American continent was then peopled by this route.

[397] See also, "Man and the Glacial Period in

America," Payne's *History of the New World*, vol. ii., p. 62 *et seq.*, and discussion of the effects of glaciation, *ibid.*, p. 348.

[398] "When first met with the Navajos occupied the same range of country they now inhabit."—Bandelier, *Report*, part i., p. 175.

[399] *National Geographical Magazine*, December 1, 1899, p. 509.

[400] "That there was a primitive empire ... seems to some minds confirmed by other evidences than the story of Votan ... and out of this empire ... have come, as such believers say, after its downfall, somewhere near the Christian era, and by divergence, the great stocks of people called Maya, etc."—Winsor, *Nar. and Crit. Hist.*, vol. i., p. 134.

[401] *League of the Iroquois.*

[402] For information on the Amerindian wars, their efforts to preserve their territory, etc., see Bancroft's *History of the United States*; Winsor's *Narrative and Critical History of the United States*; Winsor's other works; Parkman, John Fiske; and numerous other books to be found in any good library.

[403] *Harper's Magazine*, March, 1899, p. 649.

[404] "The True Route of Coronado's March," *Bulletin of American Geographical Society*, December, 1897.

[405] *Life and Adventures*, p. 438.

[406] Bering found no inhabitants on the Aleutian islands and his visit of discovery was recent—1741.

[407] The thanks of the author are due to Prof. Otis Tufton Mason, of the United States National Museum, for kindly reviewing this appendix in proof. Prof. Mason writes, "Your work has my approval and it is well done."

[408] See map, page 33 this book, and also the original of it in the *Seventh Ann. Rept. Bu. Eth.*

[409] See "The True Route of Coronado's March," by F. S. Dellenbaugh, in the *Bulletin of the American Geographical Society*, December, 1897.

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