

LIBRARY
THE PA. STATE
COLLEGE

SMITHSONIAN

CONTRIBUTIONS TO KNOWLEDGE.

VOL. XXII.



EVERY MAN IS A VALUABLE MEMBER OF SOCIETY, WHO, BY HIS OBSERVATIONS, RESEARCHES, AND EXPERIMENTS, PROCURES
KNOWLEDGE FOR MEN.—SMITHSON.

CITY OF WASHINGTON:
PUBLISHED BY THE SMITHSONIAN INSTITUTION.

MDCCCLXXX.

YRABUJ
ITATC AM INT
303.1100

PHILADELPHIA:
COLLINS, PRINTER, 705 JAYNE STREET.

EXPLORATIONS

OF THE

ABORIGINAL REMAINS OF TENNESSEE.

BY

JOSEPH JONES, M.D.,

PROFESSOR OF CHEMISTRY AND CLINICAL MEDICINE IN THE MEDICAL DEPARTMENT OF THE
UNIVERSITY OF LOUISIANA, NEW ORLEANS.

WASHINGTON CITY:
PUBLISHED BY THE SMITHSONIAN INSTITUTION.

[OCTOBER, 1876.]

A D V E R T I S E M E N T .

THIS memoir gives the results of a very extended investigation of the remains of the ancient inhabitants of Tennessee, by Joseph Jones, M.D., Professor of Chemistry and Clinical Medicine in the Medical Department of the University of Louisiana, at New Orleans.

An appropriation was made by the Institution to assist Dr. Jones in his exploration of these remains, and to the work he has devoted much time and labor. The memoir was submitted to Dr. Otis, of the Medical Department U. S. Army, and to Professor O. T. Mason, of Columbian University, and on their approval has been accepted for publication.

JOSEPH HENRY,
Secretary Smithsonian Institution.

SMITHSONIAN INSTITUTION,
WASHINGTON, D. C., *October, 1876.*

P R E F A C E .

THE following explorations among the Mounds, Earthworks, and Stone-graves of the Aborigines of Tennessee, were commenced in the early part of 1868, and were continued to the close of 1869.

The inductive method was followed in the entire investigation, and in presenting an outline of the explorations the effort has been made to accomplish two results:—

1st. The accurate description of the aboriginal remains.

2d. The collection and classification of such facts as bore on their obscure history.

With the limited means at the command of the author, and with numerous pressing professional duties and cares, he was unable to carry forward the explorations on the scale which their importance demanded; but it is hoped that these imperfect labors may prove of some service to future explorers in this interesting field.

The thanks of the author are due to Mr. R. M. Ewing, Dr. Freeman, Mr. Parish, and General De Graffenreid, of Franklin, Mr. Brown, of Old Town, Colonel Overton, of Natchez, and to his intelligent and kind friends, Dr. John Watson Morton, of Nashville, and Dr. John H. Morton, of Union City, Tennessee, for valuable aid during the explorations of the stone-graves and mounds.

CONTENTS.

	PAGE
CHAPTER I. Burial caves	1
II. Modes of burial practised by the aborigines of America	7
Stone graves	7
III. Mounds, fortifications, and earthworks	36
Stone-grave burial mounds	37
Sacrificial and burial mounds	41
IV. Earthworks on the Big Harpeth River	56
V. Earthworks on West Harpeth and Big Harpeth Rivers	79
Earthworks at Old-Town	82
VI. The Stone Fort and other aboriginal remains	100
Aboriginal remains in Maury County	107
VII. Relics from the mounds and stone-graves	128
Stone and clay images	128
Shell, pearl, and copper ornaments	136
Aboriginal rock-paintings	137
Pipes	138
Weapons	139
Coins	140
Implements of stone employed for mechanical purposes	141
Stone and earthenware vessels	144
VIII. General conclusions	146

LIST OF ILLUSTRATIONS.

FIG.	PAGE
1. Small vase of clay and crushed shells from stone coffin near Nashville, front view	40
2. Side view of same	40
3. Drinking cup of clay and crushed shells from stone grave near Brentwood	41
4. Hollow image of clay and crushed shells from stone grave near Brentwood	41
5. Image of clay and shells representing deformed female from stone grave near Nashville	41
6. Various forms of shell beads from stone coffins in mounds opposite Nashville	42
7. Shell ornament from breast of skeleton in stone coffin in mound opposite Nashville, con- cave surface	43
8. Convex surface of same	43
9. Image of clay and crushed shells from child's grave opposite Nashville	44
10. Wooden ornament coated with copper from stone grave opposite Nashville	45
11. Double-headed stone hatchet of green chloritic stone from mound, opposite Nashville	46
12. Arrow-head from stone grave	46
13, 14. Outlines of cranium from stone grave in mound opposite Nashville	48
15. Shell ornament from stone grave of child opposite Nashville	48
16. Stone implement from stone grave in mound in Nashville	50
17. Disk of crushed shells and clay from stone grave, Nashville	50
18. Knobbed surface of clay disk	50
19. Biconcave stone disk from stone grave	51
20. Celt from stone grave in Nashville	51
21. Stone implement of silex from ancient burying ground near Nashville	53
22. Black vase from aboriginal cemetery near Nashville	54
23. Plan of works and relative position of mounds on plantation of Genl. de Graffenreid	56
24. Stone sword or spear head from ancient earthwork on Big Harpeth River	58
25. Copper plate with cross stamped in centre from stone grave in mound on Big Harpeth River	59
26. Yellow clay vase with powdered shell dégraissant from stone grave in mound on Big Har- peth River	59
27. Bottom of same	59
28. Vase from stone grave in burial mound on Big Harpeth River	60
29. Carved sea-shell from stone grave in burial mound on Big Harpeth River	60
30. Carvings on same	60
31. Head crowned with helmet from mound in Williamson Co.	63
32. Black earthenware head from ancient earthwork near Hickman	63
33. Small reddish-yellow cup or pot of fine clay from stone grave	64
34. Group of vases and pots of crushed shells and clay from stone graves on Harpeth River	74
35. Group of vases of same material and locality	74
36. Discoidal stone from ancient works on Big Harpeth River	74
37. Biconcave discoidal stone from ancient works on Big Harpeth River	74
38. Hatchet of hard green chloritic slate from stone grave in works on Big Harpeth River	75
39. Polished wedge or fleshing instrument of green chlorite from stone grave in works on Big Harpeth River	75

FIG.	PAGE
40. Small chisel of green chloritic stone sharpened at both ends from stone grave in works on Big Harpeth River	75
41. Sandstone pipe from stone grave	75
42. Stone pipe from aboriginal works near Murfreesboro'	76
43. Spear-head from ancient works on Big Harpeth River	76
44. Small hollow image from aboriginal mound, side view	77
45. Front view of same	77
46. Plan of works and mounds on West Harpeth River	79
47. Plan of works, mounds, and stone graves at Old Town	82
48, 49, 50. Earthenware vessels of dark clay and crushed shells from stone graves at Old Town	83
51. Earthenware vessels from Old Town	84
52. Black vase or pot of dark clay and crushed shells from stone grave at Old Town	84
53. Pipe of coarse yellow sandstone from Old Town	87
54. Implement of hard greenstone from Old Town	87
55. Celts from valley of Big Harpeth River	87
56. Plan of stone fort near Manchester, Tenn.	100
57. Plan of entrance to stone fort	101
58. Stone pipe found near stone fort	103
59. Stone implements from vicinity of stone fort	103
60. Plan of stone fort as executed by E. W. Nance	103
61. Images from Rock Mound near Pulaski	108
62. A, Stone implement; B, shell ornament; c, fragment of jaw and tooth from rock mound near Pulaski	109
63. Craniograph	112
64. Chinooks (flatheads)	123
65. Osage chiefs and braves	124
66. Stone idol from Knox Co., Tenn., front and side view	128
67. Stone idols, male and female, from Cumberland Valley, front view	129
68. Side view of same	129
69. Stone image from Henry Co., Tenn., front view	130
70. Side view of same	130
71. A, Small idol from mound in Perry Co., Tenn.; B, small hollow clay idol from stone grave at Boiling Springs, Tenn.; c, black clay idol from pyramid of Cholula, Mexico	132
72. Image from stone grave in valley of Cumberland	133
73. A, Chinese figure Tae-heih; B, symbolic divisions of circle by ancient stone grave race of Tennessee	137
74. Small stone pipe from mound near Hickman, Ky.	138
75. Stone implement (scalping knife) from valley of the Cumberland River	139
76. Chipped celt from stone grave in Cumberland Valley	139
77. Jasper spear-head from Cumberland Valley	140
78. Jasper spear-head from stone grave	140
79. Stone implement of silex from valley of the Cumberland	140
80. Plummets of black magnetic iron	141
81. Cone of hæmatite from the Cumberland Valley	141
82. Celts from middle Tennessee	142
83. Celts from the valley of the Cumberland River	142
84. A, B, C, Implements of clay and crushed shells	143
85. Stone vessel from mound near Tallahatchie River	144

ANTIQUITIES IN TENNESSEE.

CHAPTER I.

BURIAL CAVES.

By the first settlers of Tennessee, many of the caves which abound in the limestone formation were found to contain human bones in abundance, which had been deposited by the race formerly inhabiting this country. The working of these caves for *nitre* during the revolutionary war, the Indian war, the last war with Great Britain, and the recent civil war of 1861-1865, has resulted in the removal and destruction of these human remains. I have visited several caves which are known to have contained human bones in former times, without obtaining any of these ancient relics. As far as my observations extended, the caves containing the human remains were always located in the vicinity of fertile valleys and plains in the neighborhood of some river or never-failing spring of water. Large mounds were generally found in the same localities, and the condition of the former inhabitants was evinced by the numerous fragments of pottery, arrow-heads, and other stone implements.

Numerous stone graves containing human remains are, at the present day, found along the banks of the rivers and streams, in the fertile valleys, and around the cool springs which abound in the limestone region of Tennessee and Kentucky. These ancient repositories of the dead are frequently surrounded by extensive earth-works, which inclose imposing monumental remains.

In these remains we have proof that this country, in common with other portions of the great valley of the Mississippi, was inhabited in ancient times by a comparatively dense population, which subsisted on the products of husbandry as well as by the chase.

It is important, in the first place, to examine the testimony of the earlier explorers and writers upon the deposits of human bones in caves.

The early pioneers and hunters discovered everywhere in the more fertile regions of Middle Tennessee marks of the ancient inhabitants, and they described the caves which they visited at that time as "full of human bones." Haywood¹ relates that, in the spring of the year 1811, the remains of two human beings were found in a copperas cave in Warren County, in West Tennessee, about fifteen miles

¹ Natural and Aboriginal History of Tennessee, pp. 163-166.

1 March, 1876.

southwest from Sparta, and twenty miles from McMinnville. One of them was a male, the other a female. They were interred in baskets made of cane curiously wrought, and evidencing considerable mechanical skill. They were both dislocated at the hip-joint, and were placed erect in the baskets, with a covering of cane made to fit the inclosure in which they were placed. The flesh of their bodies was undecayed, of a brown color, and adherent to the bones and sinews. Around the female, next to the body, was wrapped a well-dressed doe-skin; next to this was a mat very curiously wrought from the bark of a tree, and feathers. The bark seemed to have been made into small strands, well twisted. Around each of these strands feathers were rolled, and the whole was woven into cloth of a fine texture, after the manner of our common, coarse fabrics. This mat was about three feet wide, and between six and seven feet in length. The whole of the fabric thus formed of bark was completely covered by the feathers, the body of it being about one-eighth of an inch in thickness, and the feathers extending about one-quarter of an inch from the strand to which they were attached. The appearance was highly diversified by green, yellow, and black feathers, presenting different shades of color when exposed to the sunlight in different positions. The next covering was an undressed doe-skin, around which was rolled, in good order, a plain shroud, manufactured after the same plan as the one ornamented with feathers. This article resembled very much, in its texture, the bags generally used for the purpose of holding coffee exported from Havana to the United States. The female had in her hand a fan formed of the tail feathers of a turkey, bound with buckskin strings and scarlet-colored hair, so as to open and shut readily. The hair of the mummies was still remaining upon their heads, and was of a yellow cast and of very fine texture.

De Soto, during his march in 1539 and 1540 through the territory now included within the limits of Florida, Alabama, Georgia, and Tennessee, saw great numbers of similar feathered mantles among various Indian nations; and the Mexicans, at the time of the Spanish conquest, were clad in similar garments. John Lawson, in his "New Voyage to Carolina," in describing his visit to the King of Santee, says: "He brought with him their chief doctor or physician, who was warmly and neatly clad with a match-coat made of turkeys' feathers, which makes a pretty show, seeming as if it was a garment of the deepest silk shag," p. 18. In the island of O-why-hee, in the Pacific Ocean, in the year 1777, when Captain Cook visited it, the king and his chiefs were dressed in red feathered cloaks, which in point of beauty and magnificence were said to have been nearly equal to those of any other nation. Fans were made there also of the fibres of the cocoa-nut, of the tail feathers of the cock and of the tropic bird, and also feathered caps were worn. In 1730, the Indians of North Carolina used feathered match coats, exceedingly pretty, says Dr. Brickel; some of which, he also remarks, are beautifully wrought with a variety of colors and figures, which seem at a distance like a fine flowered silk shag. When new and fresh, he continues, they serve for a bed instead of a quilt. Some match-coats, he says, were made of hair, or of raccoon, beaver, or squirrel skins; others again were made of the green parts of the skin of the mallard's head or of the skins of other fowls, which they stitch or sew perfectly well

together; their thread being the sinews of the deer divided very small. When they were finished, they appeared very beautiful.

Haywood describes a cave, the aperture into which was very small, near the confines of Smith and Wilson Counties, on the south side of Cumberland River, about twenty-two miles above Cairo, on the waters of Smith's Fork. The workmen digging in the apartment next the entrance, after removing the dirt, came to another small aperture upon the same level, which they also entered, and found a room twenty-five feet square. This room seemed to have been carefully preserved for the reception and burial of the dead. In it, near the centre, were found three human bodies sitting in baskets made of cane, the flesh being entire, but a little shrivelled and hard. The bodies were those of a man, a woman, and a small child. The color of the skin was said to be fair and white, without any admixture of a copper color; their hair auburn and of a fine texture. The teeth were very white; in stature they were about the same as the whites of the present day. The man was wrapped in fourteen dressed deer skins, and over these were wound what those present called blankets. They were made of bark, like those found in the cave in White County. In form the baskets were pyramidal, being larger at the bottom and tapering towards the top. The heads of the skeletons were outside of the blankets.¹

At the plantation of Mr. William Sheppard, in the County of Giles, seven and a half miles north of Pulaski, on the east side of the creek, is a cave with several rooms. The first is fifteen feet wide, twenty-seven feet long, and four feet deep; the upper part is of solid rock. Leading into this cave was a passage which had been so artfully covered that it escaped detection till lately. A flat stone, three feet wide and four feet long, rested upon the ground, and, inclining against the bank, closed part of the mouth. Into the part of the mouth left open, had been rolled another stone which closed the whole opening. When these stones were removed and the cave was first entered, the jaw-bone of a child, the arm-bone, the skull, and thigh-bones of a man were found. The whole bottom of the cave was paved with flat stones of a bluish color closely joined together, but of different shapes and sizes. They formed a smooth floor upon which the bones were laid.²

Twelve miles below Carthage, and about a mile from the Cumberland River, is a cave in which occurred human bones of all sizes. There is a burying-ground near to the fortification, in which, fifteen years ago, were discovered many skeletons, and with them were deposited pipes and water-vessels of earthenware. Near to this cemetery is a deep creek running into the river, and forming an acute angle with the latter. At some distance from the junction is a ditch running from the creek to the river, and the remains of a parapet. Opposite to the entrance-way, and about six feet from it, is the appearance of a wall on the inside, so formed as to turn those entering to the right or left. In the interior were several mounds.³

Captain Daniel Williams, a man of undoubted veracity, is said to have affirmed that, several years ago, in a cave five or six miles above Carthage, on the Cumber-

¹ Natural and Aboriginal History of Tennessee, p. 191.

² Haywood, Nat. and Ab. Hist. p. 195.

³ Haywood, p. 169.

land River, workmen were collecting earth for saltpetre, and that many human skeletons were found, one of which was a female in a good state of preservation, with yellow hair, and shrivelled flesh. Around the waist was a silver girdle, with marks resembling letters. The body was replaced in the cave whence they had taken it.¹

On the north bank of the Holston, five miles above the mouth of the French-Broad, are six mounds, within half an acre of ground, placed without any apparent regularity. They are in form truncated pyramids. The bases are from ten to thirty feet in diameter. The largest of them are ten feet in height. Their form is remarkably regular. In one of them, which was cut into perpendicularly, a small quantity of charcoal and ashes was discovered. These mounds are inclosed by an old ditch, which can at this time be traced distinctly on the sides, and which incloses several acres of land besides the mounds. At every angle of the ditch is a bastion in the form of a semicircle. On the south bank, opposite the mound, is a bluff of limestone, in which is a cave. This bluff is one hundred feet in height. On it are faintly painted, in red colors, the sun and moon, a man, birds, fishes, etc. These figures have in part faded within a few years. Tradition says they were made by the Cherokees, who were accustomed in their journeys to rest at this place. Whether such a tradition is entitled to credit is for the judicious reader to determine. Wherever perpendicular cliffs or bluffs occur on the rivers of Tennessee, and especially if caves are in them, mounds are often found near them, inclosed in entrenchments, the sun and moon being painted on the rocks, and charcoal and ashes being found in the smaller tumuli. These tokens seem to afford evidence of a connection between the mounds, the charcoal and ashes, the paintings, and the caves. The latter frequently contain the skulls of human beings alleged to have been sacrificed by fire on the mounds. The paintings are supposed to have represented the deities whom the people worshipped; and the ditches may possibly have pointed out the consecrated ground, which was not to be polluted by the tread of unhallowed feet. The large mounds with levelled tops, containing below the surface of the upper part an image of stone, which is supposed formerly to have stood upon the summit, or sometimes having the image at the margin of its base covered with soil a few inches, as if it had tumbled from the top, are supposed to have been the high places around which the people assembled to offer up their adorations.²

"A human body was found, in the year 1815, in one of the limestone caverns of Kentucky. The skin, bones, and other firm parts were in a state of entire preservation. The outer envelope of the body was a deer-skin dressed in the usual way, and, perhaps, subsequently softened by rubbing before being used. The next covering was a deer-skin, the hair of which had been cut away by a sharp instrument. The remnant of the hair and the gashes in the skin nearly resembled the sheared felt of beaver. The next wrapping was of cloth, made of *twine* doubled and twisted. The innermost wrapping was a mantle of cloth like the preceding, but

¹ Haywood, p. 100.

² Haywood, pp. 148, 149.

finished with large brown feathers arranged and fastened with great skill, so as to be capable of guarding the living wearer from wet and cold. The plumage was distinct and entire, and the whole bore a near similitude to the feathered cloaks now worn by the natives of the northwest coast of America. The body was in a squatting posture, with the right arm bent forward, and its hand encircling the right leg. The left arm hung down, with its hand extending partly under the body. The individual, who was a male, did not probably exceed the age of fourteen at his death. There was a deep and extensive fracture of the skull near the occiput, which was probably the cause of his death. The skin had sustained little injury. It was of a dusky color, but the natural hue could not be decided with exactness from its appearance at that time. The scalp, with small exceptions, was covered with sorrel and foxy hair. The teeth were white and sound. The hands and feet seem to have been slender and delicate. Some are inclined to the opinion that this specimen belonged to the Peruvian race."¹

The light color of the hair, in these so-called mummies of Tennessee and Kentucky, was most probably due to the action of the lime and saltpetre.

When Kentucky was first explored, great numbers of human bodies are said to have been found in a state of preservation in a cave near Lexington. As the pioneers did not appear to attach much importance to antiquities, these bodies were not preserved. The bodies found in the saltpetre cave of Kentucky are said to have been considerably smaller than the men of our times; and their teeth are described as long, white, and sharp, and separated by considerable intervals.

Mr. Caleb Atwater quotes Mr. Clifford of Lexington, Kentucky, to the effect that the mummies were generally found enveloped in three coverings; the first a species of coarse linen cloth of about the consistency and texture of cotton bagging; the second a kind of network of coarse threads formed of very small, loose meshes, in which were fixed the feathers of various kinds of birds, lying all in one direction, so as to make a perfectly smooth surface; the third and outer envelope either like the first or consisting of skins sewed together.²

Mr. Charles Wilkins, in 1817, recorded the following facts with reference to an exsiccated body discovered in a saltpetre cave in Warren County, Kentucky: "It was found at the depth of about ten feet from the surface of the cave, bedded in clay, strongly impregnated with nitre, placed in a sitting posture, encased in broad stones standing on their edges, with a flat stone covering the whole. It was enveloped in coarse clothes, the whole wrapped in deer-skins, the hair of which was shaved off in the manner in which the Indians prepare them for market. Inclosed in the stone coffin were working utensils, beads, feathers, and other ornaments of dress."³

This observation is important, for it establishes the fact that the mode of burial practised in the case of this so-called mummy was similar to that in use along the banks of the Cumberland and other streams of Tennessee and Kentucky; and we

¹ Natural and Aboriginal History of Tennessee, Haywood, pp. 338, 339.

² Archæologia Americana, p. 318.

³ Ibid., p. 392.

are justified in the conclusion that the bodies deposited in the stone graves were arrayed in dresses similar to those in which the exsiccated bodies in the saltpetre caves were inclosed. The latter were preserved from decay, undoubtedly, by the saltpetre and lime salts and the drier atmosphere of the caves.

In the numerous stone graves which I have opened, traces of the garments which originally surrounded the bodies could be discerned in only one of the most perfectly constructed stone coffins.

CHAPTER II.

MODES OF BURIAL PRACTISED BY THE ABORIGINES OF AMERICA.

Stone Graves.

THE ancient race of Tennessee buried their dead in rude stone coffins or cists, constructed of flat pieces of limestone or slaty sandstone which abound in Middle Tennessee.

Extensive graveyards, in which the stone coffins lie close to each other, are found in Tennessee and Kentucky, along the river-courses, in the valleys, and around the springs.

A considerable portion of the city of Nashville has been built over an extensive Indian graveyard which lay along the valley of Lick Branch. A large number of these graves have been destroyed in the building of North Nashville. In this section of the city I saw a number of them quite exposed during the digging of the cellars of a row of houses, and obtained from them a small stone hatchet and another implement of hard silicious material, beautifully polished. This stone implement is supposed to have been used in the dressing of hides. All around the sulphur spring, traces of the aborigines are manifest in the form of fragments of large pots and various stone implements. It is supposed that the salt lick was frequented by the aborigines for the purpose of killing the buffalo and deer which resorted there, and also for the manufacture of salt. A number of interesting relics are said to have been found in the banks around the sulphur spring; and I myself have gathered a large number of fragments of pottery in this locality, and found them to be uniformly composed of a mixture of crushed river shells and clay. Many of these fragments were nearly one inch in thickness, with an almost imperceptible convexity indicating that they had once formed parts of very capacious vessels. From the markings upon the exterior they appear to have been moulded in baskets made of split cane.

An extensive burying-ground lies on the opposite bank of the Cumberland, directly across from the mouth of Lick Branch, surrounding a chain of four mounds. One of these mounds appeared to have been the burying place of a royal family. Two of the smaller ones are thought to have been the general burying-ground of the tribe, whilst the largest one may possibly have been erected as a site for the residence of the chief, or for a temple. In the low alluvial plain, all around these stone graves, are scattered fragments of pottery, arrow-heads, and other stone implements. The caving of the bluff constantly exposes stone graves, skeletons, and relics of various kinds.

A graveyard is located on the same bank of the Cumberland River, about a mile and a half lower down; another at Cockrill's Spring, two and a half miles from the sulphur spring; another six miles from Nashville, on the Charlotte Turnpike; another about eight miles above, near the mouth of Stone's River; and still another at Haysborough. I opened a number of stone graves on the farm of Col. W. D. Gale, about three miles from Nashville. At the foot of the hill upon which the residence is situated flows a never-failing spring. The Indians used the hill above the spring as a burying-ground. I exhumed from one grave a small black idol, from another copper ornaments, and from other graves upon the same hill vases of various forms. Many other localities might be enumerated in the immediate vicinity of Nashville.

Numerous stone graves are also found on White's Creek; on the Dickinson Turnpike, nine miles from Nashville; at Sycamore, twenty-two miles from this city, in Cheatham County; on the plantation of Col. Overton, nine miles from Sycamore; in and around Brentwood; at the Boiling Springs; and on the plantation of Mr. Scales.

Extensive Indian burying-grounds are also found in White County, near Sparta, and along the various streams flowing into the Cumberland and Tennessee Rivers, as Harpeth, Duck, Elk, and Stone Rivers.

At the plantation of Gen. De Graffenreid, two and a half miles above Franklin, numerous stone graves are found within and around an extensive earthwork, which appears to have surrounded a considerable Indian town. One large mound, pyramidal in shape and two hundred and thirty feet in diameter, together with a chain of small conical mounds, is found within the ancient fortification. Several of the smaller mounds contain numerous stone graves; some are also scattered about at the base of several of the larger mounds. An extensive burying-ground is also situated on the slope of the hill overlooking the mounds and earthwork.

One of the most extensive and remarkable collections of stone graves is on the west fork of Big Harpeth, six and a half miles from Franklin, at a place called Old-Town, the property of Mr. Thomas Brown.

Extensive graveyards are also found at various localities along the banks of the Harpeth River down to its junction with the Cumberland.

These graves, although justly considered as rude fabrics, nevertheless exhibit considerable skill in their construction, and are standing memorials of the regard in which this ancient race held the memory of the dead.

The manner of burial seems to have been as follows: An excavation of a size agreeing with that of the body of the dead was made in the ground, and the bottom carefully paved with flat stones. Flat stones or slabs of limestone and slaty sandstone were placed along the sides and at the head and foot of the grave. The body was then placed within this rude coffin, and with it were deposited vases, small ornaments, pearls, beads, bands of wampum, large sea-shells, idols, warlike implements, stone hatchets and chisels, spear-heads, arrow-heads, stone swords, paint bowls, and even copper ornaments. The top of the grave was then covered with one or more flat stones. The upper slabs covering the graves were generally on a level with the surface of the ground. In some localities, however,

and especially in the most carefully constructed burial mounds, the graves were covered with a foot of earth or more, and in order to discover their location I was obliged to sink an iron rod into the loose soil until it struck the lid of the coffin. These burial mounds will be more fully described hereafter.

In some localities the sides of the tombs stood up above the surface from four to eight inches, as in the case of the stone graves described by Bartram. When a number of coffins were placed together, the side stones of the first frequently constituted the side of the second, and so on. Many of the stone graves are quite small, and capable of containing only the body of a *new-born* infant. These small graves were constructed with great care, and the sides, bottom, and top were formed of much thinner and smoother slabs than the graves of the adults. Many of the short, square graves, not more than eighteen inches or two feet in length, contain the bones of adults piled together, the crania being surrounded by or resting upon the arm and leg bones. This class of graves containing the bones of adults packed in a small space were probably constructed at the general burying festival, or contained the remains of the dead which had been transported from a distance. This view is sustained by the fact that in some of these graves I have found portions of two or more skeletons, sometimes two crania, and in others only a portion of a single skeleton.

It has been frequently asserted that the smaller graves contained the bones of *small adults* or *pigmies*. It has been further asserted that *entire cemeteries were composed of these small graves*.

The determination of the true character of the remains in these graves appeared to me to be of much interest, and I opened a large number of them in various ancient cemeteries, with the following results:—

1st. Some of the small graves contained nothing more than the bones of small animals and birds. The animals appeared to be a species of dog, also rabbits, raccoons, and opossums. The bones of the birds appeared to belong to the wild turkey, eagle, owl, hawk, and wild duck. Occasionally bones of these animals and birds were found in the large graves along with the bones of human adults.

2d. The small graves were frequently in groups, in the neighborhood of the large graves. The most carefully constructed burial mounds which appeared to contain the remains of royal families, generally revealed not more than two or three small graves, inclosing the remains of children *who had died during the process of dentition*.

3d. All the crania and bones which I examined in the small graves were, beyond controversy, those of children. The bones of the crania were so soft and thin that, after numerous trials, I was able to obtain only a single tolerable specimen. I was enabled, in many cases, however, by exercising much care in removing the earth, to ascertain the exact outline of the crania; as, however, they contained earth within, the attempt to lift them was followed by the breaking of the different bones into fragments. In all cases the crania were much flattened at the occiput, giving an exceedingly short longitudinal or occipito-frontal diameter, and a very long transverse or parietal diameter. This fact was determined by removing the earth with great care from around the crania, and examining them *in situ* in the

small graves before the attempt was made to remove them. As soon as the effort was made to remove them, the component bones separated at the sutures, and crumbled during the effort of lifting them out of the grave.

4th. The conclusive demonstration of the character of these remains lay in the *existence of both sets of teeth in the upper and lower jaw-bones, thus proving that they belonged to children or infants who had probably died during the period of dentition.*

Haywood, in his "Natural and Aboriginal History of Tennessee," devotes an entire section to the consideration of "*the ancient pigmies.*" The following is a synopsis of the facts stated by him in reference to this matter:—

A number of small skeletons were discovered a few miles from Sparta, Tennessee, in White County, an account of which was given by a Mr. Lane. The graves were about two feet in length, fourteen inches broad, and sixteen inches deep. These extend promiscuously throughout the farm of Mr. Lane, and in a large and closely connected burying-ground in the vicinity; there were others of the same description four miles south of Sparta, and it is said that hundreds of them might be found throughout the locality. There is no discernible rising on the surface of the earth on account of these graves, and they were found by sinking an iron rod into the ground until it struck the covering stone of the coffins. These graves generally contained small skeletons of human beings so much decayed that they could not be removed without being broken to pieces, or crumbling to dust. There were also found in them remnants of pottery and shells, as well as bones of animals. In one the skeleton lay on its back, with its feet drawn up, so as to raise the knees about four inches above the bottom of the grave; the head was also so raised as to cause the chin to lie upon the breast. This skeleton, carefully measured as it lay, was found to be, from a little below the ankle-joints to the top of the skull, two feet ten inches, making a proper allowance for the bending of the legs and the inclination of the head.

But one grave of the whole series was of a larger size and of a different form, being constructed after the manner of a coffin, fourteen inches broad at the head, twenty-two at the elbow, and ten at the foot; the sides and ends were of flag-stones, the same as those of the small graves. In this grave lay a skeleton five feet five inches long, the head to the west and the feet to the east. This skeleton was carefully uncovered without displacing any of the bones until the whole was exposed to view. Its mouth was wide open and contained a full set of teeth, the arms lay along the side, the ribs were broad and flat and more than double the size of those of the Pigmies. The head was also larger, the eyes wider apart, and the forehead higher than those in the smaller graves. The skull was perfect, with the exception of a fracture on the right cheek-bone; and a quantity of fine, straight hair adhered to it, which was of a bright gray color. No vessels or trinkets were found with this skeleton, and, from the great dissimilarity in the shape of its head and the size and form of the bones, it seemed to belong to a different tribe from the skeletons of the smaller graves.

From the great number of small graves found here, says Mr. Lane, all of the same description, and, among them all, but one being of a large size, it seems to indicate that there was, in ancient times, a race of people whose height was from two feet ten to three feet.

As old as the hair of the large skeleton seemed to be, there was not a tooth lost or unsound in either jaw, but one of the Pigmy heads had in the upper jaw a decayed tooth, whence it was conjectured that the person to whom this skeleton belonged was older than the former.

Specimens of the contents of these graves were submitted to medical gentlemen of Nashville, and various opinions were entertained as to the maturity or infancy of the smaller skeletons. The prevailing one seemed to be that these skeletons belonged to adult persons of small size, and also that some of the bones found were those of animals.—*Natural and Aboriginal History of Tennessee*, pp. 200-209.

In a note added to this description, Haywood records the fact that, in the neighborhood of St. Louis, Mo., small stone graves exist, as in Tennessee; and that, in certain ancient mounds near Lake Erie, skeletons of people of small stature are found, pp. 360, 361.

The preceding account of the pigmies of Tennessee is an example of how a wild hypothesis may, from the love of the marvellous, be founded upon a few hasty and imperfect observations. This tradition had been repeated so often that it was generally believed in the State at the time of my exploration, and I have, therefore, given the facts upon which it appears originally to have been founded. It is evident that these facts do not establish the existence of a race of small people (*pigmies*) in former times; the decayed state of the bones, and especially of those of the crania in the graves opened by Mr. Lane and others, was almost conclusive proof that they belonged to the skeletons of children. On the other hand, the skeletons of adults remain to this day in a good state of preservation in the stone graves. Even Haywood, who was anxious to make out a special case, represents the testimony of the physicians of Nashville as doubtful; and one of the crania or cranial bones sent was evidently that of a child. The color of the hair could not determine this question, as it had been buried in the moist earth for more than a century at the time of these examinations.

I myself have examined the bones from fifteen different aboriginal cemeteries, and have never discovered a single skeleton of an adult of unusually small stature. I have examined graves of all sizes, from those just large enough for the still-born infant to those enclosing skeletons more than seven feet in length, but, in every case, the small graves contained either the skeletons of children or the bones of full-grown adults, which had been deposited in the square stone coffins, after they had been separated from the flesh and disjointed.

The experience of my lamented and honored friend, the late Col. A. W. Putnam, was in like manner against the existence of a race of pigmies in former times. All the small stone graves which he opened contained the bones of children, as was evident from the state of the teeth. The testimony of Dr. Troost, the learned geologist of Tennessee, was also to the same effect. In his "Account of some Ancient Remains in Tennessee," after mentioning six extensive burying-grounds in a circle of about ten miles diameter around Nashville, and after stating that the burying-grounds on the banks of the Cumberland, in the suburbs of the city of Nashville, to which we have alluded, extended at that time, 1844, about a mile in length, almost to Mr. Macgavoc's, and that the stone coffins were constructed in such a manner that each corpse was separated by a single stone from the next, he says:—

"Some of our inhabitants consider these places as battle grounds, and the graves as the graves of the slain. The Indians do not bury their fallen foes, but leave them to be devoured by the wolf, the cougar, and other carnivorous animals; their own slain they carry to their towns, or hang up in mats upon trees. They have afterwards burying festivals, when they collect the bones thus preserved, and bury them; and thus, in my opinion, originated those small graves which are attributed, but I believe erroneously, to pigmies. I have opened numbers of these small graves and have found them filled with a parcel of mouldered bones, which, judging from some fragments I have seen, belonged to common-sized men. In one of them I found amongst the mouldered relics two occipital bones; of course, here was a mere mixture of the parts of more than one skeleton. These bones lay without any order. This is not the case with the relics of the old extinct race, whose graves are much larger, the skeletons being generally stretched out. Nevertheless, I have found them also more or less doubled up, so that the part of the thigh-bone next to the knee lay near the lower jaw; in other graves I have found the head with the face downwards; in fact, they seem to

have buried their dead in every position. The present Indians generally bury their dead doubled up, the thigh against the breast."¹

Owing to the nature of my professional duties, and my official relations as Health Officer of Nashville, Tennessee, I was unable to examine the graves at Sparta in person, although desiring greatly to do so; in order, however, to settle this question, I addressed letters to the most prominent physicians and citizens of Sparta and White County, requesting them to open the graves and to forward the remains to me in Nashville.

I select the following from the replies received in response to this request. The first is from Drs. E. L. Gardenhire, of Sparta, and J. Barnes, of Livingston, Tennessee:—

"We have to say that we know of no graves or skeletal remains of an extinct race in White County, Tennessee. About eight miles north of Sparta, in a beautiful fertile valley of Cherry Creek, there is a very large mound, but whether there are Indian graves or bones near it we do not know. We have not heard of anything of the kind.

'Twenty-one miles north of Livingston, in Overton County, near Maj. John F. Jewett's residence, we learned that there is a cave in which there is a large deposit of human bones. Whether they are of the ordinary size or not we have not learned, but the fact that they are there is well authenticated.

"The writer of this, E. L. Gardenhire, of Sparta, Tennessee, twenty-five years ago, dug into a large mound near said cave, and found human teeth in a good state of preservation. He found, also, parts of the bones of a human cranium. The latter, however, was soon reduced to powder by exposure to the air.

"At Floyd's Lick, in Jackson County, Tennessee, thirty miles southwest of this place, are the remains of an ancient fortification plainly to be seen. It seems to have consisted of earthworks, with small mounds at the corners, and a much larger mound in the centre. Near the fortification are numerous graves. They are uniformly about four feet in length and two and a half feet wide. The graves are about four feet deep, and consist of broad, smooth, slate stones, pretty nicely cut out and fitted together in the excavations so as to form a stone box. The writer opened one of them twenty years ago, found some bones much decayed, a small earthen vessel or pot, and some flint arrow-heads. The bones were so much decayed that nothing of their size or shape could be ascertained.

"The writer was in company with Dr. Z. R. Chowning, near his residence, many years ago, and found a considerable quantity of human bones in a tolerable state of preservation. It is remembered that we found thigh and leg bones and crania. Upon measurement the thigh and leg bones were uniformly larger than the bones of the present race of men. The locality of the bones was not like the usual burial places. We supposed, therefore, that anciently a battle may have been fought there, and the bones of the slain may have been thus deposited. We remarked nothing very peculiar in the size of the crania found.

"Dr. Zachariah R. Chowning lives thirteen miles northwest of Livingston. This is all the information we can now give you." * * *

The next is from Dr. Jas. H. Snodgrass, of Sparta, Tennessee.

"There are many of these graves in our country, in the vicinity of rich borders of land. The two large pieces of carved shell seem, from the position in which they were found, to have been worn upon the breast, and the little balls as ear-ornaments. The head of the femur is forwarded to show you the condition of the bones. The small stone was picked up in the vicinity. There is a small earthen pot, holding about half a gallon, in every grave, but when exposed to the air a few minutes it crumbles upon the slightest touch. These vessels are marked with a great deal of taste." * * *

¹ Transactions of the American Ethnological Society, vol. i. pp. 358, 359.

In a subsequent letter Mr. Snodgrass states that "all the graves examined inside of a certain entrenchment are much smaller than those immediately outside. Those inside are about eighteen inches square, those outside are eighteen inches by thirty inches; in all, the dead are buried in the same position."

I examined carefully the bones from the small graves near Sparta, sent me by Mr. Snodgrass, and found them to be the remains of infants and children during the period of dentition. The age of the individuals to whom the remains had belonged was absolutely demonstrated by the existence of two sets of teeth, the first and the permanent, both in the upper and the lower jaw-bones.

The shell ornaments lying upon the breasts were similar in all respects to those from other parts of Tennessee, having the figure of the sun carved upon them. The pottery was composed of the same materials (crushed river shells and clay) as the vases exhumed from the stone graves and mounds at Nashville, Franklin, Old Town, and many other places.

It was evident, from all the testimony that I could gather, that the graves around Sparta, which had furnished Haywood with the materials for the construction of his romance of the ancient race of pigmies, inclosed the remains of individuals of all ages from infancy upwards, and that whilst the infants or children were frequently buried in groups apart from the graves of the adults, there was nothing peculiar about their organic remains. The fact that the large and small graves in some cemeteries are intermingled, and that both varieties occur all through this section of country, without any apparent division into distinct districts, sustains the view that all the stone graves were constructed by the same people, who were large and well formed, and that the hypothesis of the existence of a race of *pigmies* in Tennessee in ancient times is a mere figment of the imagination.

As far as our knowledge extends, the mode of burial in carefully constructed stone coffins, practised by the aborigines of Tennessee, was different from that in use among many Indian tribes of the present day; and an inquiry into the different modes of sepulture, practised by the aborigines of America, is of importance in its bearing upon the history of the former inhabitants of Tennessee.

At the time of the invasion of De Soto, more than three centuries ago, certain tribes or nations of the Southern Indians are described as inclosing the remains of the dead in coffins, in which were placed pearls, shell ornaments, and idols; and these coffins were deposited in special cemeteries and temples.

Hernando De Soto, Luis Fernandez De Bimeda, the *gentleman* of Elvas, and the Inca, Garcilasso De la Vega, have recorded the singular history of the *Christian*, *John Ortiz*, who came to Florida with Pamphilo de Narvaez, and was captured by the Indian Chief Ucita and held in captivity for twelve years, until released by De Soto. The life of John Ortiz, who had been condemned by Ucita to be bound hand and foot, upon a raft erected upon four stakes, and burned to death, was saved, like that of the celebrated John Smith, the founder of Virginia, by the earnest intercessions of the daughter of the Indian King. John Ortiz was placed in charge of the temple or burial mound to keep away the wolves, which often carried away the corpses from the coffins. The bodies of the dead were said to have been deposited in wooden boxes covered with boards, without any fastening except a stone

or a log of wood laid upon the top. In the graves of one of the chief towns in the province of Cutifachiqui, the Spaniards found fourteen rows of pearls (weighing three hundred and ninety-two pounds), and little images of men and birds made of them. These facts indicate that the mode of burial practised by the aborigines of Tennessee dates back more than three centuries, and was employed by the Indians inhabiting, at the time of the expedition of De Soto, that portion of the country which is now included in the States of Florida, Alabama, Georgia, and Tennessee.

Lafitau, in his great work, "*Mœurs des Sauvages Américains, comparées aux Mœurs des Premiers Temps*," quotes a lengthy and elaborate description by Pere de Brebeus, of the mode of burial practised in early times by the Hurons and Iroquois. The bodies of the chief men were, in former times, subjected to a process of embalming. The skin was removed and oiled; the flesh was removed from the bones, and the skeleton placed within the skin, which was then stuffed with sand and laid upon a scaffold. The flesh was smoked, dried, and packed in blankets, and placed at the feet. This mode appears to have been practised only in the case of the most distinguished chiefs. The Illinois are said to have buried the bodies of the women, but they wrapped the bodies of the men in skins and hung them upon trees. When the Hurons and Iroquois buried bodies in the ground, they dug a circular hole, which was carefully lined with bark, and the body wrapped in skins was placed in the grave, with a vessel containing water or food at the side, together with ornaments, pipes, and weapons of war. The mouth of the grave was then covered with bark and earth. Pere de Brebeus has also described at length the grand burial festival observed by the Iroquois at long intervals of time, varying from eight to twelve years. The dead bodies and bones of the nation or tribe were collected and deposited in a large grave, into which large numbers of utensils, hatchets, pipes, etc., were thrown, and the whole covered with bark and earth. Various ceremonies were performed during this grand collection and burial of the deceased.¹

Narvaez, upon first landing in Florida, found a temple in which were chests, each containing a dead body covered with painted deer skins.

Jacob le Moynes,² who accompanied Rénaud de Laudounière in his second voyage to Florida, says, in his work on the Indians, that when a chief or prophet died, upon the St. John's, he was placed in the ground, and a small mound of conical form was erected over him. The base of this mound was surrounded with arrows stuck in regular order. Some of the tribe sat and others knelt around it, and continued to weep and howl for the space of three nights. Chosen women next visited the mound for a long time every morning at the break of day, at noon, and at night.

The description given by Joutel of the mode of burial practised by the Chouanons, although presenting some features in common with that of the ancient inhabitants of Tennessee, was most probably drawn up from that portion of the nation which had settled with the Illinois. As this author does not mention the use of stone slabs in the construction of their tombs, it is probable that the country in which

¹ *Mœurs des Sauvages Américains*, etc., par C. P. Lafitau, tome second, pp. 386-458.

² As quoted by Pickett, *History of Alabama*, vol. i. p. 72.

they then lived was destitute of this material. In fact, the mode of burial employed by the inhabitants of Tennessee was only practicable in a region of country abounding in flat rocks. Large portions of the Southern and Western States are without slate or thin flat rocks, and hence it is impossible to determine by their stone graves the precise limits of the country formerly inhabited by the aborigines of Tennessee. It is certain, however, that these stone graves are found over a tract of country extending from the head waters of the Savannah River nearly to the shores of Lake Erie.

The mode of burial practised among the Illinois is stated by Mr. T. Rale, and deserves to be mentioned. "Their custom," says Rale, "is not to bury the dead, but to wrap them in skins, and to attach them by the head and feet to the tops of trees."¹

According to Mr. Lewis H. Morgan, different customs have prevailed among the Iroquois in relation to the mode of burial. At one period they buried the dead in a sitting posture, with the face to the east. Skeletons are still found in this position, in various parts of the State of New York, with a gun-barrel resting against the shoulder, thus fixing the period of their sepulture subsequently to the first intercourse of this people with the whites. Another and more extraordinary mode of burial prevailed among them. The body of the deceased was exposed upon a bark scaffolding, erected upon poles or secured upon the limbs of trees, where it was left to waste to a skeleton. After this had been effected by the process of decomposition in the open air, the bones were removed either to the former home of the deceased or to a small bark house by its side prepared for their reception. In this manner the skeletons of the whole family were preserved from generation to generation by the affection of the living. After the lapse of a number of years, or in a season of public insecurity, or on the eve of abandoning a settlement, it was customary to collect these skeletons from the whole community around, and to consign them to a common resting-place. To this custom, which was not confined to the Iroquois, are, doubtless, to be ascribed the barrows and bone mounds which have been found in such numbers in various parts of the country. On opening these mounds the skeletons are usually found arranged in horizontal layers constituting a conical pyramid, those in each layer radiating from a common centre. In other cases they are found placed promiscuously. There were Senecas residing at Tonawanda and Cattaraugus, in 1851, who remember having seen, about sixty years before, at the latter place, these bark scaffoldings on which bodies were exposed. The custom still prevails among the Sioux upon the Upper Mississippi, and among some of the tribes in the far west. The notions entertained by the Iroquois as to the state of the soul when disembodied were vague and diversified; but they all agree that, on the journey, it required the same things as were of use while it dwelt in the body. They, therefore, deposited beside the deceased his bow and arrows, tobacco and pipe, and necessary food for the journey. They also painted his face and dressed his body in its best apparel. A fire was built upon the grave at night to enable the spirit to prepare its food.²

¹ See his Letters in Kip's Jesuit Missions, p. 38.

² League of the Iroquois, pp. 172-175.

Captain Bernard Romans says that the Chicasaws bury their dead almost the moment the breath is out of the body, in the very spot under the couch in which the deceased died, and the nearest relatives mourn over it with woful lamentations. The mourning continues every evening and morning during a whole year.¹ When one of the Chactaws dies, a stage is erected, and the corpse is laid on it and covered with a bear skin; if it be that of a man of note, it is decorated, and the poles painted red with vermilion and bear's oil; if that of a child, it is put upon stakes, set across. The relatives then come and weep, asking many questions of the corpse, such as, why he left them? did not his wife serve him well? was he not contented with his children? had he not corn enough? did not his land produce sufficient of everything? was he afraid of his enemies? etc., and this accompanied by loud howlings; the women are there constantly, and sometimes with the corrupted air and heat of the sun, faint, so as to oblige the by-standers to carry them home; the men also mourn in the same manner, but in the night or at other times when they are least likely to be discovered. The stage is fenced round with poles; it remains thus a certain time, but not a fixed period; this is sometimes extended to three or four months, but seldom more than half that time. Old men, who wear very long nails on the thumb, fore, and middle finger of each hand, as a distinguishing badge, constantly travel through the nation, that one of them may acquaint those concerned, of the expiration of this period, which is according to their own fancy; the day being come, the friends and relatives assemble near the stage, a fire is made, and the venerable operator, after the body is taken down, with his nails tears the remaining flesh off the bones, and throws it with the entrails into the fire, where it is consumed; then he scrapes the bones and burns the scrapings. The head being painted red with vermilion is put, with the rest of the bones, into a chest (which for a chief is also made red), and deposited in the loft of a hut built for that purpose, and called the bone-house; each town has one of these. After remaining here one year or thereabouts, if the deceased was a man of any note, they take the chest down, and in an assembly of relatives and friends, they weep once more over him, refresh the color of the head, repaint the box, and then consign him to lasting oblivion. An enemy or any one who commits suicide is buried under the earth as one to be directly forgotten, and unworthy of the above-mentioned obsequies and mourning.²

Romans remarks upon this strange treatment of the dead, that Apollonius Rhodius mentions a similar custom of the inhabitants of Colchis near Pontus; Ives in his voyage relates a like custom of the ancient Peruvians; and we find again in Hawkesworth's voyage that the people of Otaheite perform their obsequies in a manner little or nothing different from that of the Chactaws.

The dead of the Muscokes or Creeks, according to Bernard Romans, are buried in a sitting posture, and they are furnished with a musket, powder and ball, a hatchet, a pipe, some tobacco, a club, a bow and arrows, a looking glass, some

¹ Concise Natural History of East and West Florida, p. 71.

² Natural History of East and West Florida, pp. 89-90.

vermilion, and other articles, in order to come well provided into the world of spirits.

According to the same author, the Arkansas, Kansas, Kappas or Kwappas, bury their dead, like the Creeks, with the addition of tying the head down to the knees.

William Bartram says that the Muscogulges bury their deceased in the earth. They dig a deep square pit under the cabin or couch on which the deceased lay in his house, lining the grave with cypress bark. Into this they place the corpse in a sitting posture, as if it were alive, depositing with him his gun, tomahawk, pipe, and such other matters as he held of the greatest value in his lifetime. His eldest wife, or queen dowager, has the first choice of his possessions, and the remaining effects are divided among his other wives and his children.

The description of the burial customs of the Chactaws by Bartram is as follows, and agrees in the main with that of Captain Romans, but contains several important additions: "The Chactaws pay their last duties and respects to the deceased in a very different manner from the Muscogulges. As soon as a person is dead, they erect a scaffold eighteen or twenty feet high, in a grove adjacent to the town, where they lay the corpse, lightly covered with a mantle; here it is suffered to remain, visited and protected by the friends and relatives, until the flesh becomes putrid; then undertakers, who make it their business, carefully strip the flesh from the bones, wash and cleanse them, and when dry and purified by the air, they are placed in a curiously wrought chest or coffin, fabricated of bones and splints, which is deposited in the bone-house, a building erected for that purpose in every town. When this house is full, a general solemn funeral takes place. Then the nearest kindred or friends of the deceased, on a day appointed, repair to the bone-house, take out the respective coffins, and following one another in order of seniority, the nearest relatives and connections accompanying their respective corpses, and the multitude following after them, all as one family, with united voice of alternate alleluyah and lamentation, slowly proceed to the place of general interments, where they place the coffins in order, forming a pyramid; and lastly they cover all over with earth, which raises a conical hill or mound. Then they return to town in the order of a solemn procession, concluding the day with a festival which is called the feast of the dead."¹

James Adair, who was a trader with the Indians, and resided in their country for forty years, has given the following account of the burial of the dead by the Cherokees and Chactaws or Chokta.

"Except the Cheerake, only one instance of deviation from the ancient and general Indian custom (of burying articles with the body) occurs to me: which was that of *Malakeke*, the late famous chieftain of the Kow-wetah head war town of the lower part of the Muskohge Country, who bequeathed all he possessed to his real and adopted relations; being sensible that his effects would be much more useful to his living friends than to himself during his long sleep."

"The Cheerake of late years, by the reiterated persuasion of the traders, have entirely left off the custom of burying effects with the dead body; the nearest of blood inherits them. They, and several

¹ Travels through North and South Carolina, Georgia, East and West Florida, pp. 515-16

3 April, 1876.

others of our Indian nations, used formerly to shoot all the live stock that belonged to the deceased, soon after the interment of the corpse; not that they might accompany and wait upon the dead, but from a narrow-hearted avaricious principle. When any of them die at a distance, if the company be not pursued by an enemy, they place the corpse on a scaffold, covered with notched logs to secure it from being torn by wild beasts or birds of prey. When they imagine the flesh is consumed, and the bones are thoroughly dried, they return to the place, bring them home, and inter them in a very solemn manner. They will not associate with us when we are burying any of our people who die in their land. And they are not willing we should join with them while they are performing this kindred duty to theirs. Upon which account, though I have lived among them in the raging time of the smallpox, even of the confluent sort, I never saw but one buried, who was a great favorite of the English, and chieftain of *Oeasa*, as formerly described.

“Notwithstanding the North American Indians, like the South Americans, inter the whole riches of the deceased with him, and so make his corpse and the grave heirs of all, they never give them the least disturbance; even a blood-thirsty enemy will not despoil the dead. The grave proves an asylum, and a sure place of rest to the sleeping person, till at some certain time, according to their opinion, he rises again to inherit his favorite place; unless the covetous or curious hand of some foreigner should break through his sacred bounds. This custom of burying the dead person's treasures with him has entirely swallowed up their medals and other monuments of antiquity, without any probability of recovering them.

“The Indians use the same ceremonies over the bones of their dead as if they were covered with their former flesh. It is but a few days since I saw some return with the bones of nine of their people, who had been two months before killed by the enemy. They were tied in white deer skins separately; and when carried by the door of one of the houses of their family, they were laid down opposite to it, till the female relatives convened, with flowing hair, and wept over them for half an hour. Then they carried them home to their magazines of mortality, wept over them again, and buried them with the usual solemnities; putting their valuable effects in along with them. The chieftain carried twelve short sticks tied together, in the form of a polygon. The sticks were only peeled, without any paintings; but there were swans' feathers tied to each corner. They called that frame, *Terukpe toboh*, ‘a white circle,’ and placed it over the door, while the women were weeping over the bones.

“When any of the people die at home, they wash and anoint the corpse, and soon bring it out of doors, for fear of pollution; thence they place it opposite to the door, on the skins of wild beasts, in a sitting posture, as if looking into the door of the winter house, westward, sufficiently supported by all the movable goods of the deceased; after a short eulogium and space of mourning, they carry the body three times around the house in which it is to be interred, stopping half a minute each time, at the place where they began the circle, while the religious man of the deceased person's family, who goes before the hearse, says each time *Yah*, short and with a bass voice, and then invokes on a tenor key, *Yu*, which, at the same time, is likewise sung by all the procession, as long as one breath allows. Again he strikes up, on a sharp treble key, the feminine note, *He*, which in like manner is taken up and continued by the rest; then all of them suddenly strike off in the solemn chorus and sacred invocation, by saying, in a low key, *Wah*; which constitute the divine essential name *Yoh ewoh*.

“After they had celebrated these funeral rites of the chieftain, they laid the corpse in its tomb, in a sitting posture, with its face towards the east, its head anointed with bear's oil, and its face painted red, but not streaked with black, because that is a constant emblem of war and death. He was dressed in his finest apparel, having his gun and pouch, and trusty hickory bow, with a young panther's skin full of arrows along side of him, and every other useful thing he had been possessed of. His tomb was clean inside, and covered with thick logs so as to bear several tiers of cypress bark and such a quantity of clay as would confine the putrid smell, and be on a level with the rest of the floor. They often sleep over these tombs together; which with the loud wailing of the women at the dusk of the evening and dawn of the day, on benches close by the tombs, awake the memory of their relations.

“The Choktaws having placed the dead on a scaffold stockaded round, at the distance of twelve yards from the house, opposite to the door, the whole family convene there at the beginning of the fourth moon after the interment, to lament and feast together. After wailing a while on the mourning

benches, which stand on the east side of the quadrangular tomb, they raise and bring out the corpse, and, while the feast is getting ready, a person whose office it is, and properly called the *bone-picker*, dissects it with his sharp-pointed knife. He continues till he has finished the task and scraped all the flesh from the bones. They then carefully place the bones in a kind of small chest, in their natural order, and proceed to strike up a song of lamentation, with various wailing tunes and notes; afterwards, they join as cheerfully in the funeral feast as if their kinsman was only taking his usual sleep. Having regaled themselves, they go along with those beloved relics of their dead, in solemn procession, lamenting with doleful notes, till they arrive at the bone-house, which stands in a solitary place, apart from the town; then they proceed around it, much after the manner of those who performed the obsequies of the Chikkasah chieftain already described, and deposit them alongside of those of his kindred, till in due time they are revived by Ishto hoollo Aba, that he may repossess his favorite place.

"These bone-houses are scaffolds raised on durable pitch-pine forked posts, in the form of a house covered on the top and open at both ends. I saw three of them in one of their towns, pretty near each other; the place seemed to be unfrequented; each house contained the bones of one tribe, separately, with the hieroglyphical figures of the family on each of the odd-shaped arks. They reckon it irreligious to mix the bones of a relative with those of a stranger, and much less will they thrust the body of their beloved kinsman into the tomb of an enemy. I observed a ladder fixed in the ground, opposite to the middle of the broadside of each of those dormitories of the dead, which was made only of a broad board. On the top was the carved image of a dove, with its wings stretched out and its head inclining down, as if earnestly viewing or watching over the bones of the dead. From the top of the ladder almost to the surface of the earth, there hung a chain of grape-vines, twisted together, in circular links.

"To perpetuate the memory of any remarkable warrior killed in the woods, every Indian traveller as he passes that way, throws a stone on the place. We often see in the woods innumerable heaps of small stones in those places, where, according to tradition, some of their distinguished people were either killed or buried, till the bones could be gathered. They then continue to increase with heap, as a lasting monument and honor to them, and an incentive to great actions. * * *

"Many of these heaps are to be seen in all parts of the continent of North America. Where stones could not be had, they raised hillocks or mounds of earth, wherein they carefully deposited the bones of their dead, which were placed either in earthen vessels or in a simple kind of arks or chests."

The burial customs of the Natchez, who are said to have inhabited, in former times, the southwestern portion of the Mexican Empire, and who, on account of the wars with which they were continually harassed by neighboring Indians, wandered northeast and finally settled on the banks of the Mississippi, resembled those of the ancient Mexicans and Peruvians. The habitation of the great chief is described as standing upon an artificial mound, fronting a large square. The temple of the sun, in which a perpetual fire was preserved, was situated at the side of the cabin of the chief, fronting the east, and at the extremity of the square. It was oblong in form, forty feet in length and twenty in breadth, and within it were the bones of the deceased chiefs, contained in boxes and baskets. Lafitau, in his work on the "Manners of the American Savages," to which we have before referred, gives representations of the temple and ceremonies at the death of the chiefs (vol. i, p. 167, vol. ii, p. 410), as well as descriptions of their religious customs and belief.

Father le Petit, in his account of the Natchez Indians, has given the following description of the bloody and remarkable rites performed at the death of the suns, or chiefs:—

¹ The History of the American Indians, etc., pp. 177-185.

"The sun is the principal object of veneration to these people; as they cannot conceive of anything which can be above this heavenly body, nothing else appears to them more worthy of their homage. It is for the same reason that the great chief of this nation, who knows nothing on earth more dignified than himself, takes the title of *brother of the sun*, and the credulity of the people maintains him in the despotic authority which he claims. * * * When the great chief dies, they demolish his cabin, and then raise a new mound on which they build the cabin of him who is to replace him in this dignity. One of the principal articles of their religion, and particularly of the servants of the great chief, is that of honoring his funeral rites by dying with him, that they may go and serve him in the other world. In their blindness they willingly submit to this law, in the belief that in the train of their chief they will go to enjoy the greatest happiness.

"They first put on all their finery and repair to the place opposite the temple, where all the people are assembled. After having danced and sung a sufficient time, they place around their neck cords of buffalo hair with running knots, and immediately the ministers appointed for executions of this kind come forward to strangle them, recommending them to go and join their master, and to render to him in the other world, services, even more honorable than those which had occupied them in this. The principal servants of the great chief having been strangled in this way, they strip the flesh from their bones, particularly from their arms and thighs, and leave them to dry for two months in a kind of tomb, after which they take them out to be shut up in baskets, which are placed in the temple by the side of the bones of their master. As for the other servants, their relations carry them home with them, and bury them with their arms and clothes. The same ceremony is observed in like manner on the death of the brothers and sisters of the great chief. The women are always strangled to follow the latter, except when they have infants at the breast, in which case they continue to live for the purpose of nourishing them. And we often see many who endeavor to find nurses, or who themselves strangle their infants, so that they shall not lose the right of sacrificing themselves in the public place, according to the ordinary ceremonies, and as the law prescribes. * * *

"When one of these Indians dies, his relatives assemble and mourn his death during an entire day, when they array him in the most beautiful dresses, paint his face and hair, and ornament him with plumes, after which they convey him to the grave prepared for him, placing by his side, his arms, a kettle, and some provisions. For the space of a month, his relatives come at the dawn of day and at the beginning of the night to weep for half an hour at his grave. Each one names his degree of relationship. If he were the head of a family, the wife cries, 'My dear husband, oh! how I regret you!' The children cry, 'My dear father!' The others, 'My uncle!' 'My cousin!' etc. The nearest relations continue this ceremony for three months; they cut off their hair in sign of grief, they abstain from painting the body, and are never found at any assembly for festivity."¹

Father Charlevoix, in his "Historical Journal," describes the obsequies of a female chief, as he had it from a traveller who was witness of them, and on whose sincerity he had good reason to depend. The husband of this woman not being noble, that is to say, of the family of the great chief, his eldest son strangled him, according to custom. They then cleared the cabin of all that it contained, and erected in it a kind of triumphal stage, on which the body of the deceased woman and that of her husband were placed. A moment afterwards they ranged around these carcasses twelve little children, which their parents had strangled by order of the eldest daughter of the woman chief, who succeeded to the dignity of her mother. This being done they erected in the public place fourteen scaffolds, adorned with branches of trees, and with clothes on which they had painted various figures. These scaffolds were designed for as many persons, who were to accompany the female chief into the other world. Their relatives were all around them, and esteemed as a great honor for their families, the permission which they had obtained to sacrifice

¹ Historical Collections of Louisiana, iii, p. 141-149.

themselves in this manner. They apply sometimes two years beforehand to secure this favor; and the persons who obtain it must themselves make the cord with which they are to be strangled.

They appear on their scaffolds dressed in their richest habits, each holding in his right hand a large shell. Their nearest relative stands on their right-hand side, holding under the left arm the cord which is to serve for the execution, and in the right hand a fighting club. From time to time these nearest relatives make the cry of death; and at this cry, the fourteen victims descend from their scaffolds, and go and dance together, in the middle of the open space which is before the temple, and before the cabin of the deceased chief. During some days preceding the execution, the victims are treated with great respect; they have each five servants, and their faces are painted red. Some add that during the eight days which precede their death, they wear a red ribbon round one of their legs; and that, during this time, everybody strives who shall be the first to feast them. However that may be, on the occasion now referred to, the fathers and mothers who had strangled their children, took them up in their hands and ranged themselves on both sides of the cabin. The fourteen persons who were also destined to die placed themselves in the same manner, and were followed by the relatives and friends of the deceased, all in mourning; that is to say, with their hair cut off. They made the air resound with such frightful cries that one would have said that all the devils in hell were come to howl in the place. This was followed by the dances of those who were to die, and by the songs of the relatives of the female chief.

At last they began the procession. The fathers and mothers who carried the dead children appeared first, marching two and two immediately before the bier, on which was the body of the female chief carried by four men on their shoulders. All the others came after in the same order as the first. At every ten paces the fathers and mothers let the children fall upon the ground. Those who carried the bier walked upon them; so that, when the procession arrived at the temple, these little bodies were all crushed.

While they were burying the body of the female chief in the temple, they undressed the fourteen persons who were to die. They made them sit on the ground before the door, each having two savages by him, one of whom sat on his knees, and the other held his arms behind. Then they put a cord about his neck and covered his head with a roebuck's skin. They made him swallow three pills of tobacco, and drink a cup of water; the relations of the female chief then drew the two ends of the cord, singing till he was strangled; after which they threw all the carcasses into the same pit, which they covered with earth. When the great chief dies, if his nurse is living, she must die also.¹

John Lawson relates, that when one dies among the Santee Indians, who were governed by a despotic ruler, a mole or pyramid of earth is raised, the surface thereof being worked very smooth and even, sometimes higher or lower, according to the dignity of the person whose monument it is. On the top of

¹ Journal d'un Voyage fait par ordre du Roi dans l'Amérique Septentrionale, adressé à Madame la Duchesse de Lesdiguières, par le P. De Charlevoix, Tome Sixième. See also Historical Collections of Louisiana, Part iii, pp. 163-5.

this is an awning, made ridge-ways, like the roof of a house, and is supported by nine stakes or small posts, the grave being six or eight feet in length and four feet in breadth; about it are hung gourds, feathers, and other similar trophies, placed there by the dead man's relatives. As soon as the person is dead, they lay the corpse upon a piece of bark in the sun, seasoning or embalming it with a small root beaten to powder, which appears as red as vermilion; the same is mixed with bear's oil, to beautify the hair and preserve their heads from vermin, which is plentiful in these parts of America. After the carcass has lain a day or two in the sun, they place it upon crotches, cut of a sufficient length for its support from the earth; then they anoint it all over with the fore-mentioned powder of beaten root and bear's oil. When this is done, they cover it very carefully over with bark of the pine or cypress tree, to prevent any rain from falling upon it, sweeping the ground very clean all about it. One of his nearest of kin brings all the temporal estate the deceased was possessed of at the time of his death, such as guns, bows, arrows, beads, feathers, match-coat, etc. This relative is the chief mourner, being clad in moss, and having a stick in his hand, keeping up a mournful ditty for three or four days, his face being black with the smoke of pitch pine mingled with bear's oil. All the while he tells the dead man's relatives and the rest of the spectators, who the dead person was, and of the great feats he performed in his lifetime; all the discourse tending to the praise of the deceased. As soon as the flesh will separate from the bone, they take it off and burn it, making all the bones very clean; they then anoint them with the ingredient aforesaid, wrapping up the skull very carefully in a cloth artificially woven of "*'possum's hair.*" The bones they carefully preserve in a wooden box, every year oiling and cleansing them. By these means they preserve them for many ages, so that you may see an Indian in possession of the bones of his grandfather, or of some of his relatives of a greater antiquity. The Indians have other sorts of tombs, as when one is slain: in that very place, they make a heap of stones (sticks where stones are not to be found); to this memorial, every Indian that passes by adds a stone, to augment the heap, out of respect to the deceased hero.¹

In his detailed account of the Indians of North Carolina, Lawson adds several particulars, illustrating more fully their mode of burial. The dead body is wrapped in mats made of rushes or cane, and these coverings are surrounded with a long web of woven rods or hollow canes, which constitutes the coffin, and which is wound round the body several times, and tied fast at both ends, making a very decent appearance. After certain ceremonies and the rehearsal of the good deeds and possessions of the deceased, the body is borne to the grave, which is about six feet deep and eight feet long, having at each end (that is, at the head and foot), a light-wood or pitch-pine fork, driven into the ground, close to the grave, and designed to support the ridge pole. Before the corpse is laid in the grave, they cover the bottom with two or three thicknesses of the bark of trees; then they let down the corpse with two of the straps with which the Indians carry their burdens; a pole is then placed over the grave, the ends resting in the two forks,

¹ A New Voyage to Carolina, etc., 1709, pp. 21-22.

and having provided a great many pieces of pitch-pine logs, about two feet and a half long, they plant them on the sides of the grave, with the upper ends together, so that they resemble the roof of a house. This structure is covered with bark, and the earth that came out of the grave is thrown on and beaten down very firmly. By this means the dead body lies, as it were, in a vault, nothing touching it. Lawson says that, when he saw this mode of burial, he was greatly pleased with it, esteeming it very decent and pretty, as he had seen a great many Christians buried without the tenth part of the ceremony. When the flesh has rotted and mouldered from the bone, they take up the skeleton, clean the bones, and then join them together; afterwards, they wrap them in pure white dressed deer-skins, and lay them amongst their grandees and kings in the *Quiogozon*, which is their *Royal Tomb*, or burial place of their kings and war captains. This is a very large magnificent cabin, raised at the general charge of the nation, and maintained in a state of repair and neatness. About seven feet from the ground is a floor or loft, on which lie all their princes and great men that have died for several hundred years, all attired in the dress previously described. The bones of no person are allowed to lie here or to be thus dressed unless the relatives give a large sum of money to the rulers for their admittance. If they remove ever so far, to live in a distant country, they never fail to take all these bones along with them, though the tediousness of their short daily marches keeps them a long time on their journey. They are taught to regard this *Quiogozon* with all the veneration and respect that is possible for such a people, and they would rather lose all they possess than have any violence or injury offered thereto. Lawson also states that the tribes of Indians in Carolina differ somewhat among themselves in their burials; yet they all agree in their mourning, since they appear every night at the sepulchre and howl and weep in a very dismal manner, having their faces daubed over with light-wood soot (which is the same as lamp-black) and bear's oil. The women are never honored with these ceremonies after death.¹

According to Catlin, the Mandan Indians never bury the dead, but place the bodies on slight scaffolds, just above the reach of human hands and out of the way of wolves and dogs; and they are then left to moulder and decay. Whenever a person dies in one of the Mandan villages, the customary honors are immediately paid to his remains. The body is dressed in its best attire, painted, oiled, feasted, and supplied with bow and quiver, shield, pipe and tobacco, knife, flint and steel, and provisions enough to last a few days on the journey which is to be performed; a fresh buffalo skin is wrapped around the body, tightly wound from head to foot with thongs of raw-hide. Then other robes are soaked in water till they are quite soft and elastic, and are also bandaged tightly around the body in the same manner, and tied fast with thongs, which are wound with great care and exactness, so as to exclude the action of the air from all parts of the corpse. There is then a separate scaffold erected for it, constructed of four upright posts, and on the top of these are small poles passing around from one post to another. Across these

¹ Loc. cit., pp. 180-183.

a number of willow rods are placed, just strong enough to support the body, which is laid upon them, on its back, with its feet carefully turned towards the rising sun. A great number of these bodies are to be seen, arranged exactly in a similar manner; but, in some instances, the remains of a chief or of a medicine man may have a few yards of scarlet or blue cloth spread over them as a mark of public respect and esteem. Hundreds of these bodies repose in this manner at these places, which the Indians call "*the villages of the dead.*" Every day in the year, fathers, mothers, wives, and children may be seen lying under the scaffolds, prostrated upon the ground with their faces in the dust, howling forth incessantly the most piteous and heart-broken cries and lamentations, tearing their hair, cutting their flesh with sharp knives, and doing other penance to appease the spirits of the dead, whose departure they attribute to some sin or omission of their own, for which they sometimes inflict the most excruciating self-torture. When the scaffolds on which the bodies have rested decay and fall to the ground, the nearest relatives, having buried the rest of the bones, take the skulls, which are perfectly bleached and purified, and place them in circles of a hundred or more, upon the prairie, at equal distances, about eight or nine inches from one another, with the faces all looking to the centre; here they are religiously protected and preserved in their precise positions from year to year, as objects of religious and affectionate veneration. There are often several of these circles, or *Golgothas*, together, twenty or thirty feet in diameter, and in the centre of each is a small mound three feet high, on which uniformly rest two skulls of buffalos (a male and a female). In the centre of the little mound is erected a *medicine pole*, about twenty feet high, supporting many articles of mystery and superstition, which were supposed to have the power of guarding this sacred arrangement. Each one of these skulls is placed upon a bunch of wild sage, which has been pulled and placed under it; and each one knows the skull of a relative by some mark or resemblance, as they are daily visited and have vessels filled with food set before them. When the bunches of wild sage decay, they are carefully renewed. There is scarcely an hour, on a pleasant day, in which a woman may not be seen sitting or lying by the skull of her child or husband, talking to it in the most pleasant and endearing language.¹

According to this author the Omahas deposit their dead in the trunks and in the branches of trees, enveloped in skins, and suspend a wooden dish near the head of the corpse; probably for enabling it to dip up water to quench its thirst on the long journey, upon which they one and all expect to enter after death. These corpses are so numerous along the banks of the river, that in some places a dozen or more of them may be seen at one view.

The Sioux often deposit their dead in trees and on scaffolds, but most generally bury them on the tops of bluffs or near the villages, where they often split out staves and drive them into the ground, around the grave, to protect it from dogs and wild animals.

¹ Catlin's North American Indians, vol. i, pp. 89-91.

Catlin gives, in his second volume (pp. 5-6), an interesting account of the grave of *Black Bird*, a famous chief of the O-ma-haws, on the Missouri River, about twelve hundred miles above St. Louis. The elevated bluff on which this grave is located may be distinguished for several leagues in different directions. On his return from Washington, Black Bird died near this spot from smallpox; and, in the last moments of life, made the request that his body should be dressed in full costume, mounted upon his favorite horse, and buried upon the pinnacle of this commanding bluff, the extensive and beautiful view from which had so often delighted him during life. In the presence of the whole nation, the dead chief was placed astride his noble white steed, with his bow in his hand, and his shield and quiver slung on his back. His pipe, his flint and steel, his tinder to light his pipe by the way, his medicine bag, and a supply of dried meat were furnished him. His tobacco pouch was replenished to last him through his journey to the beautiful hunting grounds of his fathers. The turf was brought and placed around the feet and legs of the horse, and gradually piled up, until it reached the sides of the unsuspecting animal, and covered the body and head, and even the beautiful eagle-feathered plume of the valliant rider. This mound, which is covered with a green turf, and has a cedar planted in the centre, can be seen at a distance of fifteen miles by the voyager, and forms for him a familiar and useful land-mark.

Clavigero has given, in the second volume of his "History of Mexico," an interesting description of the funeral rites and sepulchres of the Mexicans. However superstitious the Mexicans were in other matters, in the rites which they observed at funerals they exceeded themselves. As soon as any person died, certain masters of funeral ceremonies were called, who were generally men advanced in years. They cut a number of pieces of paper, with which they dressed the dead body, and took a cup of water, with which they sprinkled the head, saying, "that was the water used in the time of their life." They then dressed it in a clothing suitable to the rank, the wealth, and the circumstances attending the death of the party. If the deceased had been a warrior, they clothed him in the habit of Huitzilopochtli; if a merchant, in that of Jacateuctli; if an artist, in that of the protecting god of his art or trade. One who had been drowned was dressed in the habit of Tlaloc; one who had been executed for adultery, in that of Tlazolteotl; and a drunkard in the habit of Tezcatzoncatl, god of wine. In short, as Gomara has well observed, they wore more garments after they were dead than while they were living.

When they had arrayed the dead, they gave him a jug of water, which was to serve on the journey to the other world, and also at different times, pieces of paper, mentioning the use of each. On offering the first piece to the dead, they said: "*By means of this you will pass without danger between the two mountains which fight against each other.*" With the second they said: "*By means of this you will walk without obstruction along the road which is defended by the great serpent.*" With the third: "*By this you will go securely through the place where there is the crocodile Xochitonal.*" The fourth was a safe passport through the eight deserts; the fifth through the eight hills; and the sixth was given in order

to pass without hurt through the sharp wind; for they pretended that it was necessary to pass a place called Itzehecajan, where a wind blew so violently as to tear up rocks, and so sharply that it cut like a knife; on which account they burned all the clothing which the deceased had worn during life, his arms and some household goods, in order that the heat of this fire might defend him from the cold of that terrible wind.

One of the chief ceremonies at funerals was the killing a *techichi*, a domestic quadruped resembling a dog, to accompany the deceased. They fixed a string about its neck, believing that necessary to enable it to pass the deep river Chiuh-nahuapan, or New Waters. They buried the *techichi* or burned it along with the body of its master, according to the kind of death which he died. While the masters of the ceremonies were lighting up the fire in which the body was to be burned, the other priests kept singing in a melancholy strain. After burning the body, they gathered the ashes in an earthen vase, among which, according to the circumstances of the deceased, they put a gem of more or less value, which they said would serve him in place of a heart in the other world. They buried this earthen pot in a deep ditch, and fourscore days after, made oblations of bread and wine over it.

Such were the funeral rites of the common people; but at the death of kings, or lords, or persons of high rank, some peculiar forms were observed that are worthy to be mentioned. When the king fell sick, they put a mask on the idol of Huitzilopochtli, and also one on the idol of Tezcatlipoca, which they never took off until the king was either dead or recovered; but it is certain that the idol of Huitzilopochtli had always two masks, not one. As soon as a king of Mexico had expired, his death was published in great form, and all the lords who resided at court, and also those who were but a little distance from it, were informed of the event, in order that they might be present at the funeral. In the mean time they laid the corpse upon elaborately wrought mats, which was attended and watched by his domestics. Upon the fourth or fifth day after, when the lords had arrived, bringing with them rich dresses, beautiful feathers, and slaves to add to the pomp of the funeral, they clothed the corpse in fifteen or more very fine cotton garments of various colors, ornamented with gold, silver, and gems; they hung an emerald upon the under lip, which was to serve in place of a heart, covered the face with a mask, and over the panoply placed the ensigns of that god in whose temple or area the ashes were to be buried. They cut off some of the hair, which they preserved in a little box, together with some more which had been cut off in the infancy of the king, in order to perpetuate, as they said, the memory of the deceased. Upon the box they laid an image of the dead king, made of wood or of stone. Then they killed the slave who had been his chaplain, and had taken care of his oratory and all that belonged to the private worship of his gods, in order that he might serve him in the same office in the other world.

The funeral procession came next, attended by all the relatives of the deceased, the members of the nobility, and the wives of the late king, who testified their sorrow by tears and other demonstrations of grief. The nobles carried a great standard of paper, and the royal arms and ensigns. The priests continued singing,

but unaccompanied by any musical instrument. Upon their arrival at the lower area of the temple, the high priests, together with their servants, came out to meet the royal corpse, which, without delay, they placed upon the funeral pile of odoriferous resinous woods, together with a large quantity of copal and other aromatic substances. While the royal corpse and all its clothing, arms, and ensigns were burning, they sacrificed, at the bottom of the stairs of the temple, a great number of slaves who had belonged to the deceased and also those which had been presented by the lords. Along with the slaves they likewise sacrificed some of the deformed men, whom the king had collected in his palace for his entertainment, in order that they might give him the same pleasure in the other world; and for the same reason they used to sacrifice some of his wives. Acosta says (lib. v. cap. 8), that at the funeral of a lord, all the members of his family were sacrificed. But this is grossly false, and in itself incredible; for, had this been the case, the nobles of Mexico would soon have been exterminated. There is no record, in the History of Mexico, that, at the death of the king, any of his brothers were sacrificed, as this author would intimate. How is it possible that they could practise such cruelty, when the new king was usually elected from among the brothers of the deceased? The number of the victims was proportioned to the grandeur of the funeral, and amounted sometimes, as several historians have affirmed, to two hundred. Among the other sacrifices, the *techichi* was not omitted; they were firmly persuaded that, without such a guide, it would be impossible to get through some dangerous ways which led to the other world.

The day following, the ashes and the teeth which remained entire were gathered up; they sought for the emerald which had hung to the under lip until they found it; all were then put into the box with the hair, and deposited in the place destined for their sepulchre. During the four following days they made oblations of eatables over the place of burial; on the fifth they sacrificed several slaves, and also others on the twentieth, fortieth, sixtieth, and eightieth day after. From that time forward they sacrificed no more human victims; but, every year, they celebrated the day of the funeral with offerings of rabbits, butterflies, quails and other birds, and with oblations of bread, wine, copal, flowers, and certain little reeds filled with aromatic substances, which they called *acajetl*. This anniversary was held in the four succeeding years.

The bodies of the dead were usually burned. The bodies of those only who had been drowned, or had died of dropsy or some other chronic disease, were buried. But what was the reason of these exceptions, we know not.

There was no fixed place for burials. Many ordered their ashes to be buried near to some temple or altar, some in the fields, and others in those sacred places of the mountains where sacrifices used to be made. The ashes of the kings and lords were for the most part deposited in the towers of the temples, especially in those of the great temple. Solis, in his "History of the Conquest of Mexico," affirms that the ashes of the kings were deposited in Chapoltepec; but this is false, and contradicts the report of the conqueror Cortez whose panegyric he wrote, of Bernal Dias, and of other eye-witnesses to the contrary. Close to Teotihuacan, where there were many temples, there were also innumerable sepulchres. The tombs

of those whose bodies were buried entire, agreeably to the testimony of the Anonymous Conqueror who saw them, were deep ditches, walled with stone and mortar, within which they placed the bodies in a sitting posture upon *icpalli*, or low seats, together with the instruments of their art or profession. If it was the sepulchre of any military person, they laid a shield and sword by him; if of a woman, a spindle, a weaver's shuttle, and a *xicalli*, which was a vessel fashioned of a fruit similar to gourds, large and perfectly round. In the tombs of the rich they put gold and jewels, but all were provided with eatables for the long journey which they had to make. The Spanish conquerors, knowing of the gold which was buried with the Mexican lords, dug into several of their tombs and found considerable quantities of that precious metal. Cortes says, in his letters, that at one entry which he made into the capital, when it was besieged by his army, his soldiers found *fifteen hundred castillanos*, that is, two hundred and forty ounces of gold, in one sepulchre, which was in the tower of a temple. The Anonymous Conqueror says, also, that he was present at the opening of another sepulchre, from which they took about three thousand castillanos.

The caves of the mountains were the sepulchres of the ancient Chichimecs, who, as they grew more civilized, adopted, in this and other rites, the customs of the Acolhuan nation, which were nearly the same with those of the Mexicans.

The Miztecs retained in part the ancient usage of the Chichimecs, but in some things they were singular in their customs. When any of their lords fell sick, they offered prayers, vows, and sacrifices for the recovery of his health. If he was restored, they made great rejoicings. If he died, they continued to speak of him as if he was still alive, and conducted one of his slaves to the corpse, dressed him in the clothing of his master, put a mask upon his face, and for one whole day paid him all the honors which they had formerly rendered to the deceased. At midnight, four priests carried the corpse out and buried it in a wood, or in some cavern, particularly in that one where they believed the gate of paradise to be; on their return they sacrificed the slave, and laid him with all the ornaments of his transitory dignity in a ditch, but without covering him with earth. Every year they held a festival in honor of their last lord, on which they celebrated his birth, not his death, for of it they never spoke.

The Zapotecs, their neighbors, embalmed the body of the principal lord of their nation after death. Even from the time of the first Chichimecan kings, aromatic preparations were in use among those nations to preserve dead bodies from speedy corruption; but it is not known that these were very frequently used.¹

It appears to be established by the researches of several antiquarians² that the small pyramids disposed in rows upon the parallels and meridians which bound the four faces of the two great pyramids of the sun and moon of Teotihuacan, Mexico, served as burying places for the chiefs of tribes.

Many years ago, in cutting a new road toward Puebla from Mexico, it became necessary to cross a portion of the base of the ancient Indian pyramid of Cholula.³

¹ History of Mexico, etc., vol. ii, pp. 103-110.

² Political Essays on the Kingdom of New Spain, etc., by Alexander von Humboldt, vol ii, p. 67

³ Mexico as It was and as It is, by Brantz Mayer, p. 26.

The excavation laid bare a square chamber built of stone, the roof of which was sustained by cypress beams. In it were found idols of basalt, a number of painted vases, and the remains of two bodies. No care was taken of the relics by the discoverers, and they are lost forever.

Prescott, in his essay on the *Civilization of the Incas*, introductory to the "History of the Conquest of Peru," says that it was the belief in the resurrection of the body which led the Peruvians to preserve the body with so much solicitude, by a simple process, that, however, unlike the elaborate embalming of the Egyptians, consisted in exposing it to the action of the cold, exceedingly dry, and highly rarefied atmosphere of the mountains. Such, indeed, seems to be the opinion of Garcilasso, though some writers speak of resinous and other applications for embalming the body. The appearance of the royal mummies found at Cuzco, as reported both by Ondegardo and Garcilasso, makes it probable that no foreign substance was employed for their preservation. As the Peruvians believed that the occupations in the future world would have a great resemblance to those of the present, they buried with the deceased noble some of his apparel, his utensils, and frequently his treasures; and completed the gloomy ceremony by sacrificing his wives and favorite domestics to bear him company and do him service in the happy regions beyond the clouds. Vast mounds of an irregular, or, more frequently, oblong shape, penetrated by galleries running at right angles to each other, were raised over the dead, whose dried bodies or mummies have been found in considerable numbers, sometimes erect, but more frequently in the sitting posture common to the Indian tribes of both Continents. Treasures of great value have also been occasionally drawn from those monumental deposits, and have stimulated speculators to repeated excavations with the hope of similar good fortune. It was a lottery like that of searching after mines, but where the chances have proved against the adventurers. Yet these sepulchral mines have sometimes proved worth the digging. Sarmiento speaks of gold to the value of 100,000 *Castillanos*, as occasionally buried with the Indian lords¹ and Las Casas, not the best authority in numerical estimates, says that treasures worth more than half a million of ducats had been found within twenty years after the conquest in the tombs near Truxillo.² Humboldt visited the sepulchre of a Peruvian prince in the same quarter of this country whence a Spaniard, in 1576, drew forth a mass of gold worth a million of dollars!³

Garcilasso has left on record the following description of the corpses of the Incas:—

"In the year 1560, in the house of the licentiate, Paul Ondegardo, I saw five bodies of the Incas, three men and two women. They had till now been concealed from the Spaniards. The first was that of the king Viracocha, who, by his snow-white hair, appeared to have been very aged. The next was his nephew, the great Tupac Yupanqui; and the third was Huayna Capac. The fourth was Mama Runtu, Queen of Viracocha; and the other was the body of Coya Mama Oello, mother of

¹ *Relacions*, M. S. cap. lvii.

² *Œuvres*, ed. par Llorente. Paris, 1822, tom. ii, p. 192.

³ *Vues des Cordillères*, p. 29. (*History of the Conquest of Peru*, vol. i, pp. 54, 55.)

Huayna Capac. The corpses were so perfect that not a hair of the head or of an eyebrow was wanting. They were in such dresses as they wore when living, without any other mark of royalty than the *Llantu* on the head. They were seated after the manner of Indians, with the hands across the breast, and their eyes towards the earth. They were in such good preservation that they appeared almost as if alive; but the art by which they were embalmed is lost. I touched one of the fingers of Huayna Capac, and found it as hard as wood. I am of the opinion that the bodies had been dried by exposure to the air in the same manner as meat is prepared, and which, without any other process, has always been used for the provisioning of the troops, as it will keep good for any length of time. The bodies were so light that the smallest Indian could carry one on his shoulder or in his arms, when he was required to do so in order to satisfy the curiosity of a Spanish cavalier. They covered them with a white cloth as they passed through the streets, where the people fell on their knees with tears in their eyes. Even the Spaniards took off their hats in consequence of their having borne the title of kings, which gave the Indians extreme delight."¹

On the death of the Incas, and of other eminent persons, a great number of their attendants were put to death, and interred around their huaca, that they might appear in the next world with their former dignity, and be served with the same respect. On the death of Huayna Capac, the most powerful of their monarchs, above a thousand victims were doomed to accompany him to the tomb.²

The Peruvians, according to Garcilasso, buried with the deceased Inca all his vessels of gold and silver, even those for the use of the kitchen; also his clothes and valuable jewels, with some furniture. The domestics, and women to whom he had been most attached, were buried with him alive by their own desire, and it frequently occurred that so many offered themselves to accompany their deceased masters that their superiors were obliged to limit the number. The first month was devoted to tears; and the banners, arms, clothes, and all the things that were to be buried, were exhibited in the different quarters of Cuzco. The lamentations were renewed twice each month, at the full and the change of the moon. Men and women, called *weepers*, were appointed to chant, in mournful strains, the virtues and heroic acts of the deceased. The mourning was observed throughout the empire.³

The Peruvian tombs, according to Ulloa, were constituted in the following manner: The Indians having laid the body of the dead upon the ground, erected over it a rude arch of stones or bricks, and covered it with a tumulus of earth, which they called *huaca*. In general they are eight or ten toises high, and about twenty long, and the breadth is rather less; but some are larger. They are in shape not precisely pyramidal, but more like hillocks. The plains near Cayambe are covered with them; one of their principal temples having been there where the kings and Caciques of Quito were buried.

The tombs accorded in size with the rank of the deceased; with them were buried their furniture and instruments of gold, copper, stone, and clay. Out of one huaca, in the presence of Ulloa, was taken a considerable quantity of gold utensils. In another, in the jurisdiction of Pastos, great riches were found; some copper axes, small looking-glasses of the Inca-stone, and of Galinazo or black-

¹ Book V, Chap. XXIX, Book III, Chap. XX.

² Robertson, vol. ii, p. 325.

³ Book VI, Ch. IV and V.

stone. The form of these is circular, and one of the surfaces flat and as smooth as a crystal mirror; the other oval and less polished. I saw one a foot and a half in diameter; its principal surface was concave and greatly magnified objects, and the polish of which could not now be exceeded by our best workmen. A hole is drilled to hang them by. They found, also, guaqueros for drinking chicha; some of which are made of fine black clay, and others of red clay. They are round, with the handle in the middle, the mouth on one side, and the head of an Indian excellently expressed on the other. Among the gold pieces are found nose jewels, which, in form, resemble the foot of a chalice, but are a little smaller; collars, bracelets, and ear-pendants like the nose jewels, and all of them not thicker than paper. The idols which are full length are hollow, of one piece, and show no mark of soldering. Emeralds are found in the tombs, spherical, cylindrical, and conical, and pierced with the greatest delicacy; this is very remarkable, as steel and iron were unknown.¹

Humboldt states that during his travels in Peru, in visiting the ruins of the City of Chimu, near Mansiche, he went into the interior of the famous Guaca de Toledo, the tomb of a Peruvian prince, in which Garci Gutierrez de Toledo discovered, in digging a gallery in 1576, masses of gold amounting to five millions of francs, as is proved by the accounts in the mayor's office at Truxillo.²

The burial customs of the ancient Mexicans and Peruvians appear to have been similar to those of the Mongol Tartars.

Humboldt has given, in his *Personal Narrative of Travels to the Equinoctial Regions of America*, the following interesting description of the cavern and mummies of Atarupe:—

“In this shady and solitary spot, on the declivity of a steep mountain, the cavern of Atarupe opens to the view. It is less a cavern than a jutting rock, in which the waters have scooped a vast hollow, when, in the ancient revolutions of our planet, they attained that height. In this tomb of a whole extinct tribe, we soon counted nearly six hundred skeletons well preserved, and regularly placed. Every skeleton reposed in a sort of basket made of the petioles of the palm tree. These baskets, which the natives call *mapires*, have the form of a square bag. Their size is proportioned to the age of the dead; there are some for infants cut off at the moment of birth. We saw them from ten inches to three feet four inches long, the skeletons in them being bent together. They are all ranged near each other, and are so entire that not a rib or a phalanx is wanting. The bones have been prepared in three different methods, either whitened in the air and the sun, dyed red with annatto, or, like mummies, varnished with odoriferous resins and enveloped in leaves of the heliconia or of the plantain tree. The Indians informed us that the corpse is placed in damp ground, that the flesh may be consumed by degrees; some months afterwards it is taken out and the flesh remaining on the bones is scraped off with sharp stones. Several hordes in Guiana still observe this custom. Earthen vases half baked are found near the *mapires* or baskets. They appear to contain the bones of the same family. The largest of these vases or funeral urns are five feet high and three feet three inches long. Their color is greenish-gray, and their oval form is pleasing to the eye. The handles are made in the shape of crocodiles or serpents; the edges are bordered with painted manders, labyrinths, and grecques, in rows variously combined.

“It appears that to the north of the cataracts, in the straits of Baraguan, there are caverns filled with bones similar to those I have just described.” * * *

¹ Ulloa, vol. i, pp. 366–369.

² Vol. i, p. 92.

"No traces of the precious metals have been found in the caverns which have served the natives of Guiana for ages as sepulchres. This circumstance proves that even at this period, when the Caribs and other travelling nations made incursions to the southwest, gold had flowed in very small quantities from the mountains of Peru towards the eastern plains.

"Wherever the granitic rocks do not present any of these large cavities caused by their decomposition, or by an accumulation of their blocks, the Indians deposit their dead in the earth. The hammock (*chincoro*), a kind of net in which the deceased had reposed during his life, serves for a coffin. This net is fastened tightly around the body, a hole is dug in the hut, and there the body is laid. This is the most usual method according to the account of the Missionary Gili, and it accords with what I myself learned from Father Zea. I do not believe that there exists one tumulus in Guiana, not even in the plains of the Casiquiare and the Essequibo. Some, however, are to be met with in the Savannahs of Varinas, as in Canada, to the west of the Alleghanies. (Mummies and skeletons contained in baskets were recently discovered in a cavern in the United States. It is believed they belonged to a race of men analogous to that of the Sandwich Islands. The description of these tombs has some similitude with that of the tomb of Ataruipe.) It seems remarkable enough that, notwithstanding the extreme abundance of wood in these countries, the natives of Oronoco were as little accustomed as the ancient Scythians to burn the dead. Sometimes they formed funeral piles for that purpose; but only after a battle, when the number of the dead was considerable. In 1748, the Parecas burned not only the bodies of their enemies, the Tamanacas, but also those of their own people who fell on the field of battle. The Indians of South America, like all nations in a state of nature, are strongly attached to the spot where the bones of their fathers repose. This feeling, which a great writer has beautifully painted in the episode of *Atala*, is cherished in all its primitive ardor by the Chinese. This people, amongst whom everything is the produce of art, or rather of the most ancient civilization, do not change their dwelling without carrying along with them the bones of their ancestors. Coffins are seen deposited on the banks of great rivers to be transported, with the furniture of the family, to a remote province. These removals of bones, heretofore more common among the savages of North America, are not practised among the tribes of Guiana; but these are not nomad like nations who live exclusively by hunting."¹

Dr. Morton, in his "*Crania Americana*," gives, as an additional evidence of the unity of race and species in the American savage nations, the singular fact that, from Patagonia to Canada, and from ocean to ocean, and equally in the civilized and uncivilized tribes, a peculiar mode of placing the body in sepulture has been practised from time immemorial. This peculiarity consists in the *sitting posture*.

Dr. Morton illustrates this characteristic by a plate and drawing of the mummy of a Muysca Indian of New Grenada. In this instance the body is in a sitting posture, the legs being flexed against the abdomen, and the feet turned inwards. The arms are also bent so as to touch the chest, the chin being supported in the palms of the hands, and the fingers received into the hollow beneath the cheek bones. This interesting relic was brought from New Grenada, in South America, by the late Charles Biddle, Esq., who presented it to the Academy of Natural Sciences, of Philadelphia, where it is now preserved. The body is not embalmed, but only desiccated; yet the muscles are so well preserved as to render it probable that some antiseptic fluid may have been applied to them.

Dr. Morton traces this singular custom from south to north, and we give his observations in full, as they possess great interest to the present inquiry, premising that a large number of the examples to which he refers have already been referred to.

¹ Personal Narrative, Trans., vol. ii, pp. 482-489.

"The Moluches and Pampas of Patagonia bury their dead in large square pits. The bodies are placed in a row, *sitting*, with all the weapons and other property which had belonged to the dead.¹ Dobrizhoffer also observes that the equestrian tribes of that country 'prepare the corpse in such manner that the knees touch the face.'"

"The Indians of Chili had the same customs, but they exposed their dead on a stage above ground.²

"The Coroados of Brazil place the body in a sitting posture in a large pot, which is buried in the ground amidst cries and lamentations.³

"The Paraguas of Paraguay place the dead in a similar attitude⁴ This custom as practised among the Atures, in the Valley of the Orinoco, has already been stated

"Garcilasso de la Vega states that in the year 1560, he saw five embalmed bodies of Peruvian Incas, three men and two women. 'They were seated in the manner of INDIANS, with the hands across upon the breast, and their eyes toward the earth.'⁵ 'The mountain Indians,' says Herrera, 'commonly build their tombs high, like towers, and hollow; and they buried their dead bowing the body, their thighs bound and in the sitting attitude' " Dr. Ruschenberger, who personally exhumed several mummies near Arica, states that 'the body was placed in a squatting posture, with the knees drawn up and the hands applied to the side of the head.'⁶"⁷ Dr. Morton himself examined the desiccated bodies of six Peruvians, all of which were in the same position.

"The Indians of New Grenada followed the same custom, as is proved by the annexed illustration. The Spanish residents of that republic have a tradition that the natives, flying from the violence of their conquerors, died in caves and other obscure places, in an attitude which truly seems indicative of despair. Some very ancient monuments are said by Herrera to have been discovered by the early Spaniards near Zenu, in Venezuela: 'These graves or tombs were magnificent, adorned with broad stones, into which the bodies were placed in a sitting posture.'⁸

"The Mexicans sometimes burned and sometimes buried their dead; when they buried them it was 'in deep ditches formed of stone and lime, within which they placed the bodies in a sitting posture, on low seats, or *icpalli*.'⁹ The same author adds, that Quinetzin, one of the early Chichimecan kings of Mexico, was embalmed 'and afterwards placed in a great chair, clothed in royal habits.'¹⁰

"When a Carib died, his body was placed in the grave in an attitude 'resembling that in which they crouched round the fire or the table when alive, with the elbows on the knees, and the palms of the hands against the cheeks.'¹¹

"The Muskogeas or Creeks had a similar usage.¹² The latter author adds that the Arkansas had the same practice, 'with the addition of tying the head down to the knees.'¹³

"The Alibamons bury their dead in a sitting posture; in order to justify this custom they say that man is upright, and has his face turned towards heaven, which is to be his habitation.¹⁴

"On the discovery of the Mammoth cave in Kentucky, a woman was found in a state of complete desiccation. 'She was buried in a squatting form, with the knees drawn up close to the breast, the arms bent, with the hands raised, and crossing each other about the chin.'¹⁵

"Dr. Morton was informed by Mr. Nuttall, that such was the custom of the Osages of Missouri;

¹ Falkner's Patagonia, quoted in Appendix to Molina.

² Hist. Abipones, i, p. 132.

³ Forster, Obs. during a Voyage Round the World, p. 564.

⁴ Spix and Martius, Trav. in Brazil, ii, p. 250.

⁵ De Azara, Voy. dans l'Amérique, ii, p. 143.

⁶ Comment., Book V, Chap. 29.

⁷ Hist., Dec. III, Lib. 9, Cap. 3.

⁸ Crania Am., p. 109.

⁹ Hist. Amer., iv, p. 221.

¹⁰ Clavigero, Hist. of Mexico, B. VI.

¹¹ Idem, B. II.

¹² Sheldon, in Archæolog. Amer., i, p. 378; Sir W. Young, Account of the Caribs, p. 8.

¹³ Bartram, Travels, p. 515; Romans, History of Florida, i, p. 98.

¹⁴ Idem, p. 101.

¹⁵ Le Bossu, Trav. in Louisiana, i, p. 157.

¹⁶ Archæolog. Amer., i, p. 359.

of the Omahaws;¹ of the Mandans;² of the Potowatomies;³ of the Chippeways;⁴ of the Delawares;⁵ of the Nahants and other tribes of Lenape in New England.⁶ The present town of Salem, in Massachusetts, is the site of the old village of the Naumkeags; on making an excavation a few years since, many skeletons were found, 'placed very near each other, with the knees drawn up to the breast, and the hands laid near the face, which was directed to the east.' Dr. Pearson had a drawing of the skeletons made *in situ*.

"In respect to the Canadian Indians, Charlevoix observes: 'The dead man is painted, enveloped in his best robe, and, with his weapons beside him, is exposed at the door of his cabin in the posture which he is to preserve in the grave; and this posture is that which a child has in the bosom of its mother.'"

"Some excavations at Goat Island, at the Falls of Niagara, have revealed the same fact."

Dr. Morton was assured by Dr. Troost that the mounds he opened in Tennessee contained skeletons in the same attitude; and Lieutenant Mather made a similar communication to Dr. Morton in reference to a mound examined by him in Wisconsin.

From these examples Dr. Morton concludes that, notwithstanding the diversity of language, customs, and intellectual character, this usage may be traced throughout both Americas, and affords collateral evidence of the affiliation of all the American Nations.¹⁰—*Crania Amer.*, pp. 244–246.

We have now carefully examined the modes of burial practised by the American aborigines in extenso, and it is evident that the ancient race of Tennessee is distinguished from all others by their peculiar method of interment in rude stone coffins.

Whilst the custom of burying the dead in the sitting posture was almost universal with the various tribes and nations of North and South America, the ancient inhabitants of Tennessee and Kentucky buried most commonly in long stone graves, with the body resting at length, as amongst civilized nations of the present day in Europe and America. The method of inclosing the body in a box or sarcophagus of wood or stone appears to have originated with the Egyptians, and was employed both by the Greeks and Romans, and it is from these nations most probably that the custom extended, or rather was transmitted to the modern civilized nations.

During a recent visit to Scotland, England, Wales, and France, I examined with care the various museums with especial reference to the mode of burial practised

¹ James, *Exped.*, i, p. 224.

² Keating, *Exped.*, i, p. 115.

³ Smith, *Hist. of New Jersey*, p. 137.

⁴ Dr. Pearson's Letter to Dr. Morton.

⁵ Ingram's *Manual*, etc., p. 63.

¹⁰ This practice is not exclusively American. Mr. Edwards (*Hist. of the West Indies*, Book I, Appendix) cites Herodotus for its prevalence among the Nassamonies, a people who inhabited Northern Africa between Egypt and Carthage; and Cicero records it as a usage of the ancient Persians. The modern Circassians, on the death of a nobleman, "set up a high wooden bed in the open air, upon which they place the body of the deceased in a sitting attitude after the bowels have been taken out;" but the interment, which is eight days later, is in the recumbent posture. (Klaproth, *Caucasian Nations*, p. 337.) The New Hollanders sometimes bury their dead in this attitude. (Breton, *N. South Wales*, p. 203.) The Hottentots, says Kolbein, double up the corpse "neck and heels, much in the manner of a human fœtus." (*Present State of Cape of Good Hope*, p. 315.) The people of the Tonga Islands, Pacific Ocean, inter their dead in this position (Marriner, *Tonga Islands*, p. 211); and Kotzebue has also observed it at the islands of Radack and Ulea. (*Voyage of Discovery*, iii, pp. 173, 211.)—*Crania Americana*, p. 246.

⁶ Lewis and Clarke, *Exped.*, i, p. 163.

⁷ Bartram, *Trav.*, ii, p. 266.

⁸ Warren, *Compar. View*, etc., p. 134.

⁹ *Journal d'un Voyage*, etc., vi, p. 107.

by the ancient inhabitants of these countries, and in the Antiquarian Museum of Edinburgh I saw relics which had been taken from an ancient burial ground near the city, in which the dead were inclosed in rude stone coffins similar to those of the ancient race of Tennessee and Kentucky. I was informed that history threw no light upon the time when the bodies were deposited in the rude stone coffins, and they were referred to an era, at least as old as the Roman Conquest of Britain.

In looking at the rude stone coffins of Tennessee I have again and again been impressed with the idea, that in some former age this ancient race must have come in contact with Europeans, and derived this mode of burial from them.

This view is sustained, not only by the presence of copper crosses, and of vases with crosses and scalloped circles painted around them, and of bones evidently diseased by *syphilis*, in the stone graves, but also by certain traditions formerly preserved by the surrounding Indian tribes.¹

It will be seen from the subsequent investigations into the contents of the stone graves and mounds of the aborigines of Tennessee and Kentucky, that, if they were brought in contact with the whites, an amalgamation was formed, that the Indian element preponderated, and that the mixed race retained chiefly its ancient customs and religion

¹ See Haywood, pp. 217-219.

CHAPTER III.

MOUNDS, FORTIFICATIONS, AND EARTHWORKS.

NUMEROUS mounds of various dimensions are found on the banks of the Cumberland, Big Tennessee, Little Tennessee, French Broad, Hiawassee, Elk, Harpeth, Duck, and Stone Rivers, and on the streams which empty into the Mississippi, running from the dividing ridge between that river and the Tennessee.

As a general rule, these mounds have been erected upon rich alluvial bottoms, and are either surrounded by extensive earthworks or are located in the neighborhood of the fortifications which mark the sites of ancient towns.

The mounds vary in number and dimensions with the extent and richness of the valleys and the size of the earthworks. The smallest are not more than a few feet in height, and about thirty feet in diameter; whilst the largest attain a height of seventy feet, and cover from one to two acres of ground.

Many of the smaller mounds were used for the burial of the dead, others for purposes of religious sacrifice and for the burning of the dead, whilst the largest pyramidal mounds were most probably the sites of the temples and council-houses of the aborigines.

Extensive fortifications several miles in extent, inclosing two systems of mounds, and numerous stone graves, lie along the Big Harpeth River about sixteen miles below Old Town, at Mound Bottom, and on Osborn's Place. Within these extraordinary aboriginal works, which inclose the sites of two ancient cities, are found three pyramidal mounds about fifty feet in elevation, and each one exposing about one acre on its summit; and, besides these, are numerous lesser mounds.

Such structures must have required the labor of a considerable population for a series of years; and the erection of these earth pyramids must have been slow and tedious, as the aborigines were without beasts of burden, and the immense masses of earth must have been carried by hand in baskets and skins.

The old road or trail which connected these ancient aboriginal towns can still be recognized in the forest, the well-worn and compact path being in some places a foot or more lower than the general surface of the surrounding soil.

Similar fortifications and mounds are found higher up on the same river, at Old Town, near Franklin; and it is evident, from these facts, that a chain of fortified towns extended in former times all along the Valley of the Big Harpeth. From careful excavations, examinations, and measurements, together with comparison of the crania, I am convinced that the mounds and fortifications of the Big Harpeth, Cumberland, and other rivers of Tennessee, were erected by the same extinct aboriginal race.

I have examined similar works of an extensive character on the Mississippi in the vicinity of the present town of Hickman, Tennessee.

One of the most remarkable aboriginal remains in Tennessee was found in the fork of Duck River, near Manchester, and is known as the *Stone Fort*. The walls of the structure were formed of loose stones gathered from the bed of the river. The gateway, which opens towards the neck of land lying between the branches of the river, is carefully protected by an inner line of works so constructed that the enemy entering the area would be received into a cul-de-sac. Directly in front of this gateway, and about half a mile distant, stands a remarkable mound, the structure of which is similar to that of the walls of the *Fort*, being composed of stones, the largest of which do not exceed a foot and a half in diameter. This oblong mound is 600 feet in circumference, and 40 feet in height, and the labor of collecting and depositing the loose stones by hand must have been considerable.

With these preliminary remarks I proceed to give a detailed account of the results of my explorations. It has been deemed best not only to record the general results of the explorations of the mounds, fortifications, and graves, but also to give, at the same time, descriptions of the various relics.

Stone Grave Burial Mounds.

In a small mound, about forty-five feet in diameter, and about twelve feet in height, which I explored, about ten miles from Nashville, near Brentwood, on the banks of a small rivulet issuing from a cool never-failing spring of water, and which contained, perhaps, one hundred skeletons, the stone graves, especially toward the centre of the mound, were placed one upon the other, forming in the highest part of the mound three or four ranges. The oldest and lowest graves were of the small square variety, whilst those near or on the summit, were of the natural length and width of the inclosed skeletons. In this mound, as in other burial places, the bones in the small square stone graves were frequently found broken; and whilst some graves of this description contained only a portion of an entire skeleton, others contained fragments of two or more skeletons mingled together. These square graves were not of sufficient depth to receive the body in a sitting posture, and appeared to have been the receptacles of the bones after the flesh had been removed. The small mound now under consideration was one of the most perfect in its construction, the lids of the upper stone cists being so arranged as to present a uniformly rounded, sloping rock surface. This mound was situated on the western slope of a beautiful hill, covered with the magnificent growth of the native forest. The remains of an aboriginal earthwork were still visible surrounding the site of an extensive encampment and several mounds. In a large and carefully constructed stone tomb, the lid of which was formed of a flat rock over seven feet in length and three in width, I found the bones of an aged individual. The skeleton was about seven feet in length, and the huge jaws had lost every vestige of teeth, the alveolar processes being entirely absorbed. In a grave occupied by what appeared to be a female skeleton, there was near the head a small compartment or stone box, separated from the main coffin by stone

slabs, within which were discovered the bones of an infant. Pieces of pottery were found with the bones in the stone coffins, but no entire vase or vessel, or stone implement, or idol, was discovered in this mound. Although great care was exercised, it was found to be impossible to extract the crania entire, owing to the soft, decayed state of the bone. An examination of the crania *in situ*, after the removal of the surrounding soil, showed that they were all more or less compressed in the occipital region into a pyramidal form, having a long transverse or parietal diameter. The jaw bones were massive, with widely diverging rami, and the nasal bones were large and prominent.

The aborigines of Tennessee scooped out the floor of the tent or wigwam, so as to leave a circular depression with elevated borders. Within the line of the earth-works the circular depressions of the ancient habitations or wigwams were very distinct and easily recognized. Certain low mounds, not more than from two to four feet in height, with depressions in the upper surface, as in the case of the extensive remains on the Big Harpeth, at Osborn's and Mound Bottom, appear to have once formed the floors of large circular wigwams. These hollowed sites are found most generally in regular rows within the line of fortification; I have, however, in some localities, seen them in great numbers on the banks of the water-courses at considerable distances from the main works, and, in such cases, they occupied favorable positions for a fair and extended prospect or out-look of the lowlands up and down the stream. In many localities the sites of these ancient towns have been cultivated for a number of years, and the marks of the habitations have been, to a great extent, obliterated by the plow-share.

The Mandans appear to have formed their wigwams in a similar manner, and to have left traces of their encampments. Catlin, who descended the Missouri River from the Mandan Village to St. Louis, a distance of 1800 miles, from the reputed remains of the ancient localities of this tribe, was fully convinced that he had traced them down nearly to the mouth of the Ohio River. From similar appearances, which this author observed in the interior of Ohio, he conceived that this tribe had formerly occupied that part of the country, and from some cause or other were put in motion, and continued to make repeated moves until they arrived at the place of their residence at the time of their extinction on the Upper Missouri. Catlin gives a chart of the positions of these ancient towns, and also of the numerous fortifications which are now remaining on the Ohio and Muskingum Rivers, in the vicinity of which he believed the Mandans once lived, and refers these works to this tribe of Indians. He expresses his belief that they derived their knowledge of the art of fortification from the Welsh under Prince Madoc or Madawc, who sailed with a colony from North Wales in the early part of the fourteenth century, and is supposed to have settled and mingled with the aborigines somewhere in the Mississippi Valley. According to this original observer of the Indian tribes of North America, the existence of the Mandan villages is known by the excavations of two feet or more in depth, thirty or forty feet in diameter, and of a circular form, made in the ground for the foundations of their wigwams, which leave decided remains for centuries.

The Mandans always fortified their towns by a strong picket or stockade, and

thus successfully withstood the assaults of their enemies. The Riccarees and Minetarees build and fortify their wigwams in the same way, but Catlin supposes that they derived the knowledge from the Mandans. He finds a further confirmation of his views in the fact that the pottery manufactured by the Mandans was equal in beauty and excellence to that exhumed from the ancient graves and tumuli of the Mississippi Valley. It is evident, therefore, that the art of fortification, as well as the mode of constructing wigwams, and the art of fashioning well-formed and ornamented pottery practised by the mound builders and stone-grave race of Tennessee, were preserved by the Mandans up to the time of their supposed extinction by the smallpox; and it is well known that, at the time of the discovery of the American continent, various Indian nations and tribes fortified their towns by earthworks and stockades, erected burial, sacrificial, and ornamental mounds and earth pyramids, and possessed the art of manufacturing well-formed vessels. The fact that the Mandans erected earthworks, constructed their wigwams in a certain manner, and practised certain arts, by no means justifies the conclusion of Catlin, that these Indians were the exclusive authors of the extensive works found in Ohio, Kentucky, and Tennessee. Authentic historical records exist to show that the monumental remains found in the Mississippi Valley, and along the tributaries of this great river, must be referred to various aboriginal nations.

The hill on which the residence of Colonel Overton stands, about nine miles from Nashville, was in former times occupied by an aboriginal settlement. The circular depressions of the wigwams are still visible in this locality. The aborigines appeared to have been attracted to this place by the noble spring which bursts out at the foot of the hill. "Thousands of bones" were said to have been exhumed in excavating the basement and cellar of the family mansion, and the summit of the hill appeared to have been crowned by a burial mound which has been almost entirely destroyed. The crest and southeastern slope of the hill are covered with stone graves, many of which have been opened. A large number are concealed by the rank growth of weeds and grass. Those which I examined at this locality were all constructed on the same plan. Here, as elsewhere, the graves were of various sizes, from that just sufficient to inclose the remains of a little child up to the long stone coffin of eight feet. Upon careful examination of the smallest graves, I found, that, so far from inclosing a race of *pigmies*, they contained remains of children and infants. I found the teeth in all stages of development, through the period of dentition up to the appearance of the *wisdom teeth*.

The graves which I examined at this locality were all formed on the same plan; the earth having been excavated to the depth of about eighteen inches, and the dimensions of the excavation corresponding to the size of the skeleton. The sides of each were lined with carefully selected flat stones, forming a perfect parallelogram, with a single stone for the head and foot. The skeleton or body of the dead person was then deposited at full length. In the square short grave the skull was placed in the centre and surrounded by the long bones. After great labor I exhumed an entire skull from one of these square, short graves. The long bones were arranged

in the manner indicated, and several parts of the skeleton were wanting, thus showing that the skeleton, or rather its component parts, had been deposited in this grave after the flesh had been separated from the bones.

The occipito-frontal arch of this cranium is quite perfect, but its general outline, when viewed from the base or the vertex, is irregular. The occiput is but slightly flattened, and is divided into two distinct portions by a well-marked suture running directly across from the inferior angles of the parietal bones. Below this suture the occiput presents a well-marked protuberance, which is, as far as my observation extends, uniformly absent from the crania of the stone graves. In addition to the division of the occiput into two distinct portions, we observe five other intercalated bones; three upon the left border, and two upon the right border of the occipital bone. This skull had evidently been subjected to little or no compression during its early growth in infancy and childhood, and pressure was evidently not the cause of these divisions of the occiput. Both the facial angle and the internal capacity are below the maximum of the crania of the stone grave race of Tennessee; the frontal and parietal diameters are less, and the occipito-frontal arch is greater than the average measurements. Thus: facial angle, 78° ; internal capacity, 79 cubic inches; longitudinal diameter, 7 inches; parietal diameter, 5.2 inches; frontal diameter, 3.9 inches; vertical diameter, 5.8 inches; intermastoid arch, 14.7 inches; intermastoid line, 4.6 inches; occipito-frontal arch, 15.2 inches; horizontal periphery, 19.5 inches; diameter of face and head, 7.4 inches; zygomatic diameter, 5 inches.

Frequently an earthen vessel, composed of a mixture of shells and clay, was laid under or by the side of the head, or about the middle of the stone cist opposite the pelvic bones. In a large long grave of a young man, whose jaw-bones contained the wisdom teeth still encased, a small dark vase with two small holes in the rim, and with two animals resembling a beaver and a fish raised on the side, was exhumed. This small vase or cup was probably worn suspended from the neck, and had been apparently placed in the hand of the skeleton, the crumbling bones of the fingers surrounding it. The measurements are: 4 inches in the long diameter, and 3.2 inches in the short diameter. Figs. 1 and 2 present a general outline of the top and side of this specimen.

Fig. 1.

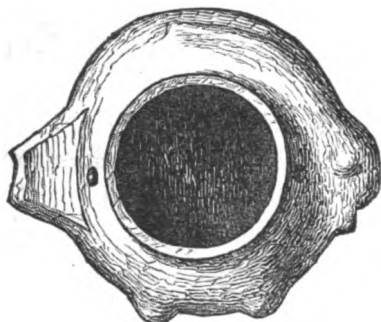


Fig. 2.



Fig. 1, front view: Fig. 2, side view, of a small vase composed of clay and crushed shells, from a stone coffin at Colonel Overton's, near Nashville, Tennessee. About one-fourth the natural size.

Graves and burial mounds are also found at and near Brentwood; and from one of the stone graves of this locality I obtained the small vase or drinking cup, fashioned like a river shell, represented in outline in Fig. 3.

This specimen is $5\frac{1}{2}$ inches in the longest diameter.

Fig. 3.



Fig. 4.



Fig. 3. Drinking cup, composed of dark clay and crushed shells, from a stone grave near Brentwood, Tennessee. About one-half the natural size.

Fig. 4. Hollow image composed of clay and crushed shells, from a stone grave in a burial mound, near Brentwood, Tennessee. One-half the natural size.

The small image represented in Fig. 4 was, in like manner, exhumed from a stone grave at Brentwood.

This object is $4\frac{1}{2}$ inches in height, and represents a human figure in a sitting posture, with the hands on the knees. The breast and back of the figure resemble those of human beings in whom the spine has been diseased and curved.

From a stone grave situated upon the slope of the hill on which stands the residence of Colonel W. D. Gale, near Nashville, I exhumed a small image representing a short deformed female in a kneeling posture. It will be seen from the outline figure of this image, Fig. 5, that the nose is prominent, the forehead retreating, and that the head is ornamented with a crown. This image is composed of clay and crushed shells, is hollow within, and 4.3 inches in height.

Fig. 5.



Small image, representing a short deformed female in a kneeling posture, composed of crushed shells and dark clay, from a stone grave situated on the slope of the hill, above the spring, near the residence of Colonel W. D. Gale, a short distance from Nashville, Tennessee.

Sacrificial and Burial Mounds.

Some of the burial mounds were evidently used also for religious purposes. Thus in a small mound, about one hundred feet in diameter, and about ten feet high, which I explored on the eastern bank of the Cumberland River, opposite the city of Nashville, across from the mouth of Lick branch, at the foot of a large mound,

which had been apparently used as a residence or site of a temple, I discovered the following remains.

In the centre of the mound, about three feet from its surface, I uncovered a large sacrificial vase or altar, forty-three inches in diameter, composed of a mixture of clay and river shells. The rim of this flat earthen vessel was three inches in height. It appeared to have been moulded in a large wicker basket, formed of split canes and the leaves of the cane, the impressions of which were plainly visible on the outer surface. The rim of this earthen vessel or sacrificial altar appeared to be almost mathematically circular. The surface of the "altar" was covered with a layer of ashes, about one inch in thickness. These presented the appearance and composition of incinerated animal matter. The antlers and jaw-bone of a deer were found resting on the surface of this object. The edges of the *altar* or fire vessel, which had been broken off apparently by accident, were carefully placed over the layer of ashes, and then covered with nearly three feet of earth; thus the ashes were preserved to a remarkable degree from the action of the rains.

Stone coffins or rude sarcophagi were ranged around this central object, with the heads of the dead toward the centre and the feet toward the circumference of the mound, resembling the radii of a circle.

The inner circle of graves was constructed with great care, and all the bodies buried around the altar were ornamented with beads of various kinds; some of which had been cut out of large sea-shells, others out of bone, and others again were composed of entire sea-shells of small size, and punctured so as to admit of the passage of the thread upon which they were strung. The large shell beads

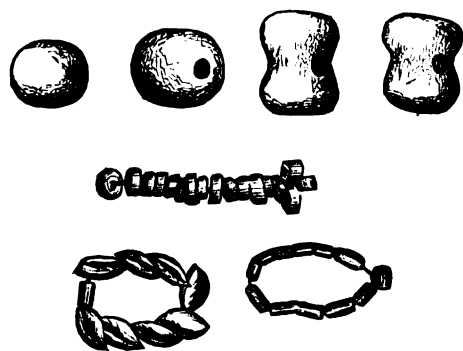
were found most generally by the side of the crania, and upon the breast, as if they had constituted ear-rings and necklaces; the smaller beads were found most generally surrounding the waist, and the arm and leg bones.

The various forms of beads from this mound are represented in Fig. 6.

In a carefully constructed stone sarcophagus, in which the face of the skeleton was looking towards the setting sun, a beautiful shell ornament was found resting upon the breast bone of the skeleton. This shell ornament is 4.4 inches in diameter, and it is ornamented on its concave surface with a small circle in the centre, and four concentric bands

differently figured in relief. The first band is filled by a triple volute; the second is plain; the third is dotted, and has nine small round bosses carved at unequal distances upon it. The outer band is made up of 14 small elliptical bosses, the outer edges of which give to the object a scalloped rim. This ornament on its concave figured surface had been covered with red paint, much of which was still visible; the convex smooth surface is highly polished, and plain with the exception of three concentric marks. The material out of which it is

Fig. 6.

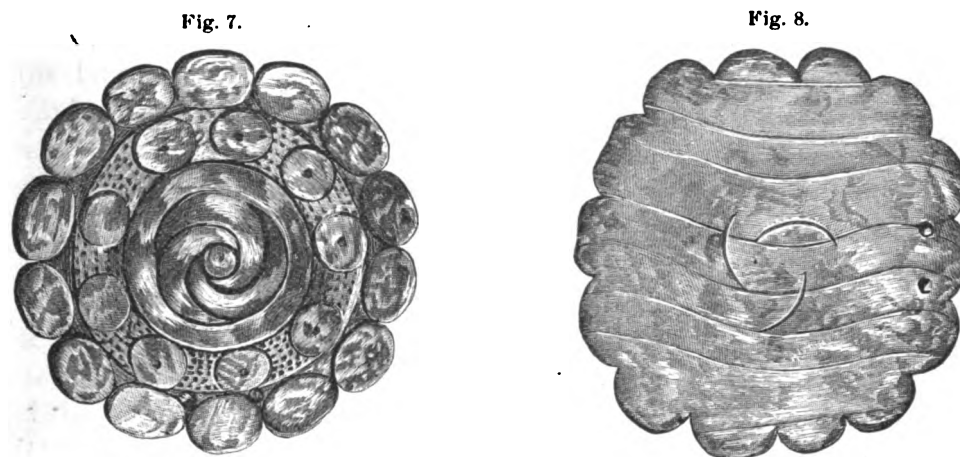


Various forms of shell beads from the stone coffins in the mounds on the banks of the Cumberland River, opposite Nashville, Tennessee. One-fourth the natural size.

formed was evidently derived from a large flat sea-shell; no fresh-water mussel in any part of the waters of Tennessee and of the surrounding States could furnish a uniform thickness of flat shell equal to this; and the regularity of its convex and concave surfaces, as well as the perfection of all its parts, and the uniformity of its thickness (about $\frac{3}{16}$ of an inch) are proofs that it must have been derived from a large shell from the sea-coast.

The form of the circles or "suns," carved upon the concave surface, is similar to that of the paintings on the high rocky cliffs on the banks of the Cumberland and Harpeth.

Figs. 7 and 8 represent the carvings on this shell ornament.



Figs. 7 and 8. Shell ornament from the breast of a skeleton, lying in a carefully constructed stone coffin, in the summit of a mound on the banks of the Cumberland River, opposite Nashville, Tennessee. Figure 7 represents the concave, carved, and painted surface, and figure 8, the convex surface.

This ornament, when found, lay upon the breast bone, with the concave surface uppermost, as if it had been worn in this position, suspended around the neck, as the two holes for the thong or string were in that portion of the border which pointed directly to the chin or central portion of the lower jaw of the skeleton. The marks of the thong by which it was suspended are manifest upon both the anterior and posterior surfaces, and in addition to this the paint is worn off from the circular space bounded below by the two holes.

This skeleton had around the neck, arms, waist, and ankles, numerous beads of various kinds. The smaller beads were all formed of small sea-shells, represented in figure 6. This form of bead was but rarely found in the stone graves; the majority of the graves containing either no beads at all, or only the small round and oblong kinds carved out of bone and shell. About one pint of these small perforated sea-shells were found with this skeleton, and the greatest number lay around the waist, as if the body had been encircled with a belt ornamented with these shells.

This stone grave, which was about two feet beneath the surface (that is, the lid of the coffin was covered with this thickness of earth), had been constructed with such care that little or no earth had fallen in, and the skeleton rested as it were in a perfect vault.

The cranium, which from the delicacy of the bones, and especially of the jaws, was judged to be that of a female, was in a remarkable state of preservation. The skeleton was dry, and seemed to be unimpaired as far as the general shape and outlines of the bones are concerned; but these were very light, and crumbled readily when compressed, thus indicating the removal of the animal matter to a great extent. I varnished the skull immediately after lifting it out of the sarcophagus, and thus preserved it entire, with the exception of a small portion of the occipital bone, in the left side of the back of the head, where the skull rested upon the earth.

This cranium is one of the most perfect in its shape, and striking in its outline, amongst the skulls which I exhumed and critically examined, measured, and figured, of this aboriginal race. The oval of the skull is unusually perfect, the nose is high and arched, and the teeth are perfect, 16 above and 16 below, and although considerably worn by use and age, only one small cavity exists in one of the anterior molars, on the right side of the superior maxilla. The occiput is less flattened than in many other crania of this race; nevertheless, this characteristic is readily observed; and when the skull is viewed anteriorly or posteriorly, it is evident that the pressure was exerted more upon the left side than upon the right. The measurements of this specimen are as follows: facial angle $76^{\circ}.5$; internal capacity 75 cubic inches; longitudinal diameter 6.3 inches; parietal diameter 5.4

inches; frontal diameter 4.3 inches; vertical diameter 5.5 inches; intermastoid arch 15 inches; intermastoid line 5 inches; occipito-frontal arch 13.5 inches; horizontal periphery 19 inches; length of head and face 7.5 inches; zygomatic diameter 5.1 inches.

In the grave of a child, near the right side of the stone grave, the description of which has just been given in detail, and at the foot of another grave which contained a skeleton seven feet in length, and apparently of a male of great age, as manifested by the loss of the teeth, and the absorption of the alveoli, a small black image was exhumed.

The features of this image, with its straight retreating forehead and prominent nose, resemble those of the Aztec or ancient Mexican sculptures. The figure is kneeling, with the hands clasped across the breast, in the *attitude of prayer*. This object is formed of a mixture of black clay and pounded shells, and is exceedingly hard, with a smooth polished surface. It might with propriety be called a vase, as it is hollow, with the



Image composed of dark colored clay and crushed river shells, from the stone grave of a child, on the summit of a burial and "Sacrificial" mound; on the banks of Cumberland River, opposite Nashville, Tennessee. One-fourth the natural size.

mouth or opening in the back of the head, and not at the summit as is usual with the vases of the Egyptians and Romans.

Fig. 9 represents a rough sketch of this image.

The under jaw of the skeleton of the aged mound builder, whose grave lay near that containing the black image, was of remarkable size, and had only one long tooth or fang, like the tusk of a wild animal.

On the left of the grave which contained the carved shell ornament, previously described, lay two other carefully constructed stone graves, in one of which numerous shell beads were found encircling various portions of the skeleton, and in the other a large sea conch. The interior portion or spiral of the shell had been carefully cut out, and it was probably used as a drinking vessel or as the shrine of a small idol, as had been observed by Dr. Troost. From the great distance whence these large marine shells must have been brought, it is reasonable to suppose that they were considered of great value by the aborigines.

The grave furnishing this vessel fashioned from a shell also contained two copper ornaments, lying on the side of the cranium of the skeleton. These ornaments should more properly be described as two round pieces of wood, perforated through the centre, and covered with a layer of copper. They appear to have been suspended from the ear by a thong, since the remains of small leather strings were observed in the central holes. I discovered similar ornaments of wood, but more finely carved, and covered with a thin layer of copper, in a stone grave near Nashville, at the residence of Colonel W. D. Gale. Upon the summit of the mound now under consideration, about six inches below the surface, immediately above the large circular earthen vessel, I also discovered several pieces of thin, corroded copper, which appeared to have formed originally a plate, vessel, or mask. A copper mask, which was fashioned with human features, is said to have been found in a mound near Franklin, Tennessee. From a stone grave near Lick Branch, I obtained several small, round masses of pure silver. Silver coins are said to have been found in a stone grave on the banks of the Cumberland, opposite Nashville, but after diligent inquiry, I was unable to obtain any reliable information. The wooden ornaments covered with copper previously described, were one inch in diameter, and presented the general appearance of Fig. 10.

Fig. 10.



Wooden ornament coated with copper, from a stone grave, in a mound on the bank of Cumberland River, opposite Nashville. One-half the natural size.

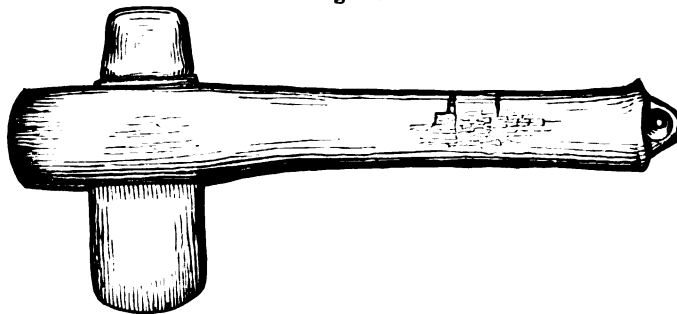
The metal was almost entirely reduced to the oxide and carbonate of copper.

Two skeletons, apparently those of a man and a woman, were found on the southern slope of the mound, near the altar: they had been interred in the earth, without any stone coffins. At the side of the female skeleton, apparently encircled by the bones of the fingers, a highly finished, light reddish-yellow vase was found painted with regular black figures. This vase is composed of light-colored clay and crushed shells: height $7\frac{8}{10}$ inches; circumference $18\frac{5}{10}$ inches. The body of the vase is divided into segments by four broad depressions extending from the base nearly to the neck. Each of the four divisions is bordered with black, and

in the centre of the circles thus formed is an inner black circular figure. This vase had evidently been subjected to the action of fire; and in its general appearance and finish compares favorably with the best Mexican and Peruvian vases that have come under my observation.

Under the head of the male skeleton I found a carefully fashioned and highly polished stone hatchet, with a double edge, and with the entire handle and ring carved out of a compact chloritic stone. On each side of the top of the handle are three grooves. A reduced drawing of this warlike weapon, which is one of the most beautiful and perfect stone implements ever exhumed from the aboriginal remains within the limits of the United States, and which appears to constitute a special type, differing from both American and European stone implements, is represented in Fig. 11. Length 13.5 inches; blade between the edges 6.1 inches; greatest width of the blade 2.5 inches; greatest width of the handle 2 inches; least width of the handle 1.5 inches.

Fig. 11.



Double-headed stone hatchet or battle axe, formed of green chloritic stone, exhumed from a mound on the bank of the Cumberland River, opposite Nashville.

A row of graves extended around the inner circle, which we have described as radiating from the altar. The stone coffins of this outer circle lay at right angles to those of the inner circle, and rested as it were at the feet of the more highly honored dead. In the outer graves no ornaments were found, and only a few arrow-heads and fragments of shells and pottery. The arrow-heads are very small, and most carefully fashioned with very sharp points. Fig. 12 represents one of these flint arrow-heads.

Fig. 12.



Arrow-head from a stone grave. One-half the natural size.

The crania from this outer circle are, as a general rule, larger and more compressed than those of the inner circle. The flattening of the occiput varies also within very wide limits. These differences were accurately indicated by the numerous photographs and outline drawings transmitted to the Smithsonian Institution in connection with the account of these explorations.

In the outer circle of this mound I exhumed the largest cranium that I was able to obtain in a perfect state from the stone graves; the internal capacity being 103 cubic inches; horizontal periphery 20.8 inches; intermastoid arch 16.8 inches;

occipito-frontal arch 15.7 inches; parietal diameter 5.9 inches; frontal diameter 4.8 inches; intermastoid line 5.3 inches; diameter of face and head 7.8 inches; zygomatic diameter 5.5 inches. The facial angle also is above the mean of the crania of this ancient race, being 81° . Dr. Samuel G. Morton, in his "Crania Americana," gives the following as the results of his measurements of the internal capacity of the cranium in the different races of men: Caucasian, in 52 skulls, the mean internal capacity in cubic inches was 87, largest in the series 109, smallest 75; Mongolian, in 10 skulls, mean 83, maximum 93, minimum 69; Malay, in 18 skulls, mean 81, maximum 89, minimum 64; American, in 147 skulls, mean 82, maximum 100, minimum 60; Ethiopian, in 29 skulls, mean 78, maximum 94, minimum 65. Upon comparison, it will be found that the internal capacity of the skull now under examination is greater than any one of the 204 Mongolian, Malay, American, and Ethiopian skulls examined by Dr. Morton, and is less than the largest Caucasian by only 6 cubic inches. The skeleton was over six feet in length, and the bones of the extremities were well formed and powerful.

Whilst the occiput of this cranium is somewhat flattened, its shape is more symmetrical, and the oval of the head more perfect, than in the majority of the crania from the stone graves. Two intercalated bones are situated at the junction of the occipital and parietal bones. The lower jaw is massive and coarse, and the teeth are somewhat worn and free from decay. The cranium from the adjoining grave is well formed and large, and bears a striking resemblance to the one just described. As the graves lay side by side, we judged that the individuals to whom these crania belonged may have been related during life. The teeth are well worn and somewhat decayed. The back of skull is more flattened on the left side than on the right; this has caused a greater prominence of the left side of the forehead, whilst the parietal protuberance is more marked, and situated further back on the right side. The effect of this unequal pressure during childhood, or rather just after birth, was to destroy the symmetry of the entire cranium, to alter the position of the foramen magnum, to throw the articulations of the lower maxilla out of the right line, and also to render one side of the face more prominent than the other. Even the symmetry of the lower jaw was destroyed by this pressure, the rami being separated more widely apart than in normal crania, and each ramus presenting a different angle and different length. This cranium, also, is one of the largest and most massive, as will be seen from the following measurements: facial angle, 80° ; internal capacity, 90 cubic inches; longitudinal diameter, 6.9 inches; parietal diameter, 5.6 inches; frontal diameter, 4.3 inches; vertical diameter, 6 inches; intermastoid arch, 15.7 inches; intermastoid line, 4.8 inches; occipito-frontal arch, 14.8 inches; horizontal periphery, 20.3 inches; diameter of face and head, 7.6 inches; zygomatic diameter, 5.5 inches. Many of these crania had evidently been subjected to considerable pressure during their early growth; and the pressure appears to have been exerted both upon the occipital and frontal bones. In the cranium, the outlines of which are given in Figs. 13 and 14, I observed that the effects of pressure had been so marked as to render the parietal diameter actually greater than the longitudinal diameter; as will be seen from the following measurements: longitudinal diameter, 6.1 inches; parietal diameter, 6.4

inches; internal capacity, 92 cubic inches; frontal diameter, 4.4 inches; vertical diameter, 6 inches; intermastoid arch, 16.5 inches; intermastoid line, 5.4 inches; occipito-frontal arch, 13.8 inches; horizontal periphery, 19.8 inches.

Fig. 13.

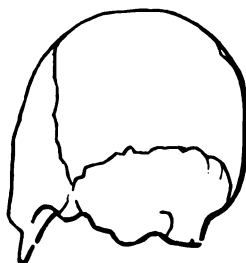
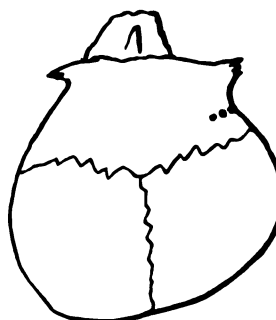


Fig. 14.



Figs. 13 and 14, outlines of a cranium, from a stone grave in a mound on the banks of the Cumberland River, opposite Nashville.

In the general outline, this cranium bears a marked resemblance to that of the Natchez, figured and described by Dr. Morton in his "Crania Americana," pp. 160-161, Plates XX and XXI. The effects of artificial compression were also visible in another well preserved cranium from a stone grave in the same mound, which afforded the following measurements: facial angle, 75° ; internal capacity, 78 cubic inches; longitudinal diameter, 6.1 inches; parietal diameter, 5.7 inches; frontal diameter, 4.3 inches; vertical diameter, 5.6 inches; intermastoid arch, 15 inches; intermastoid line, 5.2 inches; occipito-frontal arch, 13 inches; horizontal periphery, 19 inches; diameter of head and face, 7.3 inches; zygomatic diameter, 5.3 inches.

Graves also extend to the river's edge, many of which are uncovered from time to time by the crumbling of the sandy bank; the remains consisting of shells, bones, pottery, and implements of various kinds, precipitated along the shores of the river below.

Fig. 15.



Fig. 15, shell ornament from the stone grave of a child, at the foot of a mound on the banks of Cumberland River, opposite Nashville.

From the grave of a child, near the brink of the river, I took a small shell ornament, carved in the shape of a human countenance (Fig. 15).

The cranium of this child was removed with great difficulty from its stone coffin. This skull exhibits, in a marked manner, the effects of compression on the soft bones of the infantile cranium. The occiput is greatly flattened, and the bones yielding laterally to the growing brain, the parietal diameter actually varies but little from the longitudinal. The effects of compression on this cranium will be rendered evident by the following measurements: longitudinal diameter, 5.8 inches; parietal diameter, 5.6 inches; frontal diameter, 3.5 inches; vertical diameter, 5 inches; intermastoid arch, 14 inches; occipital arch, 12.4 inches; horizontal periphery, 16 inches.

I have examined, *in situ*, a large number of crania belong-

ing to children of various ages, and have concluded that the effects of pressure upon the bones of the cranium were much more marked in infancy, and that the marks or effects of pressure disappeared to a certain extent with the advance of years.

In the graves of several small children, adjacent to the one just described, I found the bones of birds and small animals. These small stone coffins were discovered near the river bank, about twenty feet from the foot of the mound.

About fifty yards higher up the Cumberland, and evidently connected with the mound previously described, are two smaller mounds, about forty feet in diameter, and about four feet high. These contained stone graves irregularly arranged, but no central earthen vessels, corresponding to that which we have designated as the *sacrificial altar*.

The graves which I opened contained no ornaments of any kind.

Several of the skeletons in these mounds bore unmistakable marks of the ravages of syphilis. In one skeleton, which appeared to manifest in the greatest degree the ravages of this fearful disease, the bones of the cranium, the long bones of the arm (the humerus, ulna, and radius), and the long bones of the thigh and leg (the femur, tibia, and fibula) bore deep erosions, nodes, and marks of severe inflammatory action. Many of the long bones were greatly thickened, presenting a nodulated, eroded, and enlarged appearance. When sections were made, they presented a spongy appearance, with an almost complete obliteration of the medullary cavities. The specific gravity of the bones was diminished, and the microscopical characters were in all respects similar to those of undoubted cases of constitutional syphilis, which I have observed in my hospital and civil medical practice. Every competent medical observer to whom these bones have been submitted, has concurred in the view that syphilis is the only disease which could have produced such profound and universal structural alterations.

I found a stone hatchet, and numerous arrow- and spear-heads, on the surface around these mounds. While examining the banks of the river in the neighborhood of these mounds, I observed strata of ashes and charcoal, pieces of shell and flint, stone implements, and numerous fragments of pottery: the fields around also abound with fragments of pottery, shells, stone implements, and splinters of flint. These remains indicated the occupancy of this locality for a considerable length of time by the aborigines.

After the most careful examination and comparison of the bones in the mound containing the large earthen vase or central "*sacrificial altar*," I failed to detect any marks of syphilis, whilst the traces of this disease were manifest in the bones of the two smaller mounds, which appear to have been the receptacles of the dead of the common people of the tribe or nation. The presence of syphilitic nodes, and marks of syphilitic ulcerations in these bones, is not only of interest in its medical aspect, but also in its bearing on the probable age of these remains. If this disease was unknown to the aborigines in this portion of America until its introduction by the Spaniards, then we have here evidence that the *stone grave race* of Tennessee were living at the time of the discovery and exploration of the North American continent by the Spaniards. This view of the question would lead to

the supposition that some of the stone graves had been made by the aborigines not more than three and a half centuries ago.

In all my research I found no implement of European manufacture within and around the mounds. The only metal discovered was copper, in the form of a thin plate, much corroded, and the thin coatings of the wooden disks, which we have described at length. No implements of iron or of any other metal were obtained.

It is worthy of note that whatever may have been the offices to which this mound had been applied, it was completed by its builders. Thus, even the ashes upon the "altar" had been carefully covered over with fragments of the pottery; and the altar as well as the graves was carefully covered with earth.

Whilst standing in the midst of these ancient "stone coffin" graveyards I have often been impressed with the belief that some fatal disease or wide-spread pestilence may have had much to do with the extinction of this once populous nation, and the filling of these extensive burying-grounds.

Across the Cumberland River, below the mouth of Lick Branch, on the same side as the city of Nashville, another mound once stood which has since been levelled in the formation of streets and in building North Nashville.

I am informed by some of the old citizens that stone graves occupied the base and flanks of the mound, and that various relics, such as vases, and spear- and arrow-heads, were exhumed, and I obtained a large flint instrument shaped like a chisel, which was said to have been taken from a stone grave within the mound. The edges were highly polished as if it had been used in various mechanical operations. This implement is represented in Fig. 16, reduced to about one-fourth the natural size; its length being $9\frac{1}{2}$ inches and its breadth 2 inches.

Fig. 16.



Fig. 17.



Fig. 18.



Fig. 16. Stone implement from a stone grave in a mound in Nashville, Tennessee, one-fourth the natural size.
 Fig. 17. Disk composed of crushed shells and clay, one-half the natural size, from a stone grave, Nashville.
 Fig. 18. Knobbed surface of the clay disk.

The singular disk composed of clay and crushed shells, represented in Fig. 17, with a handle divided into three parts, was said to have closed the mouth of a large clay jug or vase exhumed from the centre of the summit of the mound around which were ranged stone coffins.

The reverse surface of this and other similar disks was knobbed, as in Fig. 18.

A large disk of this character, composed of clay and crushed shells, which I found near the mounds on the banks of the Cumberland, opposite Nashville, was furnished with a large handle which could be readily grasped with the hand. The surface was much worn, as if the implement had been used for crushing corn,

or rubbing paint, or smoothing the skins of wild animals. I also obtained several highly polished disks of silex from the same localities, which were probably used for similar purposes. These implements may have been employed for grinding paint or crushing corn in the biconcave stone disks, cups, paint bowls, or mortars, which abound in all parts of the valley of the Cumberland and other rivers of Tennessee, one of which, found in the neighborhood of Nashville, is represented in Fig. 19.

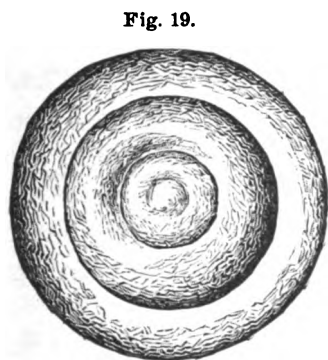


Fig. 19.



Fig. 20.

Fig. 19. Biconcave stone disk, cup, paint bowl or mortar, from a stone grave, Valley of Cumberland River, one-fourth the natural size.

Fig. 20. Celt from a stone grave within the limits of North Nashville. This highly polished stone chisel or wedge is ten inches in length, and is formed of a hard siliceous stone containing fossil remains.

I obtained numerous chisels or celts from stone graves within and around the limits of Nashville, one of the most perfect of which is represented in Fig. 20.

It appears from the testimony of John Haywood, in his "Natural and Aboriginal History of Tennessee," that the mound formerly standing within the limits of North Nashville was carefully examined by Mr. Earle, in 1821, and that, to a certain extent, the structure was similar to that of the mound which I explored directly across on the opposite bank of the Cumberland.

This is said to have been the mound upon which Monsieur Charleville had his store in 1714, when the Shawnees were driven from Cumberland by the Cherokees and Chickasaws. On the 21st of July, 1821, Mr. Earle employed men to work this mound near Nashville, then standing on the ground of David McGavoc, Esq. The mound is described as standing on the west side of the river, and on the north side of French Lick Creek, and about 70 yards from each; being round at the base, about 30 yards in diameter, and about 10 feet in height. The workmen opened a circular hole about the centre of the summit, and a ditch was dug from thence to the western extremity. They found pottery of Indian fabrication everywhere within the mound; and two or three feet beneath the summit, the jaw-bone of a carnivorous animal, and small fragments of bones, whether human or not could not be determined. About four feet below, they came to a layer of charcoal, or rather black cinders, about two inches deep, extending from the central hole 8 or 10 feet towards the west, and exhibiting an appearance which made it probable that the dirt in which it lay was once the top of the mound, and had been flattened and a large fire made upon it; and that afterwards the mound had been raised higher by the accumulation of fresh dirt. This dirt

was black, rich, and very fine, and seemed to have been brought to it in pots, the fragments of which were seen through every part of the mound. About four feet below the layer of cinders the workmen took up the tooth of a carnivorous animal, and an arrow-head of flint very neatly shaped into an acute-angled triangle. When they began the central hole they came upon some flat rocks, partly covered. After raising them, and digging about a foot below, they found a piece of metal of an oval form, about the size of a ninepenny piece of silver, but more than twice as thick, with an indented representation of the head of a woman on one side. It is supposed to have been of European manufacture, and resembled a watch seal. This medal was found beneath where the house of Mr. Charleville stood in 1714, and for many years before. This mound also had been stockaded by the Cherokees between the years 1758 and 1769. Very large burying-grounds once lay between the mound and the river, extending thence westwardly to the creek. The vast extent of the burying-ground, and the great number of interments, induced the belief that a population once resided here which greatly exceeded that of the present day.

Caleb Atwater, in his "Description of the Antiquities discovered in the State of Ohio and other Western States," has given the figure of an image found in a tumulus near Nashville, and deposited in the Museum of Mr. Clifford, of Lexington, Kentucky.¹ This object represents a man in a state of nudity, whose arms have been cut off close to the body, and whose nose and chin have been mutilated. Upon the head is a fillet and prominence. In these respects, as well as in the peculiar manner of plaiting the hair, it resembled an image found by Professor Pallas, in his travels in the southern part of the Russian Empire.²

The Nashville image was made of a clay peculiar for its fineness, which is quite abundant in some parts of Kentucky. With this clay was mixed a small portion of gypsum.

A medium sized pyramidal mound, about seventy feet in diameter at the base and about fifteen feet high, with regular angles, is situated near the Franklin Pike, about two and a half miles from Nashville, upon the slope of a hill overlooking the valley of Brown's Creek. As far as my examination extended, this mound was in like manner used for religious purposes. Numerous stone graves have been found in the vicinity, and a number of relics obtained. A number of stone graves were exposed by the earthworks hastily thrown up by the Confederate troops under the command of General Hood, in the field adjoining this mound.

One of the relics discovered in this locality was described as a water vessel, in the form of a circular hollow tube, the inner circle being large enough to go over the head. It was thought that this earthen vessel was so constructed as to be carried around the neck, the weight resting on the shoulders.

A gentleman who once resided near this mound presented to me a small iron hatchet or tomahawk, much corroded, which was said to have been exhumed from a stone grave in this locality by an aged negro man. As this was the only iron

¹ *Archæologia Americana*, vol. i. p. 210.

² *Pallas' Travels*, vol. ii. Vignette, No. 11.

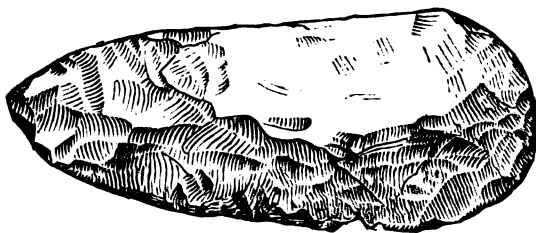
implement which had ever come into my possession in connection with the stone graves and mounds, I made a careful search for the old negro, but he had either died or had removed to some other place, and it was impossible for me to form any judgment as to its connection with the stone grave race, as it might have been deposited or lost in the field by the Cherokees or Chickasaws, who inflicted much damage on the early settlers in the Cumberland Valley.

Nine miles from Nashville, near the White Creek Road, on the farm of Mr. Dixon, I examined numerous stone graves lying on the western slope of a high hill. These graves were of various sizes, from that just large enough for a new-born babe to that long enough for the skeleton over six feet in length. As was usually the case in other stone grave burying-grounds, the small graves were constructed of thin slate, and the sides were parallel; whilst in the large graves the side slabs approached each other towards the foot. The greatest width of the long graves was in that portion occupied by the shoulders and thorax of the skeleton. The general outline of many of these long graves, therefore, resembled that of the modern coffin. Although this ancient cemetery had been long cultivated, the stumps of several large trees were still standing, and beneath the roots of a very large poplar, and partially covered by the central trunk, lay the grave of a small infant, most carefully constructed of flat rocks. The stump of the tree had been partially consumed by fire, but from its great size, and the numerous rings remaining, I judged that it must have been at least two centuries old at the time of its destruction.

Stone-hatchets, arrow-heads, vases, fragments of pottery, and several large stone implements, which appear to have been used as spades and hoes, have been exhumed from time to time during the cultivation of the soil in and around this ancient graveyard.

One of the largest, flat, spear-shaped implements, ten inches in length and four inches in breadth, is represented in Fig. 21, greatly reduced in size.

Fig. 21.



Stone implement of silix, from an ancient burying-ground near the White Creek Road, on the farm of Mr. Dixon, nine miles from Nashville.

From a large stone grave in this locality a remarkable vase, composed of black clay and crushed shells, was obtained. The neck terminated in the head of some animal which bears a striking resemblance to a raccoon. This vessel is 7.7 inches in height and 20.2 inches in circumference. The large oval portion appeared to have been fashioned first, and then the neck and head were joined, the place of union being distinctly visible. Although this vase is of remarkable symmetry, it

does not appear that the potter's wheel was used in its construction. It had evidently been subjected to the action of fire.

This specimen, which was called by the farmers in the vicinity where it was found an "*Indian canteen*," is represented greatly reduced in Fig. 22.

Fig. 22.



Black vase from an aboriginal cemetery, nine miles from Nashville.

It is probable that this vessel, as well as others to be described hereafter, had some symbolical significance relative to the tribal name, or to certain religious rites. It is well known that the tribes of certain Indian nations, as those of the Creeks and Iroquois, adopted some animal, as the bear, fox, or panther, or some bird, as its tribal representative. As far as my explorations extended, these vases, fashioned in the similitude of animals, were not common, not more than one or two being found in each burial mound.

The stone grave from which the vase just described was taken was of large dimensions, and contained the bones of two individuals. One of the crania was in a pretty good state of preservation, the other was destroyed during its extraction. This cranium is pyramidal in form, with a flat occiput, with a broad elevated forehead and long parietal diameter, and resembles very closely the skull of the Natchez, described and figured by Dr. Morton.¹ The marked flattening of the occiput, and the square pyramidal form of the cranium, could only have resulted from artificial pressure during the plastic state of the bones in early childhood. The effects of occipital compression in this pyramidal cranium will be rendered evident by the following measurements: facial angle, 80°; internal capacity, 78 cubic inches; longitudinal diameter, 6 inches; parietal diameter, 5.6 inches; frontal diameter, 4.4 inches; vertical diameter, 5.4 inches; intermastoid arch, 14.6 inches; intermastoid line, 5.1 inches; occipito-frontal arch, 13.2 inches; horizontal periphery, 18.9 inches; diameter of head and face, 7.2 inches; zygomatic diameter, 5.2 inches. The absence of teeth from the superior maxilla may have rendered the facial angle greater than it actually was before the loss of the teeth; the error, however, cannot be considered as very great. In this cranium there is a vacant space at the junction of the occipital and parietal bones which was formerly occupied by a small intercalated bone, referable to the occipital. This peculiarity is so common in the skulls of this ancient race as to constitute a marked characteristic.

On the high hill which rises above the stone grave cemetery on the farm of Mr. Dixon, we observed a number of large circular depressions which had evidently been the sites of aboriginal habitations or wigwams, and there were also some traces on the crest of the hill of an ancient earth-work. About one mile beyond the high hill is a noble spring, which has been noted for its unfailing supply of pure, cold water ever since the settlement of this country by the Anglo-Americans.

¹ *Crania Americana*, pp. 157-162, Plates XX and XXI.

The small hill, from the foot of which this spring issues, is covered by a burial mound containing numerous stone graves.

In other mounds which I have examined, by sinking large trenches and wells through the centre, layers of ashes and fragments of bones, many of which were charred and apparently both human and animal in their origin, were found mingled with ashes upon hard baked surfaces. Such mounds appeared to have been used solely for the incineration of the dead and for religious purposes.

At Sycamore, twenty-two miles from Nashville, down the Cumberland River, in Cheatham County, I examined a large number of stone graves, and also several small mounds, which were not more than ten feet in diameter, and three feet high. These consisted of an exterior layer of sand and earth, next a convex layer of flat rocks, and beneath this, ashes, charcoal, and human bones. It appeared that the bodies had been burned upon the surface of the earth and covered over with flat rocks, and the whole covered with earth.

In the neighborhood of the stone fort, near Manchester, I observed several piles of rock about eight feet in diameter, and from one to two feet in height. When these were removed they were found to have rested on ashes and charred bones.

CHAPTER IV.

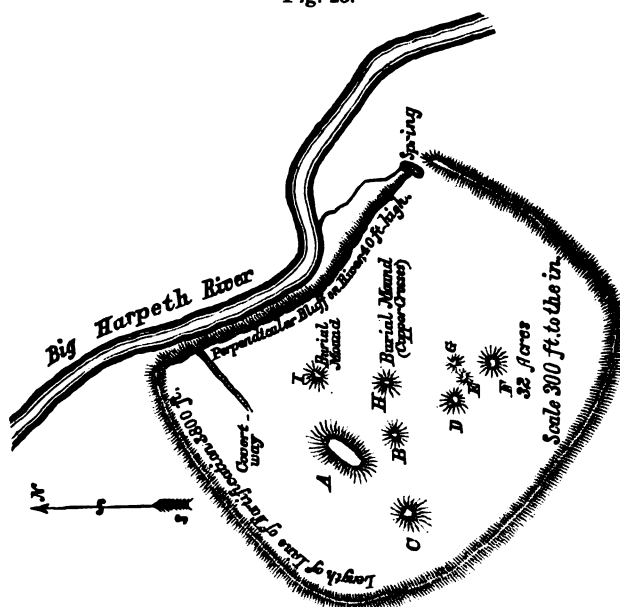
EARTHWORKS ON THE BIG HARPETH RIVER.

ON the southwestern side of Big Harpeth River, about two and a half miles from Franklin, Tennessee, on the plantation of General M. F. De Graffenreid, the vestiges of an ancient ditch and embankment are still visible, inclosing about thirty-two acres of land.

The earthwork, which is 3800 feet in length, is in the form of a crescent or semicircle, with the ends resting on an impassable, almost perpendicular bluff of the river, rising about 40 feet from the water's edge. The land slopes gradually away from the earthwork. The situation was admirably chosen for defence and for the maintenance of a protracted siege, as there is an abundant supply of drinking water, and the soil of the inclosure is of great fertility. Although the site of this ancient town has been under cultivation for a number of years, it still yields abundant crops of corn and cotton.

Within the earthworks are nine mounds; the largest, marked A in the following plan, figure 23, resembling a parallelogram, the sides and angles of which have been rounded by the ploughshare, is 230 feet in length, 110 feet in breadth, and 16 feet in height; the remaining mounds vary from 100 to 25 feet in diameter, and from 1 to 4 feet in height.

Fig. 23.



Plan of works, and relative position of the mounds, on the plantation of General M. F. De Graffenreid, on Big Harpeth River, about two and a half miles from Franklin, Tennessee.

DIMENSIONS OF THE MOUNDS.

A.	Long Diameter, 230 feet;	Short Diameter, 110 feet;	Height, 16 feet.
B	" " 66 "	" " 33 "	" 2 "
C.	" " 66 "	" " 50 "	" 2½ "
D.	" " 66 "	" " 50 "	" 2 "
E.	" " 25 "	" " 10 "	" 1 "
F.	" " 100 "	" " 66 "	" 1 "
G.	" " 30 "	" " 30 "	" 2 "
H.	" " 50 "	" " 33 "	" 3 "
I.	" " 40 "	" " 35 "	" 2½ "

When the ground inclosed by the earthwork was cleared about forty years ago, the mounds and ditch are said to have been covered with large trees, equal in size and age to those in the surrounding forests. A white-oak four feet in diameter is said to have stood in the ditch. There were seven "passways" over the works, at convenient distances from each other, and about eight feet wide, as long as the earth remained as the aborigines had left it. At that time, the ditch was five or six feet wide, and three or four feet deep. The earth forming the embankments appears to have been thrown upon the outside, so that the ditch was within the line of fortifications. Both the earth-wall and ditch have been greatly altered by the weather and by the ploughshare; so that at present they are in some places scarcely visible, and it is impossible to determine either the original height of the one or the depth of the other. Near where the entrenchment strikes the river-bank, at the commencement of the steep bluff, is a large and never-failing spring of excellent water. At another portion of the inclosure, indicated on the plan, there is a covert-way, or ditch, leading to the bluff, and down through a crevice to the river's edge.

The large, oblong mound A had no stone graves in its upper layer, but a shaft sunk into its centre, through its entire depth, revealed near the bottom and close to the original surface of the earth, a hard, red, burned surface, or altar, with ashes and charcoal resting on it. It appears that the mass of earth composing the mound had been erected upon the altar.

The four next largest mounds (B, C, D, and F) in like manner contained no stone coffins or human bones, but appeared to have been used for similar purposes as the large oblong mound; the interior giving evidence of having been burned with very hot fires, the red burnt stratum resembling bricks in hardness, so that it was possible to dig out with a pick-axe compact pieces of it a foot thick.

The burial mounds were four in number and smaller in size, and lay between this outer chain of sacrificial mounds and the river.

Only three or four stone graves were found in E and G, and these contained nothing of interest in the nature of relics, except a few common earthen vases which were in every case broken into small fragments.

The two burial mounds marked H and I, and nearest the largest oblong mound, contained a number of carefully constructed stone coffins, the lids of which were about a foot beneath the surface of the ground.

Remarkable and interesting relics were obtained from these two mounds. The

one marked H was thoroughly explored, the earth being removed and its entire contents laid bare.

In the centre of this mound was a carefully constructed *octagonal* stone grave, 3.5 feet deep, 4 feet in the longest, and 3 feet in the shortest diameter, walled around with eight large flat limestone slabs, standing on edge. This grave contained a skeleton which appeared to have been buried in a sitting posture; the head had fallen down upon the lumbar vertebræ; the arms rested at the sides; and the legs were crossed in front. On the right side lay a long dark-brown silex implement or weapon (spear-head, or sword-blade?), 22 inches in length, and 2 inches in width at the broadest portion, being abruptly pointed and serrated at the cutting end, and tapering at the handle (Fig. 24). The edge of this formidable "*stone sword*" was uppermost, and the bones of the fingers rested around the tapering portion or handle.

Fig. 24.



"Stone sword," or spear-head, from the ancient earthwork, on the Big Harpeth River. About one-fourth the natural size.

This appears to be the largest and most perfect chipped stone implement of this kind ever discovered either in America or elsewhere.

During the summer of 1870, I carefully examined the collections of antiquities in the museums of Paris, London, Liverpool, Cambridge, Oxford, and Edinburgh, but found no stone implements equalling in size and perfection the "*stone sword*" just described, and the battle-axe with the stone handle, which I exhumed from the mound on the banks of the Cumberland, opposite Nashville. Many forms of stone implements are common to both Europe and America. Thus I obtained a stone celt from the bed of the Thames at London, and another stone implement of a similar character from the bed of the Seine, in the heart of Paris, formed of hard, semi-transparent light-pink jasper. Upon comparing these implements with hundreds of similar ones which I have seen and collected in various portions of the United States, I have been able to discern little essential difference, either in the appearance or in the probable use. The London celt is probably older than the Christian era; for, although the true date of the origin of London is unknown, no doubt can be entertained that it was founded in times long prior to that period. The stone celt from the Seine dates back perhaps to the days of the Parisii, for it was found in the bed of the river.

The European stone celts were, no doubt, used for various purposes, such as crushing bones, cutting small limbs of trees, excavating boats, felling trees, and for warlike purposes; and were bound to handles of wood after the methods practised by the North American Indians. Both in Europe and in America, the stone implements were frequently perforated; and the perforation was probably accomplished in a similar manner, that is, by whirling a stick in a cavity kept constantly supplied with wet sand. Upon careful comparison, I concluded that

the stone hammers, battle-axes, spear and arrow-heads, fashioned by the aborigines of Tennessee, were, as a general rule, superior in workmanship and beauty of shape to those which I saw in Europe.

An earthenware vessel about seven inches high, composed of clay and crushed shells, rested on its base, near the pelvic bones, on the left side of the skeleton, in the central hexagonal grave, as if the left hand of the deceased had been placed around its neck. Two large sea-shells, one of which was much decayed, lay on the right side of the skeleton. The interior surface of these shells had been painted red, and the exterior had been marked with three large circular spots.

Around this central octagonal grave were ranged nine other stone graves. In one constructed like a coffin, about seven feet in length, extending directly from the head of the central grave, four copper crosses, or rather copper plates with a cross stamped on each of them, were exhumed, resting on the cranium of an individual, who appeared, from the worn condition of the teeth and the alveoli of the upper and the lower jaw-bone, to have died at an advanced age. The copper, during its slow oxidation, had stained the bones of the cranium to a deep green color. In their general outlines two of these copper plates, resembled the human figure. Small holes in the ends of the plates seemed to indicate that they had been worn suspended from the ears, or around the neck. At the time of the destruction of my dwelling by fire, in Nashville, in 1867, I had the misfortune to lose three of these relics. The remaining one now in my possession is shown in Fig. 25.

These copper plates were evidently too thin and delicate to be used for any other purpose than as ornaments.

This grave also contained a remarkable vase (Figs. 26 and 27) made of a light yellow clay and crushed river shells, on the sides of which were painted in dark brown, almost black pigment, three crosses, each inclosed in a circle, outside of which is a circular band, and beyond this a ring consisting of ten scallops. The body of the vase was accurately divided by three circular bands of black

Fig. 25.



Copper plate with a cross stamped in the centre, from a stone grave in a burial mound on the Big Harpeth River, 2½ miles above Franklin, Tennessee, one-half the natural size.

Fig. 26.



Fig. 27.

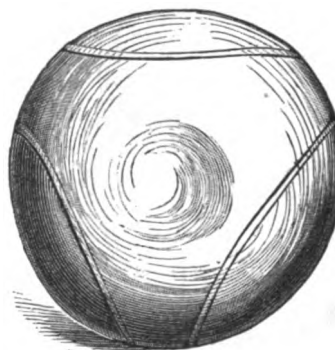


Fig. 26. Yellow clay vase with powdered shell *dégraissant*, from a stone grave in a burial mound within the ancient inclosure on the Big Harpeth River, two and a half miles above Franklin, Tennessee. One-fifth size.

Fig. 27. Bottom of the vase represented in the preceding, Figure 26, showing the continuation of the black pigment circles on the body of the specimen. About one-fourth the natural size.

pigment, uniting at the base and neck. The summit terminates in a bulb-shaped mouth. The height of this vessel is $9\frac{3}{4}$ inches; circumference of the neck 6 inches; circumference of the body 24 inches.

This grave was partially covered with the stump and roots of a large tree, which we judged from an examination of the remaining portion not to have been less than two centuries old at the time of its removal, about twenty years ago.

On the west of the central grave a stone grave, eight and a half feet long and widest at the head, was found, inclosing a large skeleton with the feet toward the east. A singular vessel fashioned in the shape of a child's foot and leg, with the aperture in the heel, and with a protuberance in the rounded surface encircling the thigh, lay on the left side of the skull. This vase appears to have been painted, but it was impossible to make out the markings, and in washing off the adherent earth the faint lines disappeared. Its height is 8.6 inches.

A small stone grave by the side of the one just described contained the skeleton of a child only a few years old at the time of its death, and also the following relics:—

Four large sea-shells, one on each side of the skeleton, another at the foot, and the fourth, a large specimen with the interior compartments cut out and the exterior surface carved, covered the face and forehead of the skull (Fig. 29). Among the markings on this shell, we distinguish triangles, parallel straight lines,

Fig. 28.

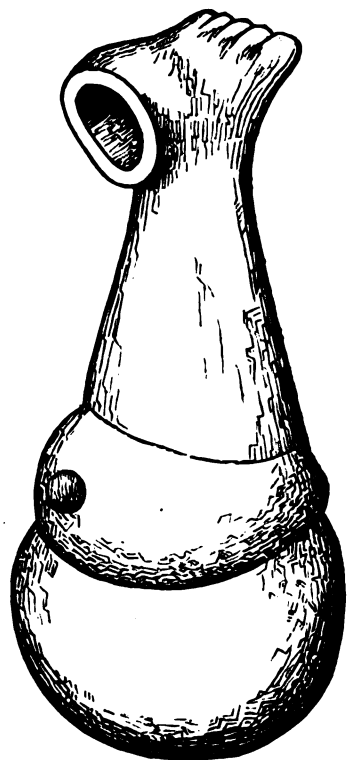


Fig. 29.



Fig. 30.



Fig. 28. Vase from a stone grave in a burial mound on the Big Harpeth River, two and a half miles above Franklin, Tennessee. One-half natural size.

Fig. 29. Carved sea-shell from a stone grave in a burial mound within the line of ancient works on the Big Harpeth River, two and a half miles above Franklin, Tennessee. About one-fourth natural size.

Fig. 30. Carvings on the sea-shell Fig. 29.

curved lines, and the human figure. Unfortunately a large portion of this specimen has been worn away by the action of the soil, and it is possible to reproduce only a small fragment of this curious record, which may have related to the history of the tribe which once inhabited this ancient town.

The lines of the carvings were copied by laying on the surface of the shell a transparent paper, and then tracing them carefully with India ink. The tracings thus obtained are represented in Fig. 30 about the natural size.

A small image rested on the left elbow of the child, facing the cranium. The general form of this specimen is similar to that of the female image which I discovered in the sacrificial and burial mound on the banks of the Cumberland, opposite Nashville. It is hollow, with a horizontal opening in the back part of the head. From the appearance of the light-colored clay and river shells of which it is composed, it had evidently been exposed to the action of fire. The vertebræ are prominent, and one of the largest is perforated, so as to admit the passage of the thong or string by which it was most probably suspended around the neck of the owner or in the temple house.

This image, four and a half inches in height, represents a pregnant woman in the crouching or kneeling posture, commonly assumed by the North American Indians; the body resting on the knees and on the feet doubled under the buttocks.

A well-made and gracefully formed water vessel, capable of holding about three pints, rested on the right side of the skull; its height is 8.5 inches, and its circumference 18 inches. A long polished bone needle or piercing instrument, 14 inches in length, lay across the breast of the child. It had been fashioned with great care from the tibia of the American deer, and was probably used for piercing leather.

The grave containing the relics just described was two and a half feet in length, and the long bones of the leg and thigh occupied a position as if the knees had been bent and the legs thrown back. The grave by the side of the one last mentioned was about six feet in length, and contained the skeleton of an adult male, the bones of which were extensively diseased as if by syphilis. The long bones of the arms, thighs, and legs were disfigured by nodes and erosions. A large conch shell carefully fashioned into a drinking vessel, and a beautiful light-red vase, similar in form, material, and painting to the one discovered in the burial mound on the banks of the Cumberland opposite Nashville, were obtained from this stone grave.

The next grave east of this, and towards the flanks of the mound, was about four and a half feet long, and contained the skeleton of an adult, the long bones of the thigh and leg being flexed on each other and on the trunk. At the right side of the head lay an oval black pot with four protuberances on the rim, somewhat resembling a terrapin in shape; height 3.2 inches, circumference 18.1 inches. A medium-sized black pot (the body of which was 5 inches in diameter, the height 4.4 inches, and the circumference 16 inches) was found resting at the foot of the grave on a pile of stone chisels or polishing instruments, and fragments of silex. Two fragments of beautiful semi-transparent jasper rested on each side of the head in contact with the temporal bones.

The next grave, passing around the mound towards the east, lay a little nearer

to the central grave, and contained a remarkably flattened and misshaped skull. This cranium is more altered by artificial pressure than that of any adult of this stone grave race which we have as yet examined. The bones were very much affected by the action of the soil, the softer and more delicate parts of the face crumbling upon the slightest touch. The flattening of the occiput is so great as to render the parietal diameter longer by four-tenths of an inch than the longitudinal. The pressure was greatest on the right side of the head, giving the cranium a deformed or one-sided appearance, in addition to the contraction of the antero-posterior diameter, and the marked increase of the lateral or parietal diameter. Thus the antero-posterior diameter of the head on the right side, measured from a point just above the superciliary ridge to a point directly across on the occiput, is 4.7 inches, and on the left side 5.4 inches. The bones of the legs of this skeleton were flexed on the thighs. At the foot of this grave lay a common black earthenware pot with two handles attached to its edge.

The grave directly across the mound from the small one in which the *image* or *idol* was found, and lying on the eastern side of the central grave, was in like manner occupied by the remains of a child a few years of age. This grave contained no relics excepting a small black pot.

The remaining two graves on the eastern flank of the mound contained the skeletons of adults, and yielded no relics besides a small black earthenware pot in each grave. The central octagonal grave contained also some scales of mica; and fragments of this substance were also found in several other graves.

We shall next present the results of the exploration of the mound lying between the eastern side of the large mound and the river, marked I on the plan, Fig. 23. The tops of the graves lay about two feet beneath the surface of the mound. The earth was entirely removed by sections so as to expose all the graves, six in number.

The centre of the mound was occupied by two graves which appeared to be the most important, and lay parallel to each other. In both of these the bodies must have been interred at full length. In the first one examined a large vase composed of light-red clay and crushed shells, and painted with black bands so disposed as to divide the body of the vase into three equal circular spaces, lay on the left side of the skull.

The ornamentation of this vase was very similar to that of the one represented in Figs. 26 and 27, excepting that the outer band has sixteen scallops, and the band inside of this has twenty-six small round spots left unpainted. The height of this vase was 8 inches; the circumference of the neck 10.7 inches; circumference of the body 26.7 inches.

Although it is very nearly symmetrical, there are certain slight defects of form which seem to indicate that it was not fashioned on the potter's wheel. This is a substantial, well-finished, and ornamental piece of earthenware, equal to the best unglazed pottery of modern times.

On the right of the skull lay a black vase or paint bowl, having on its rim a human head, which, in its aquiline nose, prolonged chin, and arched forehead,

bears a striking resemblance to the features of a Spaniard. The crown of the head is surmounted by a helmet, which presents a totally different appearance from the head-dress of the modern Indians. A small handle is attached to the opposite portion of the rim of this bowl. This small vessel was evidently used to hold paint, as it still contains red ochre. The ears of the head are bored, or rather slit, after the fashion of the North American Indians and many other savage nations, and a circular hole passes through the upper portion of the crest of the helmet. The lips are formed by an oval, ridged projection, as is usual with many Indian images and figures.

A similar head was found in Williamson County, Tennessee, in the vicinity of some large mounds, and is represented in Fig. 31.

Fig. 31.



Fig. 32.

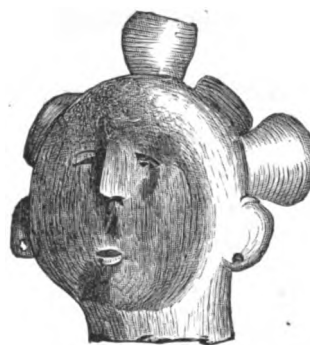


Fig. 31. Head crowned with a helmet (natural size), from a large mound in Williamson County, Tennessee.
Fig. 32. Black earthenware head (natural size), from an ancient earthwork inclosing mounds near Hickman, Tennessee.

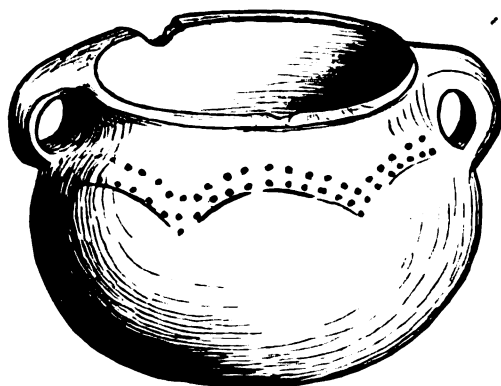
Fig. 32 represents a small black earthenware head with a round face, and crowned with small round tufts or knobs, from an ancient earthwork inclosing mounds and pyramids, near Hickman, Tennessee.

The taste and skill of this race are manifested also in the small earthenware vessels which we supposed to have been manufactured for the use and amusement of the children, such as the small reddish-yellow cup or pot, Fig. 33, which was taken from a stone grave.

These relics illustrate in a clear manner the taste and skill of this ancient race in fashioning earthenware and images; and it is evident that the artist who was capable of producing the head on the paint bowl must have attained a high degree of skill in his art.

The skull obtained from the stone grave which contained the paint bowl is square and pyramidal in its shape, with prominent superciliary ridges and nasal

Fig. 33.



Small reddish-yellow cup or pot, composed of fine clay, from a stone grave (natural size).

bones. The occiput and inferior portions of the parietal bones are flattened. The effects of artificial pressure are plainly manifest in the flattened occiput, diminished longitudinal diameter, and widely separated rami of the inferior maxillary bone. Four large Wormian bones are found along the occipito-parietal suture. The teeth are much worn. The outline of this cranium may be partially comprehended from the following measurements: facial angle, 82° ; internal capacity, 80.5 cubic inches; longitudinal diameter, 6.4 inches; parietal diameter, 5.9 inches; frontal diameter, 4.6 inches; vertical diameter, 5.7 inches; intermastoid arch, 15 inches; intermastoid line, 4.9 inches; occipito-frontal arch, 14 inches; horizontal periphery, 19 inches; length of head and face, 7.3 inches; zygomatic diameter, 5.4 inches.

In the other principal grave lying alongside of the one just described, a large vase similar in appearance and size (9 inches in height and 22.5 inches in circumference) to the one described above, and similarly painted with the three crosses and concentric circles, was found on the left side of the skull. The only difference in the painting was that the points of the scallops were represented as plaited together. These markings were quite distinct when the vase was first removed from the moist earth, but were almost entirely erased when the attempt was made to wash off the adhering clay and sand. The shells mixed in this vase appear to have been slowly decomposed, and to have lost a portion of the carbonate of lime which had effloresced on the surface. This altered the pigment and destroyed its tenacity. With the exception of a few large fresh-water mussel-shells, which were much altered by time, nothing further of interest was discovered in this grave. These mussel-shells appeared from their shape to have been artificially carved, and to have been used as ornaments, and also as spoons or cups for dipping up food and drink.

The cranium from this stone grave presented the following characteristics: superciliary ridges prominent; nasal bones well developed and prominent; teeth somewhat worn and several carious; occiput flattened to a considerable extent, and the flattening greatest on the right side of the head; several small Wormian bones along the occipito-parietal suture; facial angle, 82° ; internal capacity, 79.33 cubic inches; longitudinal diameter, 6.7 inches; parietal diameter, 5.5 inches; frontal diameter, 4.2 inches; vertical diameter, 5.5 inches; intermastoid arch, 15 inches; intermastoid line, 4.4 inches; occipito-frontal arch, 13.5 inches; horizontal periphery, 19.1 inches; length of head and face 7.8 inches; zygomatic diameter, 5.2 inches.

The cranium from the stone grave containing the copper crosses, which we have already described, presented the general characteristics of the crania of this ancient

race; the occiput, however, as in the preceding skull, was but slightly flattened. Although the oval of this skull, when seen in profile, is pretty good; at the same time the cranium is not symmetrical, the left portion of the occiput near its junction with the left parietal bone, as well as the inferior posterior angle of the left parietal bone, being decidedly flattened. The right parietal prominence is more marked and thrown further back than the left, which has been pushed forward, as it were, by the effects of pressure. In addition to this we have, as peculiarities of the race, the elongated frontal bone, the worn teeth, and powerful inferior maxilla.

The skull from the grave lying by the side of that which contained the copper crosses presents a little more flattening of the occiput than the one just noticed, but much less than the compressed skull from the same mound, which has been previously noticed. The pressure appears to have been greatest on the left side of the cranium. The superciliary ridge is prominent, and the nasal spine unusually long and well developed. The facial angle appears to be less than it really is on account of the prominence of the nasal spine. The general form of this cranium may be gathered from the following measurements: facial angle, 75° ; internal capacity, 81.16 cubic inches; longitudinal diameter, 6.5 inches; parietal diameter, 5.7 inches; frontal diameter, 4 inches; vertical diameter, 5.6 inches; intermastoid arch, 14.4 inches; intermastoid line, 5 inches; occipito-frontal arch, 13.3 inches; horizontal periphery, 19.2 inches; length of head and face, 7.1 inches; zygomatic diameter, 5.3 inches.

In the grave lying parallel to the one which contained the vase painted with the cross and scalloped circle, and situated on the western flank of the mound, a large heavy black vase or jug was found on the right side of the skull. The neck of this vessel terminates in a cone resembling a monk's hood, and the mouth opens horizontally. Height of vase, 9 inches; circumference, 22.5 inches. At the foot of the skeleton lay a black earthenware pot or vase 6.4 inches in height, and 22 inches in circumference. This grave was only four and a half feet in length, and the bones of the leg and thigh were flexed. From a small grave lying at the foot of this, and still nearer to the outer border of the mound, were exhumed the bones of a child, and a small black earthenware bowl or pot. Towards the northern boundary of the mound, in a stone grave immediately at the foot of the two principal graves, and at right angles with them, a skeleton was found with the head towards the setting sun. The long bones are strongly marked by *syphilitic nodes*. The skull is in a good state of preservation, and presents the general conformation of the crania of this ancient race, as will be seen from the following measurements: facial angle, 77° ; internal capacity, 84 cubic inches; longitudinal diameter, 6.5 inches; parietal diameter, 5.8 inches; frontal diameter, 4.4 inches; vertical diameter, 5.8 inches; intermastoid arch, 15.5 inches; intermastoid line, 5.2 inches; occipito-frontal arch, 14.3 inches; horizontal periphery, 19.9 inches; diameter of face and head, 7.4 inches; zygomatic diameter, 5.3 inches. This cranium had several indentations and nodes on the bones, as if they had been acted on during life by the syphilitic virus. The external table of the frontal bone appears to have been especially affected. The superciliary ridge is very rough and nodulated, and

the nasal bones are thickened, roughened, and rounded. The occipital bone shows the effects of pressure, which is much more marked in the right parietal protuberance, it being much fuller and thrown further back than the left. The upper extremities of the occipital bone are separated by a transverse suture about one inch in length.

I have shown by careful observations that bones taken from stone coffins and burial mounds at Nashville, Franklin, Old Town, in Tennessee, and at Hickman, in Kentucky, bear unmistakable marks of the ravages of syphilis. The supposition has been advanced that these bones presented merely "traces of periostitis," which were not due to the action of the syphilitic poison, because "it is uncommon to find shin bones of adults belonging to races clad in skins, and with the lower extremities exposed, in which there is not more or less roughness or hyperostosis along the tibial shafts." So far from these evidences of the action of syphilis being mere *traces* of periostitis, and constituting mere "roughness or hyperostosis along the tibial shafts," the bones are in many instances thoroughly diseased, enlarged, and thickened, with the medullary cavity completely obliterated by the effects of inflammatory action, and with the surface eroded in many places. These erosions resemble, in all respects, those caused by syphilis, and attended with ulceration of the skin and soft parts during life. Furthermore, the disease was not confined to the "tibial shafts;" the bones of the cranium, the fibula, the ulna, the radius, the clavicle, the sternum, and the bones of the face exhibited unmistakable traces of *periostitis, ostitis, endostitis, caries, necrosis, and exostosis*. The medullary membrane was evidently involved in many cases to an equal degree with the periosteum; the difference in the appearance of the products of the syphilitic disease being due most probably to the great quantity of fat and other loose tissues, among which the vessels of the medullary membrane run. When thin sections of these bones were carefully examined with the naked eye, and by the aid of magnifying glasses, portions were found resembling cancellous tissue from the enlargement and irregular erosions of the Haversian canals, and increase in the number and size of the lacunæ; whilst other portions presented the hardened condition known as sclerosis. I observed in these bones, and especially in those of the cranium, the various forms of osseous ulcerations which have been described by pathologists as characteristic of the action of syphilis, viz., rounded ulcerations with glazed surfaces, and with marked hardening or eburnification of the bone beneath; tuberculated ulcerations, dependent not only on periosteal deposit but upon chronic inflammation of the compact tissue itself; reticulated ulcerations, in which a network of periosteal deposit had been formed, and which had been perforated by ulcers, subsequently forming and assuming the annular type. That these diseases of the bones were not due to mechanical injury, or to exposure to cold, is evident from the fact that they were almost universally symmetrical in their manifestations; thus, when one tibia was diseased, the other was similarly affected, both as to the position and nature of the disease. In like manner both fibulæ presented similar evidences of periostitis, ostitis, and exostosis; this was true also of the bones of the forearm (radius and ulna), and of the clavicle.

The symmetrical distribution of the effects of disease on the two sides of the

osseous system could only have resulted from the action of a poison introduced into the blood, and distributed through this medium to all parts of the body.

The North American Indians not only possessed, as is well known, great powers of endurance, especially of hunger and cold, but their mode of dress protected their lower limbs admirably from injuries of all kinds, and especially from frost-bite. It is not true that they exposed the feet and legs without covering. These facts did not escape the accurate observation of Dr. Benjamin Rush.¹ Thus he says, in his "Inquiry into the Natural History of Medicine among the Indians of North America:" "I do not find that the Indians ever suffer in their limbs from the action of cold upon them. Their moccasins, by allowing their feet to move freely, and thereby promoting the circulation of the blood, defend their lower extremities in the daytime, and their practice of sleeping with their feet near a fire defends them from the effects of cold at night. In these cases, when the motion of their feet in their moccasins is not sufficient to keep them warm, they break the ice and restore their warmth by exposing them for a short time to the action of cold water." Dr. Rush adds, in a note, that "it was remarked in Canada, in the winter of the year 1759, during the war before the last, that none of those soldiers who wore moccasins were frost-bitten, while few of those escaped that were much exposed to the cold who wore shoes."

The question which naturally suggests itself is, was syphilis communicated to this ancient race by Europeans, or was the disease indigenous to the Indian race of North America? If these diseased bones demonstrate that this stone-grave race had at some former period received syphilis from Europeans, then we have in this fact data for an approximate determination of the age of at least a portion of these remains. The weight of testimony seems to sustain the view that syphilis was of American origin, and that it was originally imported from the West Indies into Europe. Whilst admitting that mankind had suffered with ulceration of the genital organs of a non-malignant character, and also, perhaps, with the simple contagious gonorrhœa for ages before the discovery of America, we desire simply to review, in connection with this discovery of the proofs of syphilis in the stone graves of Tennessee, the testimony of certain writers who had opportunities of investigating the origin of syphilis, at a comparatively early day in its history, in the West Indies and on the continent of America.

Bryan Edwards, in his "History of the West Indies," after describing the excessive sensuality of the aboriginal inhabitants of those islands, and alluding to this as the cause imputed by some writers for the origin of syphilis, "with the infliction of which they have almost revenged the calamities brought upon them by the avarice of Europe," nevertheless expresses his belief that the venereal affection was known in Europe many centuries before the discovery of America. He is compelled, however, to admit that "it might have broke out with renewed violence about the time of Columbus's return from his first expedition;" and he explains this sudden increase of the disease by a reference to the increased activity and commerce of the age, thus: "This was the era of wonder, and, probably, the infre-

¹ Medical Inquiries and Observations, Phila. 1805, vol. i, p. 25.

quency of the contagion before that period gave color to a report, perhaps at first maliciously propagated by some who envied the success of Columbus, that this disease was one of the fruits of his celebrated enterprise."

Edwards¹ enters no further into the discussion than to refer to the dissertations of William Beckett (Phil. Trans., vol. xxvii, p. 365; vol. xxxi, p. 47), and to that of Antonio Riberio Sanchez, published at Paris, 1772 and 1774; to the authorities referred to by Mr. Foster in his "Observations made during a Voyage round the World," p. 492; and to the following quotation: "In 'Stow's Survey of London' (vol. ii, p. 7) is preserved a copy of the rules or regulations established by Parliament in the eighth year of Henry the Second for the government of licensed stews in Southwark, among which I find the following: 'No steward to keep any woman that hath the perilous infirmity of burning.'" This was 330 years before the voyage of Columbus. After a careful examination of the original papers of Mr. William Beckett,² published in the Philosophical Transactions, I have failed to discover any clear evidence of the existence of syphilis before the discovery of America by Columbus.

Clavigero concludes his "History of Mexico"³ with a dissertation on the *origin* of the *French Evil*, in which he in like manner quotes the dissertations of William Beckett and of Sanchez, and endeavors to refute the almost universal opinion that the *French Evil* had its origin in America. Neither Edwards nor Clavigero adduces one single fact or original observation to sustain this position.

On the other hand, Oviedo, one of the earliest writers who makes mention of this disease, and who also enjoyed opportunities of direct observation, says: "The venereal disease was certainly introduced into Europe from these islands" (the West Indies), "where the best medicine for the cure of it, the *guaiacum*, is also found. * * * * I was acquainted with many persons who accompanied Columbus in his first and second voyages, and suffered of this disease; one of whom was Pedro Margaritte, a man much respected of the king and queen. In the year 1496 it began to spread in Europe, and the physicians were wholly at a loss in what manner to treat it. When, after this, Gonzales Fernandez de Cordova was sent with an army by his Catholic Majesty on behalf of Ferdinand the Second, King of Naples, some infected persons accompanied that army, and, by intercourse with the women, spread the disease among the Italians and French, both which nations had successively the honor of giving it a name; but in truth it came originally from Hispaniola, where it was very common, as was likewise the remedy."

Sir Hans Sloane, M.D., in his great work on the "Natural History of Diseases, etc., of Jamaica and other West India Islands," says, "Columbus likewise brought into Europe in his ship, and first voyage from these places, the pox, which spread so quickly all over Europe that *Antonius Benivenius*, who was at that time a great and famous practitioner of physic at Florence, in the first chapter of

¹ Vol. i, pp. 64-66.

² Phil. Trans. 1718, vol. xxx, p. 839; 1720, vol. xxxi, p. 47; 1720, vol. xxxi, p. 108.

³ Vol. iii, pp. 415-435.

his book '*de Abditis nonnullis ac mirandis morborum, et sanationum causis*,' tells us that the *lues venerea*, then beginning in Spain, had spread itself through Italy and France, and that in the year 1496 it had possessed many people in all the provinces of Europe. Dodonæus likewise tells us that this disease very much raged in the war that Charles VIII, King of France, had with Alphonsus, King of Naples, in the year 1494; and yet thinks that Gulielmus de Saliceto, who lived in 1270, Valseus de Tarenta, who lived in 1418, and Bernardus de Gordonio, who died in 1305, give us an account of some symptoms of it. I am of opinion, notwithstanding what these have said, and some other less material passages in ancient works, and what Joannes ab Arderne wrote about an. 1360, and likewise what Stow says about the laws of the public stews in Southwark, that this was a distemper altogether new in Europe, Africa, and Asia, before it was brought from the West India Islands. The diseases mentioned by the above-cited authors being different from that distemper, both in symptoms and cure, only, perhaps, communicated somewhat after the same manner. I have seen some such cases attended with considerable inconveniences and fevers, and yet not at all pocky." London, 1707.—*Introduction*.

Sir Hans Sloane was physician to the Duke of Albemarle, and in 1687 visited Jamaica, where he remained eighteen years; his testimony, therefore, is entitled to the highest consideration.

The historian William Robertson, who appears to have examined the question of the origin of this disease with his usual care and learning, held that it originated in the West Indies. Thus, in his "History of America," he says: "One dreadful malady, the severest scourge with which in this life offended Heaven chastens the indulgence of criminal desire, seems to have been peculiar to the Americans. By communicating it to their conquerors they have not only amply avenged their wrongs, but by adding this calamity to those which formerly embittered human life, they have, perhaps, more than counterbalanced all the benefits which Europe has derived from the discovery of the New World. This distemper, from the country in which it first raged, or from the people by whom it was supposed to have been spread over Europe, has been sometimes called the Neapolitan and sometimes the French disease. At its first appearance the infection was so malignant, its symptoms so violent, its operation so rapid and fatal, as to baffle all the efforts of medical skill. Astonishment and terror accompanied this unknown affliction in its progress, and men began to dread the extinction of the human race by such a cruel visitation. Experience and the ingenuity of physicians gradually discovered remedies of such virtue as to cure or mitigate the evil. During the course of two centuries and a half its virulence seems to have abated considerably. At length, in the same manner as the leprosy, which raged in Europe for some centuries, it may waste its force and disappear; and in some happier age this western infliction, like that from the east, may be known only by description." Vol. ii, p. 85. In note xxiii to the same volume Robertson adds: "The rapid communication of the disease from Spain over Europe seems, however, to resemble the progress of an epidemic rather than a disease transmitted by infection. The first mention of it is in 1493, and before the year 1497 it had made its appearance

in most countries in Europe with such alarming symptoms as to render it necessary for the civil magistrate to interfere in order to check its course." Vol. ii, p. 379.

We have not considered it necessary to discuss the relations of syphilis with the elephantiasis of the Greeks or the leprosy of the Arabians, on the one hand, or with the *yaws* of Africa on the other, as they are clearly distinct diseases in their origin, history, symptoms, and mode of propagation; neither have we thought it necessary to examine critically in this place the various ulcers of the organs of generation described by Hippocrates, Pliny, and the older writers, since it is now clearly established that there are two well-marked varieties of venereal ulcers, one of which, known from time immemorial, is local in its character and without constitutional symptoms and effects; nor have we deemed it important to corroborate the preceding testimony by the arguments of such learned writers as Fracastorius,¹ Astruc,² Harvey,³ and others; but have viewed the question of the origin of syphilis as resting mainly on the testimony of such authors as Oviedo and Sloan, who enjoyed opportunities of personal observation and research in the West Indies, where the disease is said to have been first contracted by Europeans. The question as to whether the natives of the North and South American Continent were afflicted with syphilis at the time of their discovery and exploration by the Europeans is involved in doubt and obscurity. The existence of the disease in the crowded West India Islands did not necessitate its existence on the continent.

After a careful examination of the accounts of the explorations and conquests of the early Spanish adventurers, we have failed to gather any testimony to substantiate the view that the disease existed also upon the continent.

All the earlier voyagers and explorers unite in describing the natives of America as remarkable for the perfection of their persons and limbs, and their absolute freedom from all deformities, ulcers, and blemishes.

The division of the North American Indians into numerous tribes and nations hostile to each other, the necessity of constant activity and change of location imposed by their mode of life, by the chase, and by the incessant wars in which they were engaged, and the comparative sparseness of the population, were evidently unfavorable to the spread of syphilis.

John Lawson⁴ appears to have been the first author who asserted that this disease was peculiar or indigenous to the North American Indians. His observations were made about two hundred and eighty years after the discovery of the West Indies by Columbus, and the repeated contraction of syphilis by Europeans. During this time the most extensive intercourse had been carried on between Europe and America, and ample time had elapsed for the communication of this disease to the North American Indians, and also for the growth of the belief amongst these people who were without any written records, that the disease was peculiar to their race.

¹ Hieronymi Fracastorii Veron Liber Unus de Sympathia et Antipathia rerū item de Contagione, etc., 1554.

² A Treatise on Venereal Diseases, in nine Books, etc., by John Astruc. London, 1754.

³ Venus Unmasked; or, A more exact Discovery of the Venereal Evil or French Disease, etc., by Gideon Harvey, 1665.

⁴ A New Voyage to Carolina, etc. London, 1709, pp. 18-19.

The Indian doctors of physic also appear to have favored this idea with a view to magnify their skill and to excite confidence in their knowledge of the indigenous remedies of North America. Lawson's account of the "*epidemical*" character of the disease, and of its origin from drinking rum, and from exposure to cold and wet, and from eating such gross food as pork, is fanciful, and invalidates his testimony with reference to its existence among the Carolina Indians before their contact with Europeans. In fact, Lawson asserts at the same time that the Indians often get this disease from the English traders; and notwithstanding that he has given a long account of the skill of the "Indian doctor who had the misfortune to lose his nose by the pock," and alludes to a companion of the doctor who was in the same unfortunate condition, affirms in another portion of his work that he had never seen "an Indian have an ulcer or foul wound; neither is there any such thing to be found amongst them." There is no question as to the accuracy of his assertion that "the pock is frequent in some of their nations," for he gives unmistakable examples of the disease and recounts the method of cure employed by the Indians. Neither can it be denied that the disease was frequently communicated to the Indians by the English traders; but the testimony of Lawson as to the antiquity of the disease amongst the North American Indians, as well as to its mode of production and epidemical character, is valueless.

John D. Hunter,¹ who was a captive amongst the Western Indians for nineteen years, from 1796 to 1816, and who, during his hunting excursions, and in the wars in which he was engaged with numerous tribes, enjoyed ample opportunities for extended observation of the habits and diseases of these people, affirms that "syphilis, as the Indians say, was entirely unknown among them until they contracted it from the whites. It prevails among several of the tribes with which I am acquainted, and proves one of their most troublesome and fatal disorders. Those who go among the populous white settlements on the Missouri and Mississippi, where the disease prevails in its most inveterate forms among the traders and the boatmen who navigate the river to New Orleans, frequently return to their families and tribes infected with it. It often assumes a most distressing train of symptoms before the emaciated sufferer is aware of his situation."

We are not justified, therefore, in holding that the marks of syphilis in the organic remains of the stone grave race and mound builders of Tennessee indicate that this once populous nation which dwelt in towns defended by earth-works held intercourse with Europeans after the discovery of America by Columbus.

We have historical evidence to show that the most recent of these stone graves cannot be less than two hundred years old. How much older the organic remains in these stone coffins or cists may be we know not, as no records exist.

Chemical examination shows that the bones from the same aboriginal burying-ground present marks of having been deposited at different periods. Without entering into tedious details I will simply state the general results of my examinations, viz.: the proportion of organic matter varies within wide limits in the bones

¹ Memoirs of a Captivity among the Indians of North America from Childhood to the Age of Nineteen, etc., by John D. Hunter. London, 1823, p. 142.

of different stone graves, and in accordance apparently with the age of the bones. In those bones which crumble readily, the amount is small, although, as far as my examinations extended, it was always sufficient to give a black carbonaceous appearance to the bones during the earlier stages of incineration in crucibles. When acted on by dilute hydrochloric acid, many of the oldest bones dissolved, leaving a mere trace of organic matter or gelatine, whilst the more recent bones thus treated yielded a firm elastic organic matrix of gelatine, possessing the form of the bones. The diseased bones which I collected from the stone graves of Tennessee are probably the most ancient *syphilitic bones* in the world; and this discovery appears to be of great importance in the history of specific contagious diseases, in that it confirms the view held by some pathologists that syphilis originated in the Western Hemisphere.

The fact that the existence of syphilis was not noted by the early explorers amongst the nomadic tribes of North America cannot be adduced to prove that the aboriginal stone grave race of Tennessee and Kentucky contracted the disease by intercourse with Europeans. This is evident from the following considerations established by my explorations:—

a. The stone grave race of Tennessee and Kentucky were more advanced than the nomadic and hunter tribes of North America in certain arts. Thus they lived in compact, fortified towns and villages; they fashioned superior stone implements; they understood the art of sculpture, not only ornamenting their well-constructed vases with the heads of animals and man, but also carving images from blocks of stone, and fashioning them from a mixture of clay and crushed shells.

b. The features of the images or idols fashioned by the stone grave race of Tennessee and Kentucky were entirely different from those of the nomadic tribes. The head-dress and ornaments also were different, and in many cases resembled those employed by the Chinese and Mexicans in their idols.

c. Whilst the crania of the stone grave and mound-building race of Tennessee and Kentucky possess in a marked degree those characteristics which distinguish the American race from all others; at the same time they appear to belong to the Toltecan division of the American nations, being characterized in common with those of the Inca Peruvians and the Toltecs of Mexico by the quadrangular form, compressed and almost vertical occiput, lateral swelling out of the sides, and elevated but retreating forehead. As in the case of the crania of the Inca Peruvians these skulls are remarkable for their irregularity of form, for, among the whole number examined, scarcely one could be called symmetrical; and in many of the crania the *Os Incæ*, characteristic of the Peruvian skulls, was observed.

The fact that syphilis had committed ravages amongst this race was deemed of such importance as to arrest our attention in the midst of the explorations, and unavoidably led to a consideration of the time and place of the origin of this loathsome and singular disease, which transmits its effects from generation to generation, and leaves a record which outlives death, and is as imperishable as the bony skeleton itself.

A small grave lying on the east of the first grave described, in the burial mound now under consideration, contained only some decayed bones of a child.

From a short square grave lying south of the principal graves, we obtained a very fine skull with perfect teeth. Some of the long bones of the skeleton were wanting, and it appeared from this circumstance, as well as from the manner in which the bones were deposited, that the skeleton had been preserved for some time, and perhaps had been transported from a distance before its final interment in the stone box. The long bones were placed around the cranium, and one of the phalanges of the foot was sticking in the nasal opening. It will be seen from the following measurements that in this skull the compression of the occiput was comparatively slight, and that the facial angle was above the medium of this race. Facial angle, 80° ; internal capacity, 80 cubic inches; longitudinal diameter, 6.6 inches; parietal diameter, 5.6 inches; frontal diameter, 4.3 inches; vertical diameter, 5.5 inches; intermastoid arch, 15 inches; intermastoid line, 4.6 inches; occipito-frontal arch, 13.8 inches; horizontal periphery, 19.3 inches; diameter of face and head, 7.2 inches; zygomatic diameter, 5.2 inches.

Several other stone graves were discovered by sounding the inclosure in various directions with an iron rod, but beyond some fragments of pottery no implement or relic of interest was discovered.

In a stone grave near the summit of a small mound at the western angle of the large pyramidal mound, I obtained a fine cranium in perfect preservation, free from any blemish or decay, with full sets of white and sound teeth, sixteen above and sixteen below. A Wormian bone, half an inch in diameter, is situated at the junction of the occipital and parietal bones. This skull, like the preceding one, presents but slight marks of pressure upon the occiput, and the outlines, as determined by the craniograph, as well as the occipito-frontal and vertical arches, are very nearly symmetrical, as will be evident from the following measurements: facial angle, 77° ; internal capacity, 80 cubic inches; longitudinal diameter, 6.8 inches; parietal diameter, 5.2 inches; frontal diameter, 4.1 inches; vertical diameter, 5.8 inches; intermastoid arch, 15 inches; intermastoid line, 4.7 inches; occipito-frontal arch, 14.4 inches; horizontal periphery, 19.5 inches; diameter of head and face, 7.8 inches; zygomatic diameter, 5.2 inches.

Numerous stone graves were found on the sides of the adjoining hills outside the line of fortifications, but they yielded no relics of importance.

These facts strengthened the opinion that the two principal burial mounds within the area inclosed by the line of the works were the burial places of royal families. It is also worthy of note that the number of graves within and around the mounds and earthworks was not sufficiently great to lead to the supposition that a very large population resided immediately within these fortifications. It is probable that large numbers were assembled within them only when the inhabitants were pressed by their enemies.

In order to display still further the taste and skill of this race in the manufacture of earthenware vessels, I have grouped together in Figs. 34 and 35 some of the specimens referred to in the preceding pages.

A large number of interesting relics have been found from time to time during the cultivation of the area of this aboriginal settlement, and in the surrounding fields.

Among the most interesting of these relics is a beautiful stone disc or paint mortar, formed of hard yellow silex, hollowed on both sides, highly polished, and so thin in the central portion as to be translucent. It is 6 inches in diameter, and 2.3 inches thick along the border or outer rim. The excavations on either side are 5 inches in diameter and 1.1 inches deep. The thickness of the septum dividing the two excavations is only one-tenth of an inch.

Fig. 34.



Group of vases and pots, composed of crushed shells and clay, from stone graves within the ancient works on the Harpeth River, two and a half miles above Franklin, Tennessee. About one-fourth the natural size.

Fig. 35.



Group of vases, same material and locality as Fig. 34.

A discoidal stone formed of a conglomerate of variously colored siliceous pebbles, four inches in diameter and two inches in thickness, taken from a stone grave within the line of the earthworks, is represented in Fig. 36.

Fig. 36.



Fig. 37.

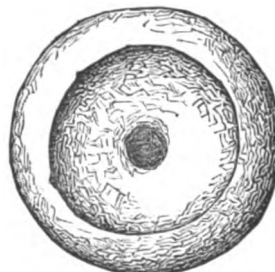


Fig. 36. Discoidal stone from the ancient works on Big Harpeth River, two and a half miles above Franklin, Tennessee. One-fourth natural size.

Fig. 37. Biconcave discoidal stone, about one-fourth natural size, from the ancient works on Big Harpeth River, two and a half miles above Franklin, Tennessee.

One of the biconcave discoidal stones of hard silex, perforated by a small hole in the centre, is represented in Fig. 37.

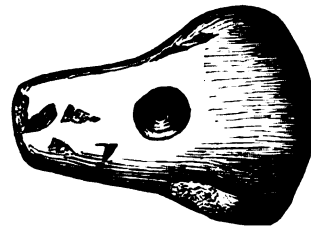
Another small specimen of the disc kind, and from the same locality, 2 inches in diameter and $\frac{1}{16}$ inch thick in the outer border, is formed of hard green serpentine, to which a very high polish had been imparted.

The stone hatchet shown in Fig. 38, and which was obtained from a stone grave within the line of earthworks, is formed of beautiful green chloritic slate, highly polished, and is perforated by a hole, the sides of which are quite smooth. The hole appeared to have been used for the insertion of a rivet through the handle of this stone hatchet or battle-axe.

Numerous stone chisels and wedges of various sizes, from 1.5 inches in length to 10 inches, highly polished, and composed of hard green chlorite, variegated serpentine, limestone, and silex, two of which are represented in Figs. 39 and 40, have from time to time been found within and around these ancient works.

The grave from which these stone implements were taken contained numerous similar objects. These small stone implements must have been used for mechanical purposes, as they appear to be too small to have been used in warfare.

Fig. 38.



Hatchet of hard green chloritic slate from a stone grave within the ancient works on Big Harpeth, two and a half miles above Franklin, Tennessee. One-fourth natural size.

Fig. 39.

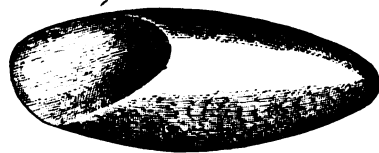


Fig. 39. Polished wedge or fleshing instrument of green chlorite from a stone grave within the ancient works on Big Harpeth, two and a half miles above Franklin, Tennessee. One-fourth natural size.

Fig. 40.



Fig. 40. Small chisel of green chloritic stone, sharpened at both ends, from a stone grave within the ancient works on Big Harpeth River, two and a half miles above Franklin, Tennessee. One-half natural size.

Several pipes have been found in this locality. I succeeded, however, in obtaining only a small one fashioned of sandstone, and represented in Fig. 41. The exterior of the pipe is rudely carved with lines as in the figure.

The largest pipes found in this locality resemble the one formed of a chocolate-colored stone in the shape of a parrot, which I obtained near Murfreesboro', Tennessee, and which is represented one-fourth the natural size in Fig. 42.

Several of the pipes found in the valleys of the Cumberland, Harpeth, and Duck Rivers, in Tennessee, which I have examined, were formed of a hard green stone, to which a high polish had been imparted. Some of these pipes were of considerable size, being 18 inches in length. The form of a bird having the general appearance of the one given above, or of the eagle or the quail, seems to have been most generally employed by the

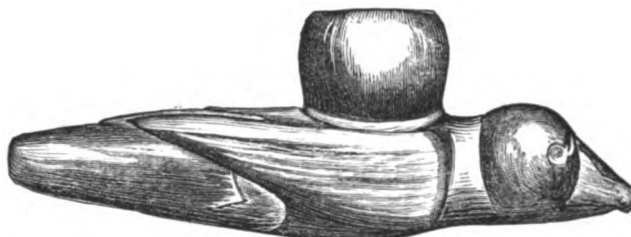
Fig. 41.



Sandstone pipe from a stone grave in an aboriginal earthwork on Big Harpeth River, two and a half miles above Franklin, Tennessee. Length two and a half inches.

abrigines of that State. I have seen a large stone pipe, about 14 inches in length, which had the form of the male organ of generation; and another smaller one in the shape of a four-footed animal.

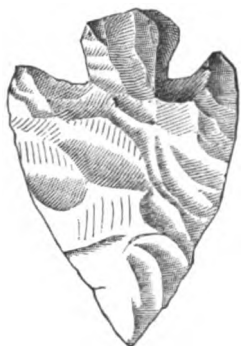
Fig. 42.



Stone pipe from the aboriginal works near Murfreesboro', Tennessee. One-quarter natural size.

Numerous spear and arrow-heads have also been found within and around this ancient earthwork, one of the most perfect of which, formed of beautiful variegated white, yellow, and red jasper, is represented in Fig. 43.

Fig. 43.



Spear-head, one-half natural size, from the ancient works on Big Harpeth, two and a half miles above Franklin, Tennessee.

It is evident, from the following observations, that the stone implements from the ancient earthwork on the banks of the Big Harpeth River were formed of various kinds of stone which are unknown in this section of North America. I found also some fragments of mica and obsidian in this locality. It is probable that the places whence some of these materials were obtained were from 300 to 2000 miles distant; and the conclusion is reached that either these implements were obtained during the migrations of the race from distant regions, during long hunting and war expeditions, or by barter from surrounding nations.

The careful exploration of the mounds and stone graves within the line of these aboriginal works on the Big Harpeth River, has yielded important information concerning the mode of burial, the character of the crania, the works of art, and the warfare of the race which constructed the earthworks and erected the mounds; and has also resulted in the discovery of copper crosses, of vases with various symbolic paintings (amongst which has been noted the cross), and of bones extensively diseased, and bearing unmistakable marks of syphilitic inflammation.

A small image in my possession, formed of white clay, found in middle Tennessee, painted with the same black pigment as their vases, and dressed in what appears by the markings to be a woven garment, has a cross painted on both shoulders.

The front and profile views of this small hollow image are represented in Figures 44 and 45; about one-sixth natural size.

The small black image (Fig. 9) has three prominences on the head ornament; the stone hatchet, with the stone handle from the same mound, has three marks on the end of the handle; the beautiful shell ornament, from the same locality, has

three crescentic lines, both on the anterior and posterior surfaces; and the painted vases, with the crosses and scalloped arches, from the burial mounds on the banks of the Big Harpeth, were accurately divided by bands of black pigment, each into three circles, inclosing the crosses and scalloped bands.

A circular shell ornament, with a distinct cross carved in the centre, which had been filled with red pigment, was taken by Colonel Putnam from the breast of a skeleton in a stone grave near Nashville, Tennessee.

Haywood, in his "Natural and Aboriginal History of Tennessee," records the fact that in the small graves near Sparta, Tennessee, vessels with the cross painted on them, and also a round shell with two holes, a cross, and two circles cut in it, were exhumed. Haywood also states that, in digging into a mound at Chillicothe, Ohio, the remains of a man were found, and over the place where his breast was supposed to have been, was a cross and a string of beads. The cross was completely converted into verdigris. The trees which grew upon the mound were of the same size as those of the surrounding woods.

When the Spaniards arrived in America, they are said to have found stones cut in the figure of a cross which were revered by the Mexicans.

The principal object in a tablet described by Mr. Stevens, from the ruins of Palenque, is a cross surmounted by a strange bird, and covered with indescribable ornaments. The two figures on either side of the cross are evidently those of important personages, perhaps of sacerdotal character. Both are looking towards the cross, and one seems in the act of making an offering, perhaps of a child. This tablet of the cross has given rise to more learned speculations than perhaps any others found at Palenque. Dupaix and his commentators, assuming for the building a very remote antiquity, or at least a period long antecedent to the Christian era, account for the appearance of the cross by the argument that it was known and had a symbolic meaning among ancient nations long before it was established as the emblem of the Christian faith. In Egypt it was venerated from the greatest antiquity as the symbol of matter; amongst the Irish it was the symbol of knowledge; and Garcilasso affirms that the ancient Peruvians had a cross of white marble which they held in great veneration, but did not adore, and could give no reason for the respect which they paid it. Mr. Stephens, in the second volume of his travels in Central America, expresses the opinion that this particular building in which the cross was found, was intended as a temple, and the inclosed inner chamber containing the cross was an *adoratorio*. In the only statue found at Palenque, the face of which has an expression of serene repose and a strong resemblance to Egyptian statues, the form of the cross is plainly marked in the head-dress. Mr. Stephens denies any very great antiquity to these ruins, and holds that they are the work of a people who had not yet passed away—but who

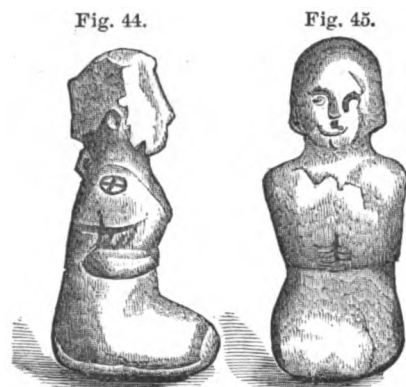


Fig. 44. Profile view of a small, hollow image, from an aboriginal mound in the valley of the Cumberland.

Fig. 45. Front view of the image represented in Fig. 44.

occupied the country at the time of the invasion of the Spaniards. This author considers the celebrated *Cozumel cross* preserved at Meridia, which claims the credit of being the same originally worshipped by the natives of Cozumel, as, after all, nothing but a cross that was erected by the Spaniards in one of their own temples after the conquest.

It is, however, well established that the cross was found in Mexico before the conquest, and the Spaniards could not suppress their wonder as they beheld the cross, the sacred emblem of their own faith, raised as an object of worship in the temples of Anahuac. They met with it in various places.

Archæologists have noticed that the early writers laid great stress upon the fact that crosses were discovered in various parts of America at the time of the conquest, and deduced therefrom some very extraordinary conclusions. Don Carlos de Sigüenza Y. Góngora speaks of one drawn from the cave of Mizteca Baxa, and venerated in his day in the Conventual Church of Tonalá, dedicated to St. Dominic. This cross, he avers, was discovered by the music of angels being heard in the cave, on a long vigil of the glorious apostle St. Thomas, who, according to his hypothesis, introduced Christianity into America immediately after the era of Christ.

Gomara mentions crosses in Yucatan; and Bonturini testifies to having frequently met with them in paintings. Mr. Squier has shown, however, that his error consists in mistaking the symbolical *Tonacaquahuil*, or *Tree of Life*, for a cross. Mr. Squier, in his work on Nicaragua, notices the occurrence of the cross in some of the aboriginal remains. A number described at Zapatero are distinguished by this feature.

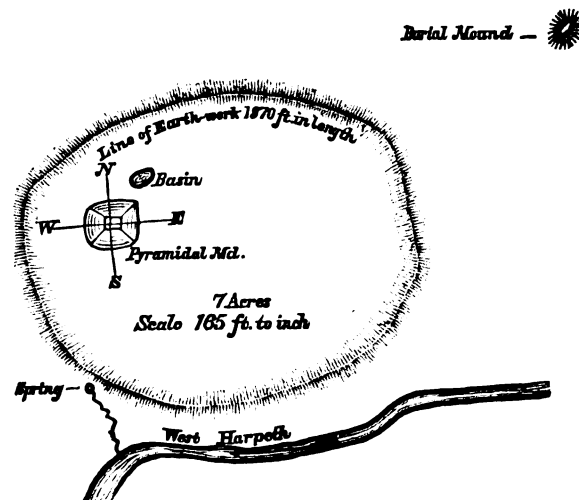
These facts may be viewed by some as indicating that the inhabitants of America have, at various times, come in contact with the civilizations and religions of Asia and Europe, even before the recognized period of the discovery and exploration of the American continent; and, when considered in connection with the results of my explorations of the aboriginal remains of Tennessee, it is clearly established that, in the absence of historical records, it is difficult and perhaps impossible to form a correct judgment of even the approximate age of the aboriginal mounds and stone graves of Tennessee, merely from the discovery of copper crosses and certain symbolical paintings on earthen vessels. The more important inference appears to be that the mound-builders and stone-grave race of the Mississippi valley had a common origin or near affinity with the aboriginal inhabitants of Mexico and Central America.

CHAPTER V.

EARTHWORKS ON WEST HARPETH AND BIG HARPETH RIVERS.

A CIRCULAR embankment lies on the northeastern bank of West Harpeth River, five miles southwest of Franklin, Tennessee, on the land of Mr. J. R. Hughes. This ancient earthwork, together with the mound which it incloses, and the burial mound situated without the line of fortifications, is represented in Fig. 46.

Fig. 46.



Plan of works and mounds lying on West Harpeth River.

The line of fortification is 1970 feet in length, and incloses seven acres. Both the rampart and the works within the inclosure are covered with large forest trees.

The pyramidal mound standing in the northwestern corner of the inclosure has a diameter at the base of 110 feet, and at the summit of 35 feet, and a mean height of 9 feet. A fine spring breaks out near the southwestern line of fortifications, and runs through a small ravine into the West Harpeth River.

Near the northeastern angle of the mound is a regularly formed depression or basin, 32 feet in diameter.

The growth within the inclosure consists chiefly of birch, maple, elm, hickory, and oak; a number of these trees are not more than from 6 to 14 inches in diameter, and are apparently from 40 to 50 years of age; but there are still standing a number of old oaks. The stump of one of these 7.5 feet in diameter, standing near the foot of the mound, exhibited *three hundred* rings, and from appearances, the tree had been cut down some twenty years before my exploration.

The larger oak which overhangs the spring is 10 feet in diameter at the base.

The works are situated on a slight elevation in a low bottom, which is subject to overflow in rainy seasons.

The embankment is in a good state of preservation, being, in some places, eight feet in height. The ditch is on the inside of the line, and at certain intervals the embankment is much thicker, or wider, as if some tower or defensive structure had been erected at each of these points. Within the inclosure are eight depressions, or excavations, which are thought to have been made during the erection of the mound. Openings or pass-ways exist in those portions of the works which are nearest to the spring and the river.

I caused the mound to be cut in two by a broad deep ditch, commencing on a level with the surface of the earth, and running directly through from north to south. Sections were also carried east and west from the middle ditch.

The mound was found to be composed of seven different layers of soil or earth. The bottom, slightly elevated above the surrounding surface, consisted of a layer of hard baked clay.

Upon this *altar-like* surface rested a substratum of dark earth four feet thick. The third layer, in the series proceeding from the base of the mound upwards, was eight inches thick, and of a deep reddish-yellow color, resembling both in shade and hardness a burned brick. The fourth layer, two inches in thickness, was black and very hard, as if it had been subjected to high heat. The fifth was a light-colored layer, only one-fourth of an inch in thickness, which had been subjected to such a degree of heat that it was hard like pottery. The three layers last mentioned were about 28 feet in diameter, and were each in turn covered with a layer of charcoal. The fuel appeared to have consisted, in part at least, of the common cane of the surrounding low-lands.

Fragments of pottery were scattered all through the mound, but near the middle of the fifth layer a large number of thick pieces of earthenware were found, composed of clay and river shells. Several of these pieces were surrounded with charred wicker-work, or coarse matting formed of the leaves of the cane. Although thoroughly charred, these fragments retained their reticulated form. It would appear that the large vessel had been moulded in this peculiar kind of matting. The sixth layer was composed of the ordinary soil; and on this rested a layer of mould, constituting the seventh or outer layer. A layer of ashes encircled the mound about two feet beneath the surface, and appears to have accumulated gradually during the use of the mound as an altar.

A small burial and sacrificial mound lies about four hundred yards southeast of the inclosure, on an elevation about sixty feet above the level of the water in West Harpeth. A ravine, in which is a small stream, lies between the inclosure and this small mound. This structure has the appearance of a natural rising or gentle elevation, and it would scarcely be recognized on a superficial view as of artificial origin, were it not for the existence of several depressions in its immediate neighborhood, which appear to have furnished the earth for its construction. It seems to have been much washed and worn by the rains; at present the diameter of its base is 60 feet, and its height 5 feet.

A circular opening ten feet in diameter was made in the summit. A short dis-

tance beneath the surface a layer of flat limestone rocks was reached. They appear to have been gathered from the bed of the stream below and from the sides of the ravine. These slabs were irregularly laid. After the removal of the first layer of rocks, they were found to have rested on a stratum of earth five or six inches thick, beneath which a regularly laid pavement of smooth flat rocks was exposed; and beneath this was found still another layer of very thin smooth slabs. The three layers of rocks and earth formed two and a half feet of the upper crust of the mound. In the centre of the mound, beneath the lowest layer of rocks, a stratum of earth of a deep red color, mixed with fragments of charcoal and partially charred cane stems, was reached, which was eight inches in thickness, six and a half feet in diameter, and of a circular form. This earth had the appearance of having been subjected to a high heat, and the material chiefly used in the kindling of the fires seemed to have been the ordinary cane of the low-lands which covered large tracts of this country when first explored by the whites. After the hard layer of burned red-clay was dug through, a layer of earth which appeared to have been superimposed on the natural surface of the hill was reached, whose depth was two feet. The shaft was continued three feet down into the natural or original soil of the hill without discovering any traces of fire or of the works of man.

In extending the excavations towards the circumference of the mound, stone graves were discovered arranged like the radii of a circle around the central *altar* of hard baked clay. The graves were separated by intervals of three or four feet, and the inclosed skeletons were disposed with their feet towards the *altar*, and their faces directed forwards, looking as it were upon the *altar*, whereon it is supposed the aborigines formerly maintained the Sacred Fire. Most of the bones were very much decayed, and they appear to have been crushed by the heavy mass of rocks which formed the upper cap or crust of the mound. In several graves the bones were reduced to a yellow substance which crumbled on the slightest touch. Even the teeth appeared to have been buried so long that the enamel parted and crumbled when pressed between the fingers. It was possible to examine only a single skull *in situ* by carefully cutting the earth away. The occiput was much flattened, and in general appearance and form this skull resembled those of the Natchez Indians, and many similar crania which I exhumed from the stone graves of Tennessee. The bones of this cranium were, however, so much decayed that they crumbled on the slightest touch, and it was impossible to lift the skull out of the grave.

Pieces of earthenware composed of clay and crushed shells were found lying between the graves; it was, however, impossible to reproduce any vessel from these fragments.

] This mound resembled in its general structure the sacred burial mound on the banks of the Cumberland River, opposite Nashville, the main differences consisting in the greater age of the former, the presence of a hard layer of burned clay for an altar, and the absence of ornaments and stone implements.

We are inclined to attribute a considerable age to this burial mound and to the earth-works. The largest trees growing on the embankment and within the

inclosure would indicate that the work was completed more than 300 years ago; how much longer it had stood, it is of course impossible to conjecture, as no relics were found which could throw any light on this interesting question.

Earthworks at Old Town.

The remarkable aboriginal remains known as Old Town are situated on the banks of Big Harpeth River, six miles southwest of Franklin, Tennessee, and two miles and three-quarters from the ancient works and mounds just described, on the banks of West Harpeth, on the lands of Mr. Hughes.

At Old Town, on the land owned at present by Mr. Thomas Brown, the works extend in a crescent form from the steep bluffs on Big Harpeth, 2470 feet in length, and inclose twelve acres. They contain two pyramidal sacrificial mounds, a small circular burial mound, a large burial mound now occupied by the family mansion, and numerous stone graves, ranging principally along the banks of the river.

The stone graves are numerous not only within the line of works, but also on the slopes of the hills and in the low-lands for two miles around, and the general appearance of the surrounding lands gives evidence of the existence in former times of a large aboriginal population.

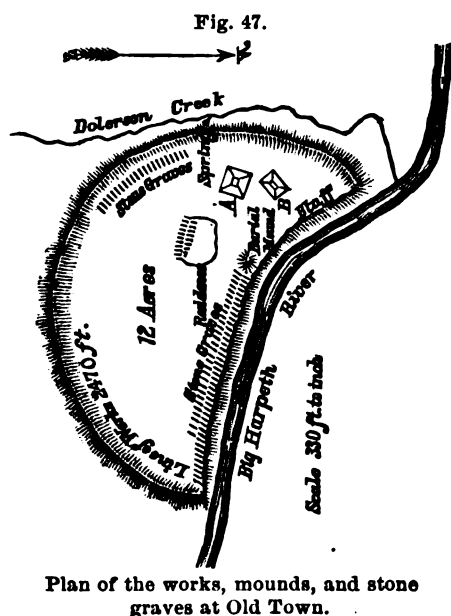
The general plan of the aboriginal works at Old Town is given in Fig. 47.

At the present time the height of the inclosing earthworks varies from two to six feet; they have been much worn down by the ploughshare, however, and they are said to have been so steep and high thirty years ago that it was impossible to ride a horse over them.

The bluff on the river is abrupt, like that included in the fortifications at General de Graffenreid's on the same stream; and a fine spring of water, called the Bluff Spring, issues from the banks within the portion included by the line of works.

Two pyramidal mounds and a small burial mound are situated in the southwestern corner of the earthworks, near a fine spring, and within thirty feet of each other; the largest (A) is 112 feet in the long diameter, 65 feet in the short diameter, and 11 feet high; the next in size (B) is 70 by 60 feet at the base, and 9 feet high; and the small burial mound is 30 by 20 feet in diameter, and 2.5 feet in height. The house of Mr. Brown, located near these mounds and within the line of works, appears to have been built on a burial mound, for in excavating the foundation a number of interesting relics were found, and among them a vase the neck of which terminated in two human heads.

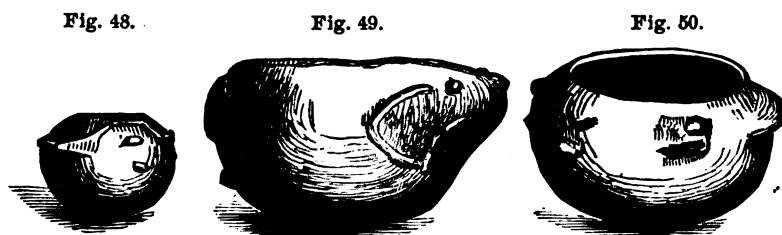
The burial mound is probably composed of stone graves ranged one upon another as in the burial mound previously described near Brentwood. We obtained



from a stone grave on the side of this mound next the river, near where the road crosses its border, a small black clay pot or vase made in the likeness of a frog.

This vase was 6.75 inches in the long diameter, and 3.5 inches in height. Several other graves on the flanks of this mound yielded vases; but unfortunately three-fourths of it lay within the flower garden of Mr. Brown, and the family would not consent to have it disturbed.

The vase in the shape of a frog is represented in Fig. 49.



Earthenware vessels composed of dark clay and crushed shells from stone graves at Old Town.

We are of the opinion that this small burial mound is very rich in vases and stone implements. From its position with reference to the large mounds, and from the contents of the graves opened, the opinion was formed that in conjunction with the mound upon which the house stands it constituted the burial place of the chief families of the tribe or aboriginal settlement. On the other hand, about fifty stone graves along the banks of the river, and on the sides of the hill beyond, were opened without discovering any pottery or implements. There appeared to have been great irregularity in the mode of burial; in some large graves nine and a half feet in length, as many as four whole skeletons were discovered, and in other graves from two to five feet in length, adult skeletons were found with the bones irregularly placed as if the bodies had been bent. In many graves the bones of the pelvis lay immediately under and in proximity with the bones of the skull. In the short graves, which proved to be the most numerous, the bones were in many instances very irregularly laid, those of the feet and hands being mingled together in proximity with the skulls; generally the long bones were laid transversely across the end of the grave, the arm and leg bones being together.

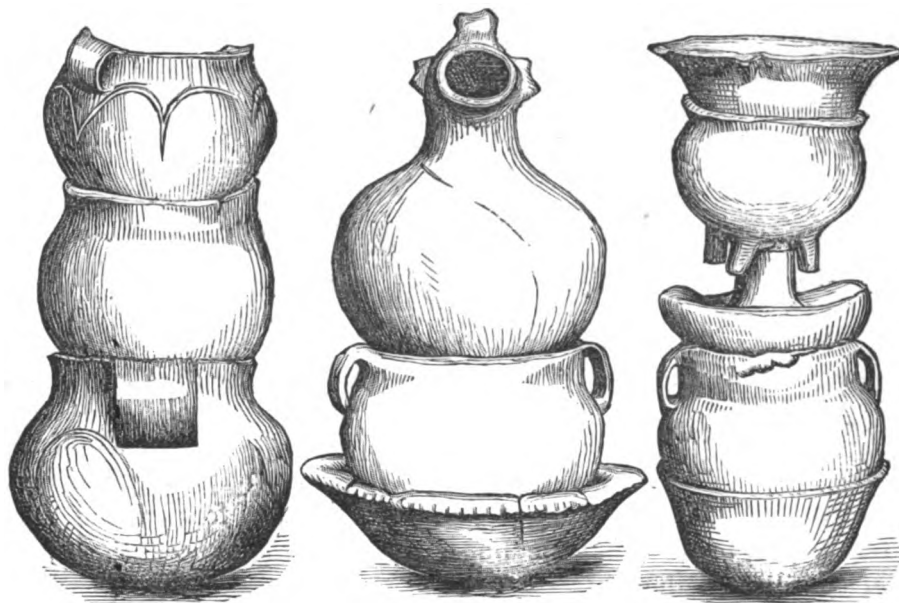
The earthenware pots and bowls were sometimes found at the foot, but most generally at the head of the grave, by the side of the skull; and in several instances one pot or bowl was placed in another, as in the case of the frog-shaped bowl, which rested upon the top of a large thick black vessel. The grave was only 3.5 feet in length, and contained the skull of a very old man; the long bones were laid across the grave.

The following figure 51 presents the forms of some of the earthenware vessels exhumed from the stone graves of Old Town.

The lowest of the three middle vases is ornamented with a beautiful sculptured border, and by four projections. This vessel was evidently used as a dish of some kind, and is not deeper than an ordinary soup plate. The second one from the top, on the right, has four feet, and resembles in all respects the iron pots of the present day.

The skill of the aboriginal inhabitants of Old Town was still further illustrated by a curious black earthenware vessel, resembling the head of a hog, and represented in Fig. 52.

Fig. 51.



Earthenware vessels from Old Town.

The fact that this vase resembled the head of the Mexican hog or peccary, taken in connection with the large marine shells which have been exhumed from the aboriginal stone graves, establishes the connection of the Mound Builders of Tennessee with distant southern and southwestern nations.

Fig. 52.



Black vase or pot, composed of dark clay and crushed shells, from a stone grave at Old Town, banks of Harpeth River.

The diameter of this vase is 6 inches, its height 4 inches.

The crania obtained from the stone graves at Old Town presented similar characteristics to those described in connection with the explorations at other localities. Many of the crania presented little or no flattening of the occiput, as was well shown in the case of a cranium exhumed from a stone grave on the banks of Big Harpeth, which approached in its general outline to the Mongolian type. In this skull there is but a slight flattening of the occiput, and the foramen magnum is more symmetrical in its outlines, and in its relative position, than in many of the crania of this ancient race.

This cranium yielded the following measurements: facial angle, 82° ; internal capacity, 81 cubic inches; longitudinal diameter, 6.9 inches; parietal diameter, 5.5 inches; frontal diameter, 4.3 inches; vertical diameter, 5.7 inches; intermastoid arch, 15 inches; intermastoid line, 4.8 inches; occipito-frontal arch, 14 inches; horizontal periphery, 19.6 inches; diameter of head and face, 7.8 inches; zygomatic diameter, 5 inches.

In another large cranium, which had an internal capacity of about 100 cubic inches, the marks of occipital pressure and flattening were but slight, as may be gathered from the following measurements: longitudinal diameter, 7.2 inches; parietal diameter, 5.7 inches; frontal diameter, 4.6 inches; vertical diameter, 5.9 inches; intermastoid arch, 16 inches; intermastoid line, 4.6 inches; occipito-frontal arch, 15.2 inches; horizontal periphery, 20.8 inches.

One of the crania taken out of the small square grave which contained another skeleton, and from which the black pot shaped like a frog was obtained, exhibited marks of artificial pressure or moulding, the occiput being flattened, the parietal diameter increased, and the lateral diameter diminished, as will be seen from the following measurements: longitudinal diameter, 6.1 inches; parietal diameter, 5.5 inches; frontal diameter, 4.1 inches; vertical diameter, 4.5 inches; intermastoid arch, 14 inches; occipito-frontal arch, 13.6 inches; horizontal periphery, 19 inches.

The bones in this grave had evidently been deposited after the flesh had been removed, and after the skeleton had been disjoined. This cranium had been fractured before being placed in this grave, for the interior was filled with fragments of bone, and a portion of a rib extended quite across the vault of the skull. The fragments of bone within the skull were imbedded in a tenacious black clay. The other cranium from this grave presented little or no flattening of the occiput.

The bones of another cranium, from a stone grave on the banks of the river, presented nodular swellings, and the long bones of the skeleton to which it belonged gave unmistakable evidences of the ravages of syphilis, in the numerous *nodes*, and in the almost complete obliteration of the medullary cavity in the tibia. This cranium was in a good state of preservation; the facial angle is 77° , and the internal capacity, 84 cubic inches.

The bones of another cranium, exhumed from a stone grave in a dry and sandy soil, were remarkably delicate, white, and bleached; and we concluded that it had belonged to a female, and that it was one of the most recently interred in this aboriginal graveyard. This cranium was said to have been taken from a stone grave in this inclosure by the late Dr. Freeman, and, with one exception, was the only specimen not removed from the stone graves immediately under my supervision, or by my own hands. Although it is slightly flattened, the occiput and general contour of the head were less altered than usual in this aboriginal race, as will be seen by the following measurements: facial angle, 76° ; internal capacity, 68 cubic inches; longitudinal diameter, 6.4 inches; parietal diameter, 4.9 inches; frontal diameter, 3.9 inches; vertical diameter, 5.5 inches; intermastoid arch, 13.9 inches; intermastoid line, 4.5 inches; occipito-frontal arch, 13.8 inches; horizontal periphery, 18.2 inches; diameter of face, 7.1 inches; zygomatic arch, 4.6 inches. This skull is characterized by its lightness, by a considerable degree of symmetry, by a comparatively regular contour or curve in the occipito-frontal arch, by the narrow forehead (the frontal diameter being only 3.9 inches), by the slight compression of the occiput, by the low facial angle, which was only 76° , and by the *prognathous* jaws.

On the other hand, some of the crania were greatly flattened at the occiput, resembling those already described, as well as the crania of the Natchez Indians,

as will be seen from the following measurements of one from a stone grave, on the banks of Big Harpeth, within the line of works at Old Town: internal capacity, 79 cubic inches; longitudinal diameter, 6.1 inches; parietal diameter, 5.8 inches; frontal diameter, 4.6 inches; vertical diameter, 5.5 inches; intermastoid arch, 15 inches; intermastoid line, 4.8 inches; occipito-frontal arch, 13.4 inches; horizontal periphery, 18.9 inches.

The examination of the crania from the stone graves of Old Town in like manner sustained the observation that the occipital flattening presented various degrees, and was scarcely greater in many crania than what might have resulted from the pressure of the mere weight of the infant's head resting continuously on a comparatively hard surface, as in the pappoose case of the North American Indians.

I caused sections to be made of both the pyramidal mounds standing in the portion of the inclosure nearest the spring and running brook, and within thirty feet of each other; the sections were each about 45 feet in length, 5 feet in width, and 12 feet deep.

The internal structure of these mounds was similar to that of the pyramidal mound within the earthwork on the West Harpeth, on the land of Mr. Hughes. It appears that a quantity of earth, about one-third of the height of the mound after its final completion, was thrown up on the original surface of the earth, and carefully levelled. Hot fires were kept constantly burning on this *altar* (?), the heat of which was sufficient to bake and redden the earth for some inches below. Upon the surface of the *altar*, which contained ashes and charcoal and fragments of pottery, another layer of earth was placed, and fire again kindled upon this new level; and thus, finally, the mound was elevated to the present proportions. Pieces of earthenware were scattered through the different layers of the two mounds, and in the larger one an earthenware vessel of considerable size was exhumed. In one portion a collection of gravel mingled with fragments of pottery two feet in diameter was observed.

Upon the sides of the lesser mound several small stone graves were discovered. In 1852, a schoolhouse was erected on the summit of the largest mound, and in levelling and digging the foundation numerous stone graves were said to have been opened.

It would appear, therefore, that these mounds, which were first used for religious purposes, for sacrifices, for the preservation of the sacred fire, or as sites of temples, were after their completion used also as burial mounds.

The proprietor of the mounds and earthworks stated that six years before my explorations an elm tree, twelve feet in circumference just above the roots, stood on the largest mound. I examined the section of a portion of this tree, extending from the centre to within about a foot of the circumference, and it contained 160 rings. Judging from this block the age of the tree must have been more than two hundred and fifty years.

Numerous relics have been discovered from time to time, in and around *Old Town*, but, as far as I could learn, no metallic implements, coins, or utensils of

European manufacture have ever been exhumed from the aboriginal mounds and graves.

Amongst these relics may be mentioned a large stone pipe in the form of a partridge or quail, represented one-fourth the natural size in Fig. 53.

Fig. 53.

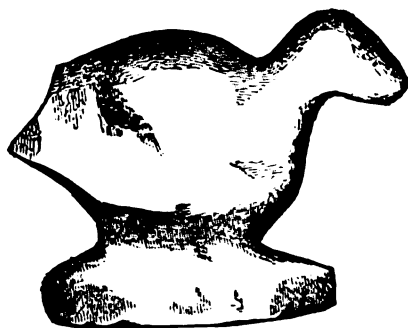


Fig. 54.



Fig. 53. Pipe of coarse yellow sandstone, from Old Town, one-fourth natural size.

Fig. 54. Implement of hard greenstone, from Old Town, banks of Big Harpeth River, Tennessee.

The beautiful implement of greenstone and highly polished, 18 inches in length, represented in Fig. 54, is also worthy of mention.

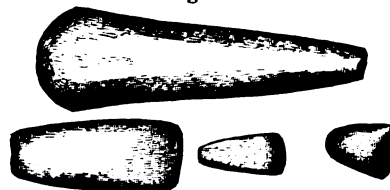
I have seen several similar stone implements, fashioned upon precisely the same pattern, out of the same hard greenstone, from various parts of the Cumberland Valley. Several conjectures have been formed as to the use of these singular implements. Some have supposed them to have been used in agriculture, the flat head being employed as a spade, and the round handle for making small holes in the earth for the deposit of the grains of Indian corn; others believe that they were used to strip the bark from trees; others again that they were used in dressing hides, in excavating caves, or in felling trees after the wood had been charred by fire. It is possible that they may have been used for all these purposes, and also as warlike weapons, since it would be easy to fracture or to cleave the human skull with a single blow from one of these stone implements.

Numerous stone wedges, hammers, and axes, similar to those represented in Fig. 55, some of which were over one foot in length, have been found from time to time in cultivating the soil within and around Old Town.

The stone hatchets, hammers, wedges, chisels, and fleshing implements were made from hard greenstone, serpentine, limestone, fossiliferous rock, and sandstone. They were probably employed by the aborigines for various purposes, as wedges, hammers for breaking bones and small twigs, for battle-axes, as chisels or wedges, for digging out canoes, and for dressing hides.

Numerous spear and arrow-heads have also been found at this locality. They were of various sizes and of various shapes. The material from which they were made was most generally flint and jasper.

Fig. 55.



Celta from the valley of Big Harpeth River, Tennessee. One-eighth natural size.

Old Town was admirably located for defence, and for an abundant supply of water and fish. On one side it was protected by the steep, abrupt banks of the Harpeth, and on the other, by a deep ravine and stream; whilst the remaining portions were protected by a high embankment, which was most probably crowned by a stockade during the occupation of the aborigines. The surrounding lands also were adapted to the cultivation of Indian corn.

It is worthy of note that the works, mounds, and graves of Old Town, like those of the various aboriginal settlements which we have described, presented the appearance of completion, as if the ancient inhabitants, from some cause, had abandoned their homes. The finished aspect of the mounds and earthworks of Tennessee and Kentucky, the undisturbed contents of the *sacrificial* and *burial* mounds, as well as the unaltered state of the stone graves and earthworks, forced upon me the conviction that these were all the work of the same race, and that, in most instances, after their desertion, they remained without subsequent occupants.

The abandonment of the aboriginal remains of Tennessee, Kentucky, and of several of the Western States by the primitive inhabitants who were at one time very numerous, may be referred to three causes, viz. :—

1. Emigration.
2. Destruction of the entire population by more barbarous and nomadic tribes.
3. Destruction by pestilence.

It is evident from the age of the trees growing in many of these mounds, that they were completed and abandoned long before the discovery and exploration of the North American Continent.

My examinations of the organic and monumental remains, and of the works of art of the aborigines of Tennessee, establish the fact that they were not the relics of the nomadic and hunting tribes of Indians existing at the time of the exploration of the coast and the interior of the continent by the white race; but, on the contrary, that they are the remains of a people closely related to, if not identical with the more civilized nations of Mexico and Central America.

The question, whether the mound builders of the Mississippi valley were the primitive race from which the Toltecs and Aztecs sprang, or whether they were offshoots of these races, cannot at present be definitely settled. A solution of this interesting question, will depend mainly upon a careful exploration of the aboriginal remains of the entire North American continent. When this great work is completed, it may be possible to decide as to the relative age and relationship of the remains in different sections of the continent, and thus to establish the lines of occupation and emigration of the mound builders.

It is possible that it may be finally shown that the races which attained a certain degree of civilization in Mexico and Central America, have all emigrated originally from the valley of the Mississippi, where they had sojourned and multiplied during a considerable period of time. The frequent and devastating wars waged by the Iroquois on the east, and by the Cherokees and Choctaws on the south and west, were evidently subsequent to the migrations of the ancient mound builders and stone grave race of Tennessee, Kentucky, and other Western States.

The numerous stone graves scattered over a belt of country stretching from the

shores of Lake Erie to the borders of the present State of Georgia, are sad but unimpeachable witnesses of the fact that the fertile valleys of Ohio, Kentucky, and Tennessee were once filled with a numerous population; and the earthworks by which the mounds and graves are surrounded, bear testimony to the fierce and continued struggles in which these people were engaged with the more barbarous tribes; and the question arises, as we view these extensive graveyards, by what *pestilence* or *calamity* were they peopled?

In the absence of all written records, and when even the name of the people whose bones fill these rude sarcophagi is a subject of inquiry, the discussion of this question assumes such proportions as to embrace the consideration of the causes which led to the rapid diminution of the aborigines of America, not only after, but also before its discovery by Columbus. Considered in a comprehensive light, this subject should command the attention of the statesman, the philanthropist, and the ethnologist.

The agencies which have, at various times, destroyed vast numbers of the aboriginal inhabitants of America, were pestilence, Matlazahuatl, malarial fevers, smallpox, syphilis, ardent spirits, war, and slavery. Smallpox and ardent spirits committed their ravages after the discovery of America by Columbus. The calamities of war and slavery were greatly extended and intensified by the presence and active agency of the Europeans. That immense numbers of the human race have perished in North and South America, and in the West Indies, as a consequence of the introduction of Europeans, no one at all conversant with the records of history will deny, however much historians may differ as to the original population to be assigned to the different nations of this continent.

Pestilence desolated the cities of the Toltecs in the eleventh century, forced them to abandon Mexico, and to continue their emigrations towards the south, west, and northwest. It invaded the populous cities of Central America, and committed great ravages amongst the tribes which occupied the country between the mountains and the Atlantic Coast, a few years before the landing of the Pilgrim Fathers.

The *Matlazahuatl*, a disease peculiar to the Indian race, seldom appears more than once in a century. It raged in the eleventh century amongst the Toltecs, and also made great ravages among the Mexicans in 1545, 1576, 1736, 1737, 1761, and 1762, and amongst the Indians of the Atlantic coast in 1618 and 1619.

Humboldt has recorded in his "Political Essay on New Spain," the following facts and conjectures with reference to the Matlazahuatl.

"As the latest epidemic took place at a time when medicine was not considered a science even in the capital of Mexico, there are no exact data as to the Matlazahuatl. It certainly bears some analogy to the yellow fever, or black vomit; but it never attacks white people, whether Europeans or natives of the country; while, on the other hand, the yellow fever or black vomit very seldom attacks the Mexican Indians. The principal site of the *vomito prieto* is the maritime region, of which the climate is excessively warm and humid; but the *Matlazahuatl* carries terror and destruction into the very interior of the country, to the central tableland, and the coldest and most arid regions of Mexico. Long before the arrival of Cortez, this epidemical disease had prevailed almost periodically in New Spain,

and it is probably the same plague as that which in the eleventh century forced the Toltecs to continue their emigrations southwards. It is true, no doubt, that the Indians of the valley of Mexico, who perished by thousands in 1761, of the *Matlazahuatl*, vomited blood at the nose and mouth; but these *hæmatemeses* frequently occur under the tropics, accompanying bilious (*ataxique*) fevers; and they were also observed in the epidemical disease which prevailed over all South America, from Potosi and Oruro to Quito and Popayan, and which, from the incomplete description of Uloa, was a typhus peculiar to the elevated regions of the Cordilleras." The physicians of the United States, who adopt the opinion that the yellow-fever originated in the country itself, think they discover the disease in the *pests* which prevailed in 1535 and 1612 among the red men of Canada and New England. From the little which we know of the *Matlazahuatl* of the Mexicans, we might be inclined to believe that, in both Americas, from the remotest periods, the copper-colored race has been subject to a disease which, in its complications, resembles in several respects the yellow fever of Vera Cruz and Philadelphia, but which differs essentially from it in the facility with which it is propagated in a cold zone, where the thermometer during the day remains at 10° or 12° Centigrade (50° and 53° of Fahrenheit), and in the interior of the country, on the central table land, at twelve or thirteen hundred toises above the level of the sea.

Father Torribio, a Franciscan, better known by his Mexican name of Motolinia, asserts that the smallpox, at its introduction in 1520 by a negro slave of Narvaez, carried off half the inhabitants of Mexico.

Torquemada advances the hazardous opinion that, in the two Matlazahuatl epidemics of 1545 and 1576, 800,000 Indians died in the former, and 2,000,000 in the latter.¹

During the four centuries in which the monarchy of the Toltecs flourished, they multiplied considerably, extending their population in every direction, founding numerous and large cities, and building those great monuments which required the united efforts of multitudes for their completion; but the calamities which happened to them in the first year of the reign of Topiltzin, A. D. 1031-1052, gave a fatal shock to their prosperity and power; for several years their country was afflicted with such a protracted and severe drought, that their fields failed to yield them the necessary fruits; the air, infected with mortal contagion, filled the graves with the dead, and the minds of the survivors with consternation—a great part of the natives died by famine and sickness, and the wretched remains of the nation, in order to save themselves from the common calamity and from utter destruction, deserted Mexico and sought relief from their misfortunes in other countries. There was, therefore, in this desolating plague of the Toltecs, the usual association of *famine* and *pestilence*; and it is probable that, as in the history of many other nations, the former was the cause of the latter, and that the disease probably partook of the nature of the *typhus* and *typhoid fevers* of the present day.

The gentleman of Elvas, in his "Narrative of the Expedition of Hernando De Soto," states that in the pleasant and fertile country, in the neighborhood of the

¹ Political Essay on the Kingdom of New Spain, vol. i, pp. 117-118; vol. iv, pp. 135-137.

town of Cutifachiqui, "there were great towns dispeopled, and overgrown with grass; which showed that they had long been without inhabitants. The Indians said that two years before there was a plague in that country, and that they removed to other towns."

A terrible pestilence wasted the American Indians in 1618 and 1619, a short time before the Pilgrim Fathers landed in Massachusetts. Captain Dermer, an English adventurer, who had come to America in a fishing vessel a year or two before, passed the winter of 1618-19 in Mohiggan, an Indian town on the northern coast. On the 19th of May, 1619, he sailed along the coast on his way to Virginia, and landed at several places where he had been the year before; and he found many Indian towns totally depopulated—in others only a few natives remained alive, "but not free from sickness, their disease being the plague, for we might perceive the sores of some that had escaped, who described the spots of such as usually die." He found some of the villages, which in his former visit were populous, all deserted, "the Indians all dead."¹

Richard Vines and his companions, who had been sent by Fernando Gorges to explore the country, wintered among the Indians during the pestilence, and remained untouched, the disease attacking none of the English.²

Gookin,³ in his account of the Indians, places this pestilence in 1612-13, and about seven or eight years before the English arrived at Plymouth. It would appear from this statement that the disease began to rage a number of years previously to 1618. In a sermon preached by Elder Cushman at Plymouth, in 1620, just after the colony arrived, he states that the Indians "were very much wasted of late, by a great mortality that fell amongst them three years since, which, with their own civil dissensions and bloody war, hath so wasted them as, I think, the twentieth person is scarce left alive."⁴ This pestilential distemper continued for a number of years, for some of the Plymouth settlers who went to Massachusetts (now Boston) in 1622, to procure corn of the natives, "found among the Indians a great sickness, not unlike the plague, if not the same." It raged in winter, and affected the Indians only.⁵

So fatal was the pestilence in North America, that the warriors, from Naragansett to Penobscot, were reduced from nine thousand to a few hundreds. Hutchinson says thirty thousand of the Massachusetts tribes alone were supposed to have been reduced to three hundred. When the Pilgrims arrived in 1620, they found the bones of those who had perished, in many places, unburied.⁶ Dermer seems to think that this disease was a species of plague, and he saw some of the sores of those who had survived. Hutchinson says, "some have supposed it to have been the smallpox, but the Indians who were perfectly acquainted with this disease, after the English arrived, always gave a different account of it, and described it as a pestilential putrid fever." General Gookin says, "What the disease was, which so generally and mortally swept them away, I cannot learn; doubtless it was some pestilential

¹ Purchas, vol iv, 1778.

² Belknap's Life of Gorges, American Biography, vol. i, p. 355.

³ Historical Collections, p. 8.

⁴ Hazard's Collection, vol. i, p. 148.

⁵ Prince's Chron., p. 124.

⁶ Magnolia, Book 1, p. 7.

disease. I have discoursed with some Indians who were then youths, who say that the *bodies all over were exceedingly yellow* (describing it by a yellow garment they showed me) both before they died and afterwards." Noah Webster¹ concludes from this account, that the "*pestilence was the true American plague called yellow fever,*" and he sustains this view by the statement in Prince's Chronology, that the fever was attended with hemorrhage from the nose. Webster cites this as an example of the origin of yellow fever in this country. This supposition cannot be maintained, as the pestilence prevailed in the winter with the greatest severity; and we are not justified in adopting the conclusion of Webster, simply because there was a general yellowness of the skin attended with hemorrhages from the nose.

About 1745, a malignant epidemic disease prevailed amongst the Indians, but did not affect the whites, and which in like manner Webster considered as the "infectious yellow fever." The patients are said to have first complained of a severe pain in the head and back, which was followed by fever. In three or four days the skin turned as yellow as gold, a vomiting of black matter took place, and generally a bleeding at the nose and mouth, which continued till the patient died. These symptoms resemble, to a certain extent, those of the disease known to the Mexicans as *Matlazahuatl*; and also those which characterize the *malarial hæmaturia*, which, since the civil war, has prevailed to a considerable extent in the Southern States, and has been attended with a high rate of mortality. The Indians, in common with the whites, were subject to the various forms of malarial fever (intermittent, remittent, and congestive, and malarial hæmaturia) and it is well known that in the first settlement of both North and South America, the Spanish, French, and English colonists suffered terribly from these diseases. Many of the most flourishing and populous settlements were in a few years almost depopulated by these fevers, which committed the greatest ravages in those towns and colonies which were located near the mouths of large rivers, in low marshy regions. Entire armies were thus destroyed. The pioneers who cleared the forests and drained the low-lands were either suddenly cut off by these high grades of bilious fevers which were often attended with a universal yellowness of the skin (jaundice) and incessant vomiting of bilious matter which was sometimes mixed with blood (black vomit); or were slowly poisoned by the malaria of the marshes and swamps, and dragged out a miserable existence, rendered almost intolerable by enlargement of the spleen and liver, by derangement of the blood and nervous system, and by neuralgia and dropsy. In that form of malarial fever characterized by complete jaundice, intense vomiting, nausea, and hemorrhage from the kidneys, which has received different names at various times and in divers countries, and which is no "new disease," even in the United States, the hemorrhage from the kidneys is preceded by congestion of these organs, and is attended with desquamation of the excretory cells and tubuli uriniferi. Whilst some of the symptoms, as the nausea and incessant vomiting—and in extreme cases black vomit,—the deep jaundice, and impeded capillary circulation, resemble those of yellow fever, yet there are marked differences between the two diseases.

¹ History of Epidemic and Pestilential Diseases, etc., 1799, vol. i, pp. 176-177.

As it is well established that malarial hæmaturia and the severer and more fatal forms of malarial fever prevailed only in certain years, and appeared to be dependent, to a large extent, on the degree of heat and moisture, as well as on the amount of organic matter in the soil; as these epidemics in the tropical and temperate regions of America are often of the widest extent and severest character; as the Indians suffered to an almost equal degree with the whites, and were, in North America, without the most important remedies, bark and quinine, it is but reasonable to suppose that, in certain seasons, large numbers perished by these diseases. And were it not for the free use of quinine in the treatment of paroxysmal fevers, many portions of the Southern cities would, from time to time, have been depopulated. Even in the more elevated regions of the country, such as those formerly inhabited by the mound-builders, the mortality from these diseases would now be very great, but for the beneficial effects of this remedy.

The origin of the *American plague or typhus* (vomito prieto, yellow fever) is involved in doubt, on account of the prevalence in the tropical, sub-tropical, and temperate regions, both amongst the natives and foreigners, of severe forms of malarial fever, often attended with jaundice, and sometimes with black vomit. If it could be determined at what time this terrible disease was clearly recognized by the medical profession and historical writers, as distinct from malarial fever, and as dependent on a specific cause, or upon a combination of causes peculiar to this fever, a firm ground for the discussion of its origin and its relations to the native population, as well as to the foreign elements on the American Continent, would be established. But it is well known that many of the older descriptions will apply as well to the severer forms of malarial fever, as to yellow fever; and also that the distinction of the one from the other has been the result of comparatively recent labors; and even at the present time there are not a few physicians who hold to the identity of these two diseases in their origin and essential nature.

If the history of yellow fever in the Western Hemisphere be considered, it will be found that the accounts and dates of its origin vary with the extent and character of the information of the writers in each city, locality, or island. Thus the French writers call it *Maladie de Siam*, and hold the tradition that the disease had been imported in the ship *Oriflamme*, which sailed with French colonists from Siam in the latter part of the year 1690. But it can be proved that the *Oriflamme* touched at Brazil, where yellow fever had been prevailing for several years, and Father Labat, who arrived at Martinico on the 29th of January, 1694, tells us that the passengers of the ship caught the disease in Brazil. Equally incorrect was the account given by Dr. Henry Warren of its introduction into Barbadoes between the years 1732 and 1738. It appears, however, from the statements of Mr. Richard Vines, a planter and practitioner of physic at Barbadoes, that yellow fever prevailed with destructive effects, as *an absolute plague*, as early as the year 1647; and Dr. Edward N. Bancroft, in his "Essay on Yellow Fever," suggests that it was called a *new distemper* in 1691 and 1694 because all who had had any accurate knowledge of it in 1647 were probably dead or removed.

Dr. Hillary, who enjoyed a high reputation as a successful practitioner and learned physician in Barbadoes, affirms that yellow fever appears to be a disease

indigenous to the West Indies, and to that part of the continent of America which is situated between the tropics.

The testimony of Humboldt is similar to that of Dr. Hillary, who held that the *vomito* has been endemic at Vera Cruz, Carthagena, and Havana, from the very foundation of these cities by the adventurers from Europe; and that this disease has appeared in the two continents and in the West Indies, whenever bodies of men born under a colder zone have exposed themselves in the low regions of the torrid zone.

The preceding facts show the fallacy of attempting to decide with certainty the date of the origin of yellow fever, from the statements of the writers of any one locality; and they also show the impropriety of confounding the period at which a disease has been first described on account of its having committed ravages in some particular locality and time, with the period of its first appearance.

Smallpox has caused a greater destruction and more rapid depopulation of the aborigines of insular and continental America, than all other causes combined.

In North America, the wholesale butcheries and cruel slavery of the Spaniards, the deadly rifle and cannon, and the still more deadly vices of the French and English, would have accomplished comparatively slow and uncertain results, but for the epidemic of smallpox, which, since its introduction in 1520 by a negro in the expedition of Narvaez, has committed its ravages periodically, and swept away whole tribes and nations.

After the discovery of Hispaniola by Columbus in 1492, and of the contiguous continents by other adventurers in succession, a general exchange of diseases, remedies, and natural productions, soon ensued between Europe and the newly discovered countries; in return for syphilis, a venereal distemper which was said to have been, up to that time, unknown in any part of Europe, the smallpox was communicated to the American Indians, and, at different intervals, committed such ravages amongst the natives (in whom, from their peculiar constitution, habits, and modes of medical treatment, the poison acted with peculiar power) as had well nigh swept them from the continent.

The spread of the smallpox, on its first introduction into Mexico in 1520, has been compared to the rapid march of fire over the western prairies. It first broke out in Cempoala, thence it spread rapidly over the neighboring country, and, penetrating through Tlascala, reached the Aztec Capital, where Cuitlahuac, Montezuma's successor, fell one of its first victims. Thence it swept down towards the borders of the Pacific, smiting down prince and subject, leaving its path strown with the dead bodies of the natives, who perished in heaps, like cattle stricken with the murrain. One-half of all the Indians attacked are said to have died, and this high rate of mortality is attributable partly to the crowded state of the cities and villages, but chiefly to the fact that the poor natives were ignorant of the best mode of treating the disease, and sought relief in their usual practice in febrile complaints, of bathing in cold water, which greatly aggravated the loathsome pestilence. According to Torquemada, there died in the Empire of Mexico alone, in this epidemic, three millions and a half; and Clavigero states, in his "History of

Mexico,"¹ that, in the epidemic of 1545, eighty thousand perished; and, in that of 1575, upwards of two millions died in the dioceses of Mexico, Angelopoli, Michoacan, and Guaxaca alone. Clavigero affirms that this information was derived from the bills of mortality presented by every curate to the viceroy.

Dr. Servando,² an Ecclesiastic, gives, in a letter dated London, January 10th, 1813, the following facts with reference to the history of smallpox in the American continent:—

“The smallpox, as well as the measles, was unknown in New Spain before the conquest. They were brought there, says Torquemada, by a negro from Pamsilo; and they occasioned such destruction, that he does not hesitate to affirm that the greatest part of the Indians died, among whom was the Emperor Cuitlahuac, who succeeded Montezuma. It is stated, that, according to the reports which Cortez ordered to be made to him, there died in the Empire of Mexico alone, three millions and a half. It was not long before fresh variolous infection was brought over, and, according to Torquemada, eight hundred thousand Indians perished. Europe has continued to communicate this scourge at intervals of thirty, twenty, or a less number of years; and the infection, extending itself from Vera Cruz to the most remote parts, has, like a destructive plague, spread terror, death, and desolation over that continent. The longer it is retarded the more fatal it becomes, because the danger increases with the age of the sufferers. Thirty-three years ago, more than ten thousand persons were carried off in the towns of Mexico and Puebla alone by this contagion, which was the last but one that has visited that kingdom, and was brought to them after an interval of nineteen years. It was from this last attack, that I was a sufferer in my native country, Monterey, the capital of the new kingdom of Leon; and there was not a family that did not put on mourning. Some of these families disappeared altogether, because they were all adult persons and had been seized by the epidemic in the city. Those who lived in the country were preserved from its influence by banking the dunghills of the large and small cattle around their dwellings. . . .

Torquemada says, speaking of the first introduction of the infection, that the reason why it killed so many was, that the Indians were ignorant of the nature of the disease, and bathed and scratched themselves.

In the new kingdom of Leon there were bands of wandering natives so warlike, that the Spaniards could not, with arms in their hands, resist their attacks upon their towns; the smallpox, however, extirpated almost all of them; and fifty years ago, heaps of bones, like so many trophies of the disease, were to be seen under the old tufted oaks in the fields. At the present time when a savage sees one of his companions attacked with the infection, he leaves him, his horse, and his possessions, and flees to a great distance in the woods. It has never happened that the Spaniards have secured themselves against infection by stopping their communications with the Indians.”

Smallpox did not, in these early visitations, confine its ravages to Mexico, but

¹ Vol. iii, p. 393.

² Observations on the Different Kinds of Smallpox, by Alexander Monro, Edinburgh, 1818, p. 7.

desolated the great cities of Central America. In 1588 it was carried into Peru, and still later into Paraguay, where it is said to have proved more fatal to the natives than in any other part of the world, hardly any recovering from the disease; amongst the adult Indians of Brazil, who used to go naked, and to paint their skin, it was generally certain death.

According to Humboldt,¹ the smallpox committed terrible ravages in 1763, and especially in 1779, in which year it carried off in the capital of Mexico alone, more than nine thousand persons. Every evening tumbrels passed through the streets to receive the corpses, as at Philadelphia during the yellow fever. A great part of the Mexican youth were cut down that year.

The epidemic of 1797 was less destructive, chiefly owing to the zeal with which inoculation was propagated in the environs of Mexico, and in the bishopric of Michoacan. In the capital of this bishopric, the city of Valladolid, of six thousand eight hundred inhabitants inoculated, only one hundred and seventy, or 2½ per cent., died; and several of those who perished were inoculated at a time when they were probably already infected in the natural manner. Fifteen in the hundred died, embracing individuals of all ages, who, without being inoculated, were victims of the natural smallpox. There were then inoculated in the kingdom, between 50,000 and 60,000 individuals.

In the month of January, 1804, the *vaccine inoculation* was introduced into Mexico, through the activity of Dr. Thomas Murphy, who brought the virus several times into North America. This introduction found few obstacles; the cow-pox appeared under the aspect of a very trivial malady; and the smallpox inoculation had already accustomed the Indians to the idea, that it might be useful to submit to a temporary evil for the sake of avoiding a greater. Humboldt further observes: "If the vaccine inoculation, or even the ordinary inoculation, had been known in the New World in the sixteenth century, *several millions of Indians would not have perished victims to the smallpox*, and particularly to the absurd treatment by which the disease was rendered so fatal. To this disease, the fearful diminution of the number of Indians in California is to be ascribed."

The ships of war commissioned to carry the vaccine matter into America and Asia arrived at Vera Cruz shortly after the visit of Humboldt.

Don Antonio Valmis, physician general of this expedition, visited Porto Rico, Cuba, Mexico, and the Philippine Islands; and his stay at Mexico, where nevertheless the cow-pox was known before his arrival, contributed singularly to facilitate the propagation of the vaccine disease. In the principal cities of the kingdom, vaccine committees were formed (*Juntas Centrales*) composed of the most enlightened individuals, who, by vaccinating monthly, preserved the matter from being lost. Valmis discovered the cow-pox, in the udders of Mexican cows, in the environs of Valladolid, and in the village of Alesco near La Puebla.

The ravages occasioned by the smallpox in the torrid zone, among a race of men whose physical constitution seemed adverse to cutaneous eruptions, placed in a still clearer light the value and importance of Jenner's discovery, which was

¹ Political Essay on the Kingdom of New Spain, vol. i, pp. 111-116.

thought to be a much greater blessing for the equinoctial parts of the new continent than for the temperate climate of the old.

Humboldt has recorded facts which would seem to show that the protective powers of cow-pox were known in Peru before the discoveries of Jenner.

The ravages of smallpox were not confined to the more populous and more highly civilized countries of North and South America, but extended into wide regions; and the disease was introduced amongst the tribes and nations inhabiting the country embraced within the present limits of the United States, at different times, by the various exploring expeditions and colonies. The history of many of these devastating visitations of smallpox has never been recorded, and whole tribes and nations within the interior of North America have been destroyed, without a single record of their miserable sufferings. William Robertson states, in his "History of America," that, in 1632, the smallpox swept away such multitudes of the natives of North America, and especially of the regions along the Atlantic coast, that whole tribes disappeared. Lawson, Adair, and many other writers have recorded the desolation wrought among the various tribes of Indians by smallpox at various periods.

The powerful nation of the Katahbas, which, in the early history of South Carolina, numbered several thousand warriors, in 1743 could muster scarcely 400 men. In 1738, smallpox destroyed one-half of the great Cherokee nation; and the Muskohgees, Uchees, Shawanese, Chactaws, Chickasaws, Natchez, and a host of other tribes have suffered to an equal extent.

In describing the Sewees of South Carolina, John Lawson¹ says: "These Sewees have been formerly a large nation, though now very much decreased since the English hath seated on their lands, and all other nations of Indians are observed to partake of the same fate; when the Europeans come, the Indians, being a people very apt to catch any distemper, they are afflicted withal; the smallpox has destroyed many thousands of these natives, who, no sooner than they are attacked with violent fevers and the burning which attend that distemper, fling themselves over-head in the water, in the very extremity of the disease, which, shutting up the pores, hinders a kindly evacuation of the pestilential matter and drives it back, by which means death most commonly ensues."

In 1832, ten thousand, or about one-half of the tribe of the Pawnees, were destroyed by smallpox introduced by the fur traders and whiskey sellers. In 1837, this malady swept through the Missouri Valley. It broke out among the Mandans, and reduced the number of this tribe from 1600 to 31. It reduced the Minnetarees from 1000 to 500; the Arickarees from 3000 to 1500; the Assiniboins, a tribe of 9000, and the Crows, estimated at 3000, lost about one-third of their number; and the Blackfeet, estimated at 30,000, lost about 8000. Schoolcraft estimates that, at a moderate calculation, no less than 10,000 Indians fell before this terrible scourge in a few weeks.

According to George Catlin: "The system of trade, and the smallpox, have been the great and wholesale destroyers of these poor people, from the Atlantic

coast to where they are now found. And no one but God knows where the voracity of the one is to stop, short of the acquisition of everything that is desirable to money-making man in the Indians' country; or when the mortal destruction of the other is to be arrested, whilst there is untried flesh for it to act upon, either within or beyond the Rocky Mountains.

"I would venture the assertion, from books that I have searched, and from other evidences, that, of numerous tribes which have already disappeared, and of those that have been treated with, quite to the Rocky Mountains, each one has had this exotic disease in its turn, and in a few months has lost one-half or more of its numbers; and, from living witnesses and distinct traditions, this appalling disease has several times, before our day, run like a wave through the Western tribes, over the Rocky Mountains, and to the Pacific Ocean, thinning the ranks of the poor Indians to an extent which no knowledge, save that of the ever-looking eye of the Almighty, can justly comprehend."¹

Mr. Catlin² thus describes the sufferings of the Mandans by this disease, at the time of their extinction, in the summer of 1838.

"It seems that the Mandans were surrounded by several war parties of their more powerful enemies, the Sioux, at that unlucky time, and they could not, therefore, disperse upon the plains, by which many of them could have been saved; and they were necessarily inclosed within the piquets of their village, where the disease in a few days became so very malignant, that death ensued in a few hours after its attacks. So slight were their hopes, when they were attacked, that nearly half of them destroyed themselves with their knives, with their guns, and by dashing their brains out by leaping, head foremost, from a thirty-foot ledge of rocks in front of their village.

"The first symptom of the disease was a rapid swelling of the body, and so very virulent had it become, that very many died in two or three hours after their attack, and that in many cases without the appearance of the disease upon the skin. Utter dismay seemed to possess all classes and all ages, and they gave themselves up in dismay, as entirely lost. There was but one continual crying and howling, and praying to the Great Spirit for his protection, during the nights and days; and there being but few living, and those in too appalling despair, nobody thought of burying the dead, whose bodies, whole families together, were left in horrid and loathsome piles in their own wigwams, with a few buffalo robes, etc. thrown over them, there to decay and to be devoured by their own dogs. . . It spread to other contiguous tribes, to the Minnetarees, the Knisteneaux, the Blackfeet, the Cheyennes, and Crows, among whom twenty-five thousand perished in the course of four or five months."

The Reverend Mr. Parker, in describing his tour across the Rocky Mountains, says that amongst the Indians below the falls of the Columbia, at least seven-eighths, if not nine-tenths, as Dr. McLaughlin believes, have been swept away by disease between the years 1829 and the time that he visited the place in 1836. "So many and so sudden were the deaths which occurred, that the shores were

¹ North American Indians, vol. ii, p. 774.

² Vol. ii, p. 779.

strewn with the unburied dead; whole and large villages were depopulated, and some entire tribes have disappeared."

This mortality, he says, "extended not only from the cascades to the Pacific, but from very far north to the coast of California."

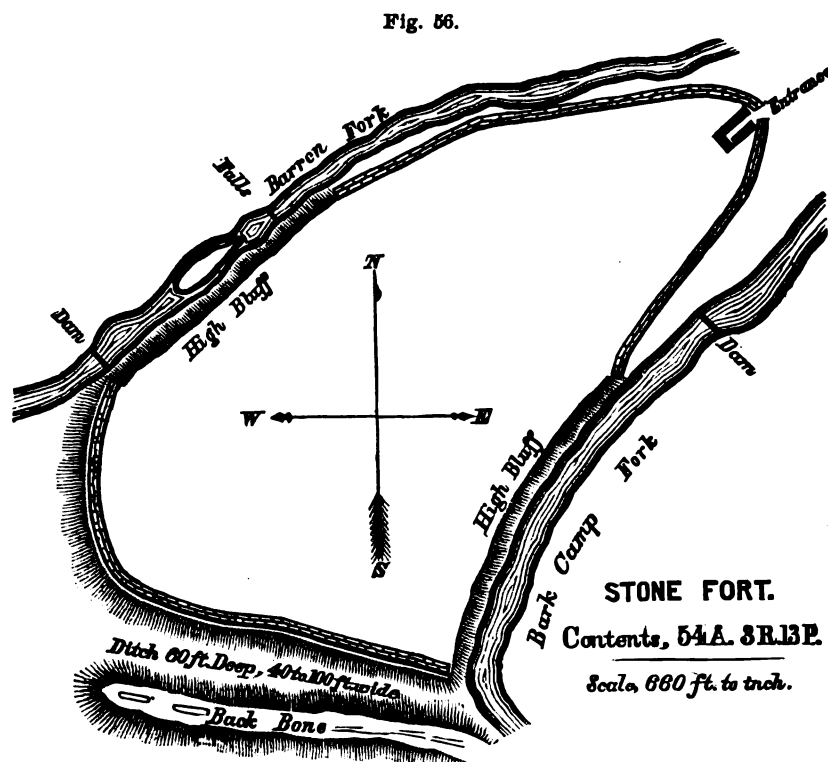
These facts, which might be greatly multiplied, show clearly how entire nations might have been destroyed in the interior of the country, as in Tennessee and Kentucky, and in the great valley of the Mississippi, by an epidemic, without leaving any records or memorials, except their sepulchres, bones, mounds, earthworks, stone implements, pottery, and objects of worship.

CHAPTER VI.

THE STONE FORT AND OTHER ABORIGINAL REMAINS.

THE stone work, or fortification, in Coffee County, Tennessee, situated at the junction of the east and west branches of Duck River, near Manchester, and known as the Stone Fort, has been described at length, by Haywood and in the "Ancient Monuments of the Mississippi Valley;" we shall, therefore, confine our observations chiefly to supplying certain deficiencies in these descriptions.

The account and plan of the Stone Fort given by Squier and Davis, are copied from the "Western Messenger," and the errors are due to the writer of the article. In this plan the entrance is especially defective. At the time of my visit to the locality, I found a plan by E. W. Nance, which in like manner presented some inaccuracies. Mr. W. A. Thoma, a resident of Manchester, therefore kindly re-surveyed the works at my request, and executed the plan which will be found below, Fig. 56.



Plan of Stone Fort, near Manchester, Tennessee.

The wall, which now varies from four to ten feet in height, is composed of loose rocks gathered apparently from the bed of the streams below, and from the sides

of the hills and bluffs. These rocks exhibit no marks of the hammer or of any other mechanical instrument. They have been piled promiscuously together without any regularity, and in some portions of the wall, earth has been freely mixed with them, and also heaped upon the top of the structure. Where the bluff is steep and impassable, the wall ceases, as is shown in the preceding plan.

The ditch in the rear of the works, extending from one branch of the river to the other, is supposed to have been designed to convey water across, thus isolating a high ridge of limestone rocks, called the Back Bone, which overlooks and commands the Stone Fort.

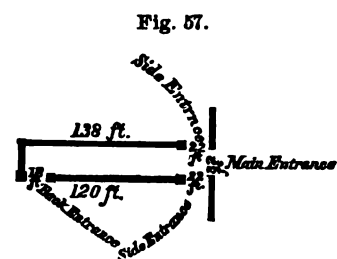
The entrance to the fortification deserves attention. On either side of the main entrance on the north, the wall composed of loose stones has been strengthened, forming what have been described as stone mounds. These more elevated terminations of the wall probably served as lookouts, or positions for defensive stockades and towers. They are about three feet higher than the main wall. Two stone walls extend back from the main entrance, one of which bends at right angles, leaving a space for a back entrance, as represented in Fig. 57.

The ends of the stone walls facing the main entrance on the inside are enlarged and elevated similarly to those of the outer wall already described. The largest of these foundations for defensive towers, is about sixteen feet square and ten feet high.

The ditch being on the inside of the wall, the side entrances are deep and narrow, and capable of admitting not more than two men abreast.

Several large forest trees are still standing within the inclosure and upon the walls, and Haywood states that, on the seventh of August, 1819, Colonel Andrew Ewing caused to be cut down a white oak tree, which grew upon the top of the wall, and that Major Maury and himself counted 357 rings. Colonel Ewing says: "The wall is mouldered down, so as to be at present about sixteen feet wide on the surface of the earth, and about six feet high. The rocks are covered with earth and appear like a hedge along an old ditch. One-half or more of the rock is a slate copperas ore, taken out of the bottom of the creek, on either side of the fort." "The age of the tree," remarks Haywood, "was seventy-eight years when De Soto landed in Florida, and thirty years when Columbus discovered America."

I carefully searched the enclosure for stone graves and relics, but discovered nothing relating to the aborigines. As the fort had been used by soldiers during a portion of the recent war (1861-1865) for a camping ground, and as a mill had been erected on the Barren Fork, fragments of iron utensils and of copper are occasionally found, also lead bullets, but these are clearly of modern date. Haywood says: "Captain Eastand attempted to cultivate a part of the ground within the *fort*, and, on the first attempt, in running a deep furrow, ploughed up a piece of flint glass, about one inch thick, and remarkably transparent; it appeared to be a piece of a bowl, very neatly fluted on its sides. There was also found a stone,



Plan of entrance to the Stone Fort.

very beautifully carved and ornamented, much superior to any known work of the Indians."

Upon careful inquiry amongst the citizens of Manchester, I could gather nothing whatever concerning these relics, neither could I learn that any others had ever been found within the inclosure.

A large oblong mound (composed of slabs and bowlders, similar to those employed in the construction of the *Stone Fort*), situated directly in front of the main entrance to the fort, and about three-quarters of a mile distant, is 600 feet in circumference, and 30 feet in height.

I caused a shaft ten feet square to be sunk into the summit of this mound. This excavation revealed the fact that, whilst the exterior and sides of the mound were formed of loose rocks, the central portion is composed of earth.

At the depth of four feet, a wooden coffin in a decayed state was reached. The boards had been neatly planed, united by tongue and groove, and fastened with wrought iron nails. The bones of the skeleton were soft and much decayed. The cranium was symmetrical in its outline, and not at all flattened at the occiput. The forehead was broad, and the bones of the face of moderate size and not prominent. Nasal bones prominent. Lower jaw of small size, and more delicate in its structure than is usual in the crania of the aboriginal stone-grave race. I was convinced that the coffin and skeleton were of modern date, and that the cranium belonged to the white race.

Upon inquiry, I was informed by the proprietor, who resided at the foot of the mound, that some twenty years ago a stranger was taken ill in his dwelling near the foot of the mound, and left as his dying request, that he should be buried in its summit.

The wooden coffin and human remains were therefore of recent origin. I was surprised to find the bones so much more decayed than those of many of the aborigines in the stone graves. I could account for this difference only in one of two ways. Either the bones of the aboriginal race were more dense than those of this stranger, or else the aborigines carefully removed the flesh and oiled the bones before depositing them in their last resting-place, surrounded them with skins and matting, and protected them with the rude stone coffins. The shaft was carried several feet below the position of the coffin, without discovering anything of interest. I had neither the means nor the time to make a complete section and exploration of this mound.

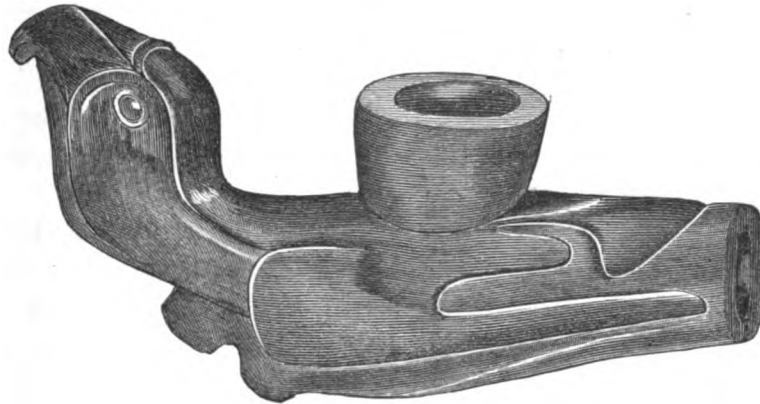
Upon careful examination, I found the other mound, which had been described by former observers as lying about half a mile distant, on the northwest of the fort, not to be, as has been stated, similar to the one just described, and composed of loose rocks, but simply a natural, round rocky hill.

The cave in the river bank below formerly contained human bones, and it has been worked for saltpetre at different times. The pile of rubbish which had been removed from the cave by the nitre manufacturers, was also composed in large measure of the fragments of human bones.

Earthen vessels, pipes, and stone implements are said to have been discovered in the cave by the first explorers.

The stone pipe represented below (Figure 58) was found in this immediate vicinity.

Fig. 58.

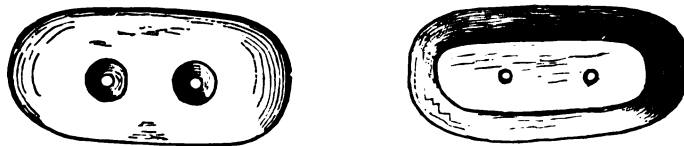


Stone pipe found near the Stone Fort and Cave in the vicinity of Manchester, Tennessee. About one-half of the natural size.

This pipe was carved from beautiful dense chocolate-colored steatite, and represents a bird of prey, most probably the bald eagle.

The low-lands bordering on Duck River in the vicinity of the Stone Fort appear to have been thickly inhabited and extensively cultivated by the aborigines. In the fields along the valley of Duck River, I found numerous arrow and spear-heads, fragments of pottery and silex, several stone hatchets and chisels, and the oval flat stone, pierced with two circular holes, and represented in figure 59.

Fig. 59.

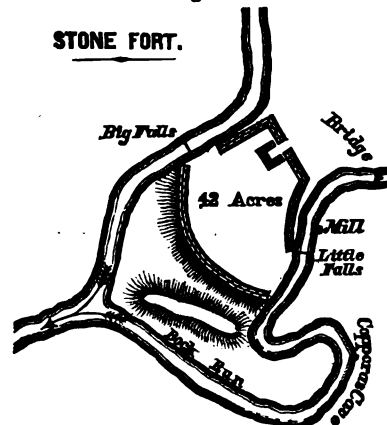


Stone implements from the vicinity of the Stone Fort, near Manchester, Tennessee. One-half the natural size.

In the woods northwest of the fort, several piles of rock were observed, about two feet high and ten feet in diameter. When these were removed, they were found to have covered a layer of ashes, charcoal, and burnt earth. They are supposed to have marked the place of the incineration of human bodies. These were the only remains resembling graves which were discovered.

Figure 60 is a copy of the plan, executed by E. W. Nance, and represents the Stone Fort as inclosing only forty-two acres. Haywood states that the fort contained thirty-three acres of land within its walls. In the plan of E. W. Nance, the general shape also is incorrectly given.

Fig. 60.



Plan of the Stone Fort, near Manchester, Tennessee, as executed by E. W. Nance.

Numerous other localities might be mentioned, where interesting aboriginal remains have been observed, as at Castalian Springs; Bledsoe's Lick, in Sumner Co.; on the Big Harpeth near the mouth of Dog Creek; on the Cumberland River above Nashville, in Davidson County; on the banks of Harpeth in Williamson County; on Piney, Duck, Powel's, Collins, French Broad, Hatchy, Forked-deer, Obed's, Tennessee, Caney Fork, and other rivers.

Those who would attempt to assign some definite age to the Stone Fort, and to the mounds and earthworks of Tennessee and of the adjacent States, should not fail to accord to the following facts their full weight.

At the time of the discovery of America, a portion at least of the Mississippi Valley was inhabited by the Mound Builders.

The testimony of the earliest Spanish and French explorers, and the traditions of the Indians, concur in establishing the fact, that, at the time of the discovery of North America, the Mississippi Valley, together with the States now known as Alabama, Florida, and Georgia, was inhabited by powerful and warlike nations, who cultivated the soil, lived in fortified towns, adored the sun, and had temples located upon artificial mounds, in which idols were enthroned and worshipped.

Ponce de Leon, who visited the continent in 1512 and discovered a country of vast and unknown extent, to which he gave the name of Pasca Florida, in his subsequent attempts to erect a town and fortress upon the coast, was assailed with such vigor by the natives, that he was compelled to abandon the country.

Ponce de Leon lost the greater part of his men from the arrows of the Indians, and himself received a mortal wound.

De Ayllon, who, in 1520, visited the coast of South Carolina, in that portion which lies near to the mouth of the Combahee River, decoyed and carried off from the Island of St. Helena, a large number of the kind and unsuspecting natives, who had entertained the Spaniards with liberal hospitality, and upon his second voyage, in 1524, met with a just reward for the cruelty and perfidy which subsequently yielded such bitter fruits. After landing upon what is now the coast of Georgia or South Carolina, two hundred of his soldiers penetrated a few leagues into the interior, whilst he remained with the rest of his force to guard the ships; the Indians attacked and massacred the whole of the detachment sent out, and then, falling suddenly upon the guard near the ships, succeeded in driving them from the coast.

The point of land reached by the Florentine, John Verrazzani, in his voyage of discovery in 1524, appears to have been somewhere about Wilmington, in the present state of North Carolina, near where the English, seventy years afterwards, under Sir Walter Raleigh, made the first attempt at colonizing America. When Verrazzani visited the Indians of the southern portion of what now constitutes the United States, he found them "gentle and courteous in their manners, of sweet and pleasant countenances, and comely to behold." Pursuing a simple and innocent style of living, they numbered a large population.

While the Indians of the south were enabled by the fertility of the soil to cultivate various grains and vegetables, those of the more northern latitudes were constrained to live chiefly by fishing and hunting. The agricultural occupations of

the former rendered it necessary to locate themselves within certain limits of territory, which they built upon and divided into extensive fields, while the latter, who supported themselves by fishing and the chase, were forced to lead a nomadic life, which allowed no time for improvement of any kind. Hence amongst the Southern Indians were found villages and towns, well built, and guarded around with walls. The inhabitants were somewhat experienced in the arts, and in the notions of government, law, and morality, and were somewhat advanced in civilization.

Narvaez, who attempted the conquest of Florida in 1528 with a well appointed army of four hundred foot and twenty horse, after gaining and sacking several fortified towns surrounded with extensive fields of corn, and well supplied with provisions, was so harassed by the savages, who continually lurked about the camp and killed many of the men and horses during the night, that he was compelled to abandon the enterprise.

It would be foreign to our present purpose to follow the army of De Soto, which, for four years, astonished and vanquished the natives in many bloody and desperate battles, through its wanderings in the present States of Florida, Georgia, Tennessee, Alabama, Mississippi, and Arkansas; but we shall confine our attention to those results of the expedition which throw light upon the condition and customs of the ancient inhabitants of the valley of the Mississippi. The tribes of Indians inhabiting the immense territory called by the Spaniards Florida, were worshippers of the sun, were governed by despotic princes, cultivated the soil, had made some advances in the arts; and their manners, customs, and religion pointed to an origin in common with those of the ancient inhabitants of Mexico. The population was much greater at the time of the invasion of De Soto than it has been at any subsequent period. Large armies were frequently arrayed against him. In Potosa, Florida, he was furnished with seven hundred burden bearers.

In Ocute, Georgia, he was supplied with two hundred of these Indian servants, and at Cafeque, in the same State, four thousand men are said to have transported the effects of his army. A numerous population was found in the province of Coosa, and large forces opposed him at Mubilia, Chickasa, and Alibamo.

The invasion of De Soto resulted in the destruction of a large Indian population in all the territory through which he passed; they were not only destroyed by thousands in the bloody battles, but they were worn out by heavy burdens, and hunted down by blood-hounds. The European diseases, such as smallpox, which the natives caught from the Spaniards, served also to thin out their ranks. Again, the constant bloody wars in which they were afterwards engaged amongst themselves, and which to a great extent grew out of the invasion, still further reduced their numbers.

At the time of the invasion of De Soto, the towns were surrounded with walls of earth, and had towers of defence; entrenchments and ditches were also found in various parts of the country. The most remarkable of the latter was at Pascha, west of the Mississippi. Here a ditch, "wide enough for two canoes to pass abreast without the paddles touching, surrounded a walled town. It was cut nine miles long, communicated with the Mississippi, supplied the natives with fish, and afforded them the privileges of navigation."

The natives formed artificial mounds for purposes of burial, worship, habitation, and defence. The houses of the chiefs, with but few exceptions, stood upon large and elevated artificial mounds.

When the Indians of that time (1540) resolved to build a town, the site was usually chosen upon low rich land, by the side of some stream, or in the neighborhood of a large never-failing spring, where they first erected a mound from twenty to fifty feet high, round on the sides, but flat on the top. The habitation of the chief and his family was erected upon the summit. At the foot of the eminence, a square was marked out, around which the principal men placed their houses, and around these the inferior classes erected their wigwams. Some of these mounds had stairways upon their sides, and were so steep as to be ascended only by these artificial means. They were thus rendered secure from the attacks of an Indian enemy.

Mounds were also erected over the chiefs after their death, whilst others were formed by the slow accumulation of the dead through long ages.

The aborigines, at the time of De Soto, worshipped the sun, and erected large temples, which were also receptacles for the bones of the dead.

They also entertained great veneration for the moon and certain stars. When the Indian ambassadors crossed the Savannah to meet De Soto, they made three profound bows towards the east, intended for the sun, three towards the west, for the moon, and three towards De Soto. Upon the eastern bank of the Mississippi, the Indians approached him without uttering a word, and went through the same ceremony, making to De Soto, however, three bows much less reverential than those made to the sun and moon. Similar customs prevailed on the west bank of this great river. In the morning every Indian presented himself at the entrance of his cabin, and extending his hand towards the sun, as his first ray beamed from the eastern horizon, he addressed a rude, but fervent hymn of adoration to his glory. At noon they performed a similar act in token of their gratitude; and to the setting sun they addressed their thanks for all the bounties they conceived he had bestowed upon them during the day; and they were particularly careful that his last ray should strike their heads. A remarkable temple was situated in the town of Talmaco, which is supposed to have been located on the Savannah River, three miles distant from Cutifachiqui, near Silver Bluff. It was more than one hundred feet in length, and fifty feet in width. The walls were high in proportion, and the roof steep, and covered with mats of split cane interwoven so compactly that they are said to have resembled the rush carpeting of the Moors. The roof was covered with shells of various kinds, arranged in an ingenious manner. On the inside, beautiful festoons of pearls, plumes, and shells extended along the sides, down to the floor. The temple was entered by three gates, guarded by gigantic wooden statues, some of which were armed with drawn bows and wooden pikes, and others with copper hatchets. On the sides of the walls were large benches, on which rested boxes containing the deceased chiefs and their families. Three rows of chests, full of valuable pearls, occupied the middle of the temple, which also abounded in garments manufactured out of the skins of various animals, and in beautiful mantles of feathers.

Upon the route through Alabama and the neighboring States, De Soto found the temples to be the receptacles of bones of the chiefs, or suns, and of their families.

The large towns contained stone houses filled with rich and comfortable clothing, such as mantles of hemp, and feathers of every color exquisitely arranged. The dress of the men consisted of a mantle of the size of the common blankets, made of the bark of various trees, and a species of flax interwoven and dyed of various colors, also of well dressed and painted skins, and garments woven with beautiful feathers. The mantle was thrown over the shoulders, but the arms were exposed. Great men were sometimes borne upon litters by their subjects, after the manner of the Mexicans, whilst their heads were shielded from the sun by shades made of feathers or gaudily painted hides.

It is also recorded, that one of their most populous and powerful nations had been nearly destroyed by a severe and destructive pestilence, several years before the invasion of De Soto.

Champlain, in his explorations of the coast of Maine in 1605, found a populous agricultural race, whose neat covered lodges were in many places thickly strewn along the shores. Shortly after his visit, the nations of New England were swept off by a fatal pestilence, and when the Puritans, fifteen years afterwards, made their settlement at Plymouth, they found a comparatively small aboriginal population.

The art of forming entrenchments, stockades, and barricades was practised by the Iroquois, in their encounters with Champlain and his followers; and this remarkable people are known to have cultivated large fields of Indian corn everywhere throughout their fertile country, from time immemorial.

The Natchez Indians erected mounds and temples, worshipped the sun, obeyed despotic rulers, and practised the bloody rites of human sacrifice, up to the time of their great massacre by the French.

It is evident that various nations in the Mississippi Valley were populous, cultivated the soil, and erected mounds and earthworks as late as the invasion and explorations of De Soto.

Aboriginal Remains in Maury County, Tennessee.

Twenty-one miles southwest of Franklin, in Maury County, Tennessee, is a mound known as Parish's Mound. It is situated in a bend of Rutherford's Creek, not far below its junction with Carter's Creek, and two and a half miles above the junction of Rutherford's Creek with Duck River. This mound is 25 feet in height, 609 feet in circumference, and 152 feet in diameter on the summit. It is a beautiful square mound, covered with a thick growth of small cane. Near this large mound are two smaller ones, distant respectively three hundred and one hundred and seventy-five feet; the one northeast and the other southwest. They are situated upon a hill which terminates in a steep bluff on the creek. Near the mounds are fine springs and running streams. No traces of fortifications or of stone graves are visible at this day, in and around them. The position of these mounds in connection with the steep bluff of the creek, offers, however, most favorable advantages for defence. Rutherford's Creek is a narrow and deep stream; and there are mounds at various points above these remains.

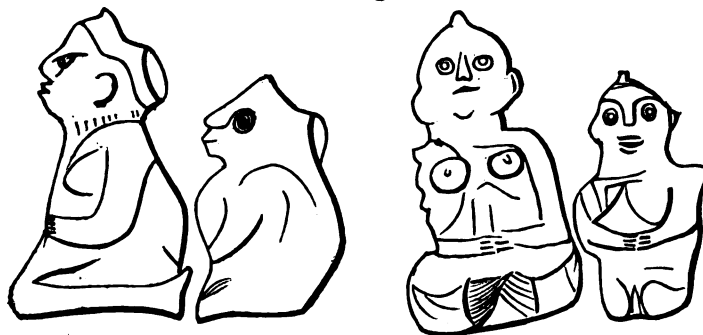
Aboriginal Remains near Pulaski, Giles County, Tennessee.

In company with my friend, Dr. J. T. Grant, of Pulaski, Tennessee, I explored a cave near this place, which was said to have contained formerly aboriginal remains, but without any results of interest.

Dr. Grant exhumed from a small rock mound near Pulaski the relics described below.

The images, the outlines of which are given in Fig. 61, apparently represent a male and a female. The largest, or female image, has a bold, elevated forehead, prominent nose, and open mouth, as if engaged in speech. It is 7.2 inches in height. The smaller, male image, has a retreating forehead of the Aztec cast, resembling one of the Flat-head Indians in whom this change in the cranium has been induced by artificial pressure. The mouth is drawn to a point and closed. The specimen is 5.6 inches in height. Both images are in the kneeling posture. In the following figure they are represented both in the full face and in profile.

Fig. 61.



Images from Rock Mound, near Pulaski, Tennessee.

The material of these specimens is crushed shells and red clay, and has evidently been vitrified by intense heat. They bear evidence of having been painted red, and striped in right lines with black paint. They are hollow within, and have circular openings in the back of the head.

The difference in the shape of the heads of these two objects from the same burial mound is interesting, as indicating that this custom of applying artificial pressure to the head was not universal, but appears to have been most generally practised with the males.

In Fig. 62 (a), is represented an implement or ornament, the lower portion of which has been broken off, which was taken from this mound. Length 3.5 inches, breadth 2 inches. This object is formed of greenstone, with two notches on each side, and three holes through the body. Marks of the abrasion occasioned by a string or thong are evident in the two upper holes. The use of this singular stone is unknown. Perhaps it was worn as an ornament about the neck. The figure marked (c) represents a fragment of a beautiful shell ornament with concentric circles engraved on its concave surface. The diameter is 3.5 inches. Two holes have been bored through the shell, half an inch apart, through which a cord or thong was probably passed, and by which the ornament was suspended.

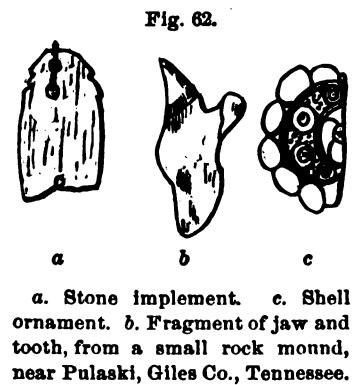
As we have seen, a similar ornament was taken from the breast-bone of a skeleton in the burial mound on the banks of the Cumberland River, opposite Nashville; and we have obtained a number of them from other aboriginal stone graves in Tennessee. We have observed the same kinds of hollow images and shell ornaments from localities widely separated. These facts are important as indicating that, although the mode of burial was somewhat different, these relics, as well as the accompanying skull, belonged to the aboriginal stone-grave race of Tennessee.

In Fig. 62, (*b*) represents a fragment of the jaw-bone and the massive tusk of some large carnivorous animal, most probably the American bear. Length 3.7 inches, length of the tooth exposed 1.5 inches, total length 3 inches.

A skull, the bones of which were very hard as if they had been undergoing petrification, was exhumed from the same mound together with the preceding relics. A portion of this human skull, on the right side, including fragments of the temporal and occipital bones, had been destroyed apparently before its deposit in the rock mound. It is depressed and retreating in the frontal region, resembling, in a measure, the crania which have been artificially flattened in infancy by placing a weight on the forehead. The general outlines of this skull may be gathered from the following measurements: facial angle 74° ; longitudinal diameter 6.5 inches; parietal diameter 5.8 inches; frontal diameter 4.3 inches; intermastoid arch 15 inches; horizontal periphery 19.2 inches.

The existence of two types in the heads of the images and in the crania is considered of great interest, apparently indicating that the stone grave race came in contact with some other race, and mingled with it.

The different forms of crania from the stone graves and mounds of Tennessee, may be gathered from the following measurements, which I made with carefully constructed and standard instruments.



Number of the cranium.	Facial angle, degrees.	Internal capacity in cubic inches.	Longitudinal diameter, inches.	Parietal diameter, inches.	Frontal diameter, inches.	Vertical diameter, inches.	Intermastoid arch, inches.	Intermastoid line, inches.	Occipito-frontal arch, inches.	Horizontal periphery, inches.	Diameter of head and face, inches.	Zygomatic diameter, inches.	No. of the skull as examined in stone graves & mounds.
1	76.5	75	6.3	5.4	4.3	5.5	15	5	13.5	19	7.5	5.1	10
2	80	78	6	5.6	4.4	5.4	14.6	5.1	13.2	18.9	7.2	5.2	14
3	75	78	6.1	5.7	4.3	5.6	15	5.2	13	19	7.3	5.3	17
4	..	82	6.2	5.7	4.1	5.5	15.2	5.4	14	19	..	5.2	19
5	77	84	6.5	5.8	4.4	5.8	15.5	5.2	14.3	19.9	7.4	5.3	25
6	76	68	6.4	4.9	3.9	5.5	13.9	4.5	13.8	18.2	7.1	4.6	30
7	81	103	7	5.9	4.8	6.4	16.8	5.3	15.7	20.8	7.8	5.5	31
8	80	80	6.6	5.6	4.3	5.5	15	4.6	13.8	19.3	7.2	5.2	40
9	78	79	7	5.2	3.9	5.8	14.7	4.6	15.2	19.5	7.4	5	41
10	81	76	6.3	6	4.4	5.4	15.7	4.6	13.8	19.4	6.8	5.3	42
11	80	90	6.9	5.6	4.3	6	15.7	4.8	14.8	20.3	7.6	5.5	48
12	77	80	6.8	5.2	4.1	5.8	15	4.7	14.4	19.5	7.8	5.2	55
13	82	81	6.9	5.5	4.3	5.7	15	4.8	14	19.6	7.8	5	58
14	..	92	6.1	6.4	4.4	6	16.5	5.4	13.8	19.8	..	..	60
15	..	79	6.1	5.8	4.6	5.5	15	4.8	13.4	18.9	..	..	64
16	..	..	7.2	5.7	4.6	5.9	16	4.6	15.2	20.8	..	..	67
17	..	..	6.1	5.5	4.1	4.5	14	..	13.6	19	..	..	72
18	..	..	6.5	5.8	4.5	4.6	15	..	..	19.4	..	..	80
19	82	79.2	6.7	5.5	4.2	5.5	15	4.4	13.5	19.1	7.8	5.2	85
20	75	81.4	6.5	5.7	4	5.6	14.4	5	13.3	19.2	7.1	5.3	94
21	82	80.5	6.4	5.9	4.6	5.7	15	4.9	14	19	7.3	5.4	106
Max.	82	103	7.2	6.4	4.8	6.4	16.8	5.4	15.7	20.8	7.8	5.5	
Min.	75	68	6	4.9	3.9	4.5	13.9	4.4	13	18.2	6.8	4.6	
Mean,	78.8	81.44	6.5	5.68	4.21	5.56	15.0	4.57	13.88	19.8	7.4	5.2	

In the preceding table, skull No. 1 was from a stone grave in a mound on the banks of the Cumberland River. The oval of the skull was unusually perfect; the nose high and arched; the teeth sound, 16 above and 16 below, but worn by use; occiput less flattened than usual. Nevertheless this characteristic is readily observed when the skull is viewed vertically, or at the base; the flattening greatest on the left side.

No. 2, from the same burial mound as No. 1, presents a square pyramidal form; occiput greatly flattened; the result of artificial pressure during early life; cranium similar to that of the Natchez.

No. 3, from the same locality, has a full set of perfect teeth. The flattening is greatest on the left side.

No. 4, from the same locality as the preceding, has the occiput greatly and uniformly flattened; parietal diameter nearly equal to the longitudinal.

No. 5 is from a stone grave at Old Town, banks of Big Harpeth. The occipital bone shows the effects of pressure, which is much more marked on the left side; the right parietal protuberance is much fuller and thrown further back than the left; Wormian bones in the occipital suture.

No. 6 is from a stone grave at Old Town. The occiput is but slightly flattened; the skull quite symmetrical in outline; forehead narrow.

No. 7 is from a stone grave in a mound in the valley of the Cumberland, opposite

Nashville. It is a large, well-formed, massive cranium; skeleton over six feet in length. Whilst the occiput is somewhat flattened, the shape is more symmetrical, and the oval of the head more perfect, than in the majority of crania from the stone graves.

No. 8 is from a stone grave in a burial mound on the Big Harpeth. The nose is arched and prominent; the occiput flattened on the left side; the foramen magnum situated nearer to the left side of the base of the cranium.

No. 9 is from a stone grave at the residence of Col. Overton. Occiput but slightly flattened; it is also divided into two distinct portions by a well-defined suture, running directly across from the inferior angles of the parietal bones.

No. 10 is from a stone grave in a burial mound opposite Nashville. Flattening of the occiput, well marked; general form of the calvarium compact and square, with increase of parietal and vertical diameters, as the effect of occipital pressure.

No. 11 is from a stone grave in Cumberland Valley. A well-formed cranium; occiput flattened more on the left side; this has caused a greater prominence of the bones of the forehead and face on the left side, whilst the parietal protuberance is more marked and situated further back on the right side.

No. 12 is from a stone grave on the banks of Harpeth, near Franklin. The application of pressure during childhood, or, rather immediately after birth, has destroyed the symmetry of the entire cranium, altering the position of the foramen magnum, throwing the articulations of the lower maxilla out of a right line, and thus rendering one side of the face more prominent than the other. Even the symmetry of the lower jaw is destroyed, each ramus having a different angle and a different length.

No. 13 is from a stone grave on Harpeth River.

No. 14 is from a stone grave on the banks of the Cumberland River. -During its plastic condition in infancy this skull was evidently subjected to considerable pressure, which appears to have been exerted both upon the occipital and frontal bones.

No. 15 is from Old Town. The effects of pressure are well marked; the longitudinal and parietal diameters very nearly equal.

No. 16 is from Old Town. A large cranium; occiput but slightly compressed; marks of pressure more evident in the superior portion of the occiput and inferior angle of the parietal bones.

No. 17 is from Old Town. The parietal diameter is increased and the longitudinal diminished by apparent flattening.

No. 18 is from Harpeth River, near Franklin; occiput flattened.

No. 19 is from a stone grave on Harpeth River near Franklin; superciliary ridge prominent; occiput more flattened on the right side.

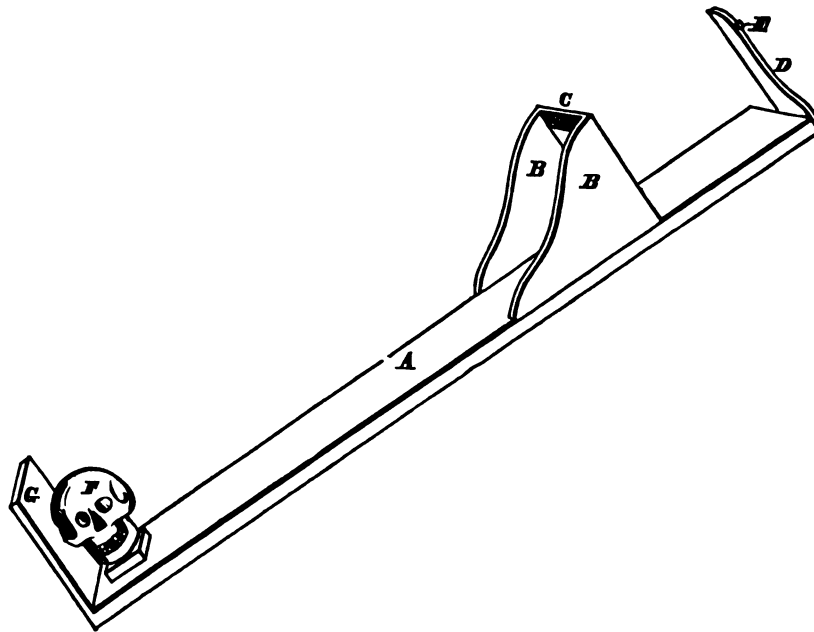
No. 20 is from a stone grave near Franklin. Cranium well formed; occiput but slightly flattened, compression greatest on the left side.

No. 21 is from a stone grave near Franklin. It is a square pyramidal skull with prominent superciliary ridge and high nasal bones. Occiput and inferior portions of the parietal bones flattened.

The outlines of the crania were obtained and compared by means of the cranio-

scope described by Dr. Morton in his "Crania Americana," and represented in Figure 63.

Fig. 63.



Craniograph.

The method of measurement was the same as that employed by Dr. Morton, whose "Crania Americana" continues to be the greatest repository of facts relating to the crania of the indigenous races of North and South America.

The following table presents the mean results of Dr. Morton's anatomical measurements.

	Toltecan nation, including skulls from the mounds.		Barbarous nations with skulls from the valley of Ohio.		American race, embracing Toltecan and barbarous nations.		Flat-head tribes of Columbia River.		Ancient Peruvians.		
	Number of skulls.	Mean.	Number of skulls.	Mean.	Number of skulls.	Mean.	Number of skulls.	Mean.	Number of skulls.	Mean.	
Longitudinal diameter	57	6.5	90	7	147	6.75	8	6.7	3	6.8	
Parietal diameter	57	5.6	90	5.5	147	5.55	8	6	3	5	
Frontal diameter	57	4.4	90	4.3	147	4.35	8	4.9	3	4.2	
Vertical diameter	57	5.3	90	5.4	147	5.35	8	4.8	3	4.8	
Intermastoid arch	57	14.9	90	14.6	147	14.75	8	14.6	3	13.3	
Intermastoid line	57	4.1	90	4.2	147	4.15	8	4.1	3	4	
Occipito-frontal arch	57	13.6	90	14.2	147	13.9	8	13.1	3	14.3	
Horizontal periphery	57	19.4	90	19.9	147	19.65	8	20	3	18.8	
Length of head and face	53	7.8	78	8.1	131	7.45	8	8.3	3	8.4	
Zygomatic diameter	49	5.3	64	5.3	113	5.3	8	5.7	3	5.1	
Facial angle	55	75° 35'	83	76° 13'	138	75° 45'	8	69° 30'	3	67° 20'	
Internal capacity in cubic inches	57	76.8	87	82.4	144	79.6	8	79.25	3	73.2	
Capacity of anterior chamber . . .	46	32.5 ¹	73	34.5	119	33.5	8	32.25	3	25.7	
Capacity of posterior chamber . . .	46	43.8 ¹	73	48.6	119	46.2	8	47	3	47.4	
Capacity of coronal region	46	14 ¹	71	16.2	117	15.1	8	11.9	3	14.6	
Capacity of sub-coronal region . . .	46	61.8 ¹	71	66.5	117	64.5	8	67.35	3	58.6	
The total capacity being estimated at 100, gives the following proportional results, as parts of 100.	Anterior chamber, Posterior chamber, Coronal region, Sub-coronal region,	..	42.6	..	41.5	..	42.1	..	40.63	..	35.1
		..	57.4	..	58.5	..	60	..	59.37	..	64.9
		..	18.47	..	19.6	..	19	..	15	..	20
		..	81.53	..	80.4	..	81	..	85	..	80

In his comments on the foregoing scale of results, Dr. Morton calls attention to the curious fact that the barbarous nations possess a brain larger by five and a half cubic inches than the Toltecan, while, on the other hand, the Toltecan possess a greater relative capacity of the anterior chamber of the skull.

Dr. Morton concludes, from his extended investigations, that the American race differs essentially from all others, not excepting the Mongolian; that the American nations, excepting the polar tribes, are of one race or species, but of two great families which resemble each other in physical, but differ in intellectual characters; that the cranial remains discovered in the mounds, from Peru to Wisconsin, belong to the same race, and probably to the Toltecan family.

A careful comparison of the cranial measurements of the Tennessee race with those obtained by Dr. Morton, establishes the fact that the former exceed the Toltecan in the internal capacity of the skull, in the proportion of 81.44 to 76.8; the facial angle also is greater in the proportion of 78.8 to 75.35. The largest skull in the Tennessee race exceeded in size, and in the capacity of the brain, the largest American, Ethiopian, Malay, and Mongolian skulls examined

¹ The seeming discrepancy in the sums of these two series of measurements arises from the fact that only 46 of the 48 skulls measured entered into each series.

by Dr. Morton, and approached more nearly to the largest Caucasian skull. The truth of this statement will be rendered evident by a comparison of the preceding table of cranial measurements of the Tennessee skulls, with the following measurements of the internal capacity of the cranium in the different races by Dr. Morton:—

Races.	Number of skulls.	Mean internal capacity in cubic inches.	Largest in the series.	Smallest in the series.
Caucasian	52	87	109	75
Mongolian	10	83	93	69
Malay	18	81	89	64
American	147	82	100	60
Ethiopian	29	78	94	65

The internal capacity of the largest cranium of the Tennessee race was 103 cubic inches; of the American, as measured by Dr. Morton, 100; of the Ethiopian, 94; of the Malay, 89; of the Mongolian, 93; and of the Caucasian, 109.

The subsequent investigations of Dr. Morton, as enlarged by the measurements of Dr. J. Aitken Meigs of Philadelphia, resulted in the increase of the mean cranial capacity of the Teutonic family by 1.5 cubic inches; of the Mongolian by 5 cubic inches; of the American by 13 cubic inches; and in slightly diminishing that of the Negro group.

A careful comparison of the cranial measurements of the stone-grave and mound-building race of Tennessee, with those recorded by Dr. Morton and Dr. Meigs, from a collection of 490 crania and 13 casts, leads to the conclusion that the skulls of the former race possess, in a marked degree, those characteristics which distinguish the American race.

The entire series of crania from the stone graves and mounds of Tennessee is characterized by the square form, and the more or less flatness of the occipital portion. The want of symmetry in many of them is due, without doubt, to the unequal manner in which the pressure was exerted during infancy. When viewed from behind, the stone-grave skull presents a conical or wedge-shaped outline, the base being wide at the occipital protuberances, and at the opening of the ears. From thence to the parietal protuberances it is almost perpendicular, and sloping from the parietal protuberances to the vertex. When the skull is laid on the side and viewed in outline, the base presents a massive, compressed appearance, the most prominent features being the short antero-posterior diameter and the comparatively long transverse diameter. This peculiarity also appears to be the result of artificial pressure rather than of original configuration. Owing to the effects of pressure, in many skulls the foramen magnum does not occupy a strictly symmetrical position in the base of the skull, being apparently thrown further back, and often more to one side. From the same cause it happens, that the glenoid fossæ are not symmetrical, one being frequently in advance of a line drawn at right angles to the antero-posterior diameter of the base of the skull. We have sometimes observed that this deformation was attended with a corresponding alteration in the lower jaw.

All the crania which I examined from the stone graves and mounds of Tennessee were characterized by the great comparative width of the parietal diameter, and the corresponding shortness of the longitudinal diameter. This peculiarity in like manner should be referred to the effects of artificial pressure, rather than to original conformation.

The foreheads, although low and retreating, are in some cases broad. The superior margin of the bony orbits is but slightly curved, whilst the lower margin is curved to a marked degree, thus presenting a striking contrast to the oblong orbit of the Malay skull. The nasal bones are well developed and prominent, with large nasal cavities, in striking contrast with the nose in the Negro race. The cheek bones are large and prominent, giving an angular configuration to the face. The upper jaw is elongated and inclined outwards, but the teeth are vertical. The lower jaw is truncated in front, massive, powerful, and broad. The teeth are large, and in most cases perfect. In the crania of those somewhat advanced in years, the teeth were generally much worn, and in some cases abraded almost to the sockets. It was evident from the examination of more than one hundred crania, that the effects of pressure manifested in the flattening of the occiput, in the shortening of the longitudinal diameter, and in the increase of the parietal diameter, varied within wide limits; and that, whilst some of the crania might be referred to the brachycephali of Retzius, some, in which the effects of artificial compression were but slightly marked, should be referred to the dolichocephali. Others evidently occupy a medium position between the two. Notwithstanding that the crania differ within certain limits as to the prominence of the superior maxilla, they should be classed with the prognathous, rather than with the orthognathous races. Whilst some of the dolichocephalic forms of these crania approach the Negro type in the projecting cheek bones and protruded upper jaw, the brachycephalic and intermediate forms, on the other hand, approach more nearly the Mongol type.

The pyramidal form of the crania, as well as the shape of the occiput, and the effects of pressure in altering the normal position of the sutures, is clearly seen when a comparison of their outlines viewed from behind is instituted. Such comparisons also show the cuboidal shape, the great width of the occipital protuberances, the perpendicular wall up to the parietal protuberances, and the comparatively flat vertex. The occiput is flattened in different degrees, and presents different forms, in consequence of the different amount of pressure to which it was subjected during infancy; and it is evident that the position of the coronal suture is altered, and the cranium rendered asymmetrical in proportion to the greater or less force applied during early life upon the one side or the other. The vertically flattened occiput is by no means characteristic of the entire series of crania of the stone-grave race; and I have been led to regard this peculiarity, not as a typical characteristic dependent on the specific differences of race, but as preëminently, if not entirely, the result of artificial modification during infancy. Not only do these crania manifest the different degrees to which the head of the child was compressed in its small, confined cradle, but they also exhibit in the greater flattening on one side or the other, and in the consequent

want of symmetry throughout the entire cranium, the different lines along which the compressing force was exerted. When these crania are laid on the occipital bone, they rest stably as upon a broad flat base. If the flattening has been greater on one side than on the other, the cranium will turn from the perpendicular and rest upon the flat portion of the occiput. The increase in the number of Wormian bones along the occipito-parietal sutures does not appear to be the result of pressure, because these are more numerous and larger in crania which exhibit little or no effect from pressure. The frequent occurrence of these intercalated bones appears to characterize the crania of the stone-grave race of Tennessee as well as those of the Inca Peruvians.

In one of the crania of the stone-grave race, in which the flattening of the occiput was so great as to render the parietal diameter greater by four-tenths of an inch than the longitudinal diameter, the pressure was greater upon the right side of the head, giving the cranium a deformed and one-sided shape, in addition to the great contraction of the antero-posterior diameter, and the marked increase of the lateral or parietal diameter. Thus the antero-posterior diameter of the right side of the skull, measured from a point just above the superciliary ridge to a point directly across on the occiput, is 4.7 inches, and on the left side 5.4 inches. In another cranium, the left portion of the occipital bone, near its junction with the left parietal bone, being decidedly flattened, as well as the inferior posterior angle of the left parietal bone, the right parietal prominence was more marked, and thrown further back than the left, which had been pushed forwards, as it were, by the effects of pressure. In still another cranium (which we select merely as a representative example of the effects of pressure upon the shape of the entire skull, and even upon the face and lower maxilla), the back of the skull is more flattened upon the left side than upon the right. This is attended by a greater prominence of the left side of the forehead, while the parietal protuberance is more marked, and situated further back on the right side. In fact, as we have endeavored to demonstrate by actual examples, the effect of this unequal pressure during infancy is to destroy the symmetry of the entire cranium; to alter the position of the foramen magnum, and the form and position of the atlas and superior cervical vertebræ; to throw the articulations of the lower maxilla with the cranium out of a right line; and thus to render one side of the face more prominent than the other. Even the symmetry of the lower jaw is destroyed by this pressure, each ramus having a different angle and a different length.

Daubenton more than a century ago called attention to the fact, that the foramen magnum is situated further back in apes than in man; and Scemmering asserted that such is the case with the Negro as compared with white races. But Prichard, after an examination of "many negro skulls," disproved the statement of Scemmering, which had been repeated by many writers, and demonstrated that the foramen in the negro skull corresponds in position with that of the white races, viz.: exactly behind the middle of the antero-posterior diameter of the basis cranii. Professor Jeffries Wyman,¹ in some recent determinations of the position of the foramen magnum with

¹ Observations on Crania, etc., Boston, 1868, pp. 11-14.

reference to the cranium (this position being indicated by the ratio of the distance comprised between two plumb lines, one dropping through the foramen and touching the anterior border, and the other touching the most prominent part of the occiput, to the long diameter of the cranium proper, taken as 100), arrived at the following results: While there is an actual difference in the position of the foramen magnum in the races compared, it is quite small when compared with the difference between the human species and the apes. Contrary to Scænmering's assertion, the negro does not make the nearest approach to the latter; on the other hand, although the negro cranium does not precisely agree with that of the white race, as stated by Pritchard, it very nearly approaches it, and it is the North American Indian which has the largest index.

The position of the foramen magnum is very different in the young and in the adult apes; the former approaching much nearer to the human race than the latter. Professor Wyman has pointed out other striking resemblances between the cranium of the young Gorilla and that of the adult man, which are much diminished as age advances.

I have carefully examined the position of the foramen magnum in the crania of the stone-grave and mound-building race of Tennessee, and have arrived at results similar to those first recorded by Daubenton,¹ Pritchard,² and Wyman, namely: that these crania have a lower index of the foramen magnum than those of the other races.

I have, however, after comparative examinations of crania variously altered by artificial compression, arrived at the conclusion that this peculiarity of the crania of the stone-grave race is, in great measure if not wholly, due to the effects of artificial pressure in flattening the occiput. Any flattening of the occiput would necessarily render the distance from its comparatively perpendicular wall to the anterior border less than in crania presenting the normal convex surface of the occiput. It appears to be evident, however, that such alteration of the index of the foramen magnum as is induced by artificial flattening of the occiput during childhood would not necessarily alter the position of the spinal cord relatively to the mass of the brain; since what is lost in length is gained in the height of the cranium, as is evident by the cranial measurements.

It is but reasonable to suppose that the index of the foramen magnum would be less in all those American tribes which still adhere to the practice of binding the child in its small cradle, with the head resting for months in the same position, upon the occiput, and pressed against a hard surface. I have observed the effects of pressure in flattening the occiput, in white infants who, during protracted illness, have lain long in one position.

This fact, therefore, as far as my observations extend, simply illustrates the effects of pressure in altering the relative position of the foramen magnum, in the stone-grave crania of Tennessee, and should not be cited as a peculiarity of this race.

¹ Sur la Difference du Grand Trou Occipital dans l'Homme et dans les autres Animaux. Mémoires de l'Acad. des Sciences, 1764.

² Researches into the Physical History of Man, 1851, vol. i, p. 285.

We propose to examine in the next place, whether the peculiar form of the crania from the stone graves throws any light on the origin or tribal relations of this extinct race.

This singular custom of flattening the head by artificial means, when the bones are young and in a plastic state, was not confined to the inhabitants of America, but is of great antiquity. Thus Hippocrates, in his treatise on "Air, Water, and Situation," mentions the *Macrocephali* amongst those people who were remarkable for the length of their heads, in which respect they differed from all other races. Hippocrates gives the following account of the mode in which the peculiar shape of the head was produced, and advances the theory that, after the similar configuration of the skull was produced, the peculiarity was propagated, and that it was thenceforth unnecessary to resort to artificial pressure. "At first the length of their heads was owing to a *law or custom*; it being an opinion among them, that those who have the longest heads are the most noble. The custom stood thus: as soon as the child was born, they immediately fashioned its soft and tender head with their hands, and, by the use of bandages and proper arts, forced it to grow lengthwise; by which the spherical figure of the head was prevented and the length increased. This at first was the effect of custom, to make nature operate in this way. In process of time, it became so far natural as to make the custom useless." The exact situation of the *Macrocephali* has not been determined, but it is supposed to have been not far from the *Palus Mæotis*, in the vicinity of the Caucasus.

According to Dr. Rathke, certain tumuli having been excavated at Kertsch in the Crimea, there were found in them, besides different utensils and statues, several skeletons; and it is most remarkable that the form of the head was greatly elongated, in the manner described by Hippocrates. With regard to the *Macrocephali*, Pliny, in the fourth chapter of the seventh book of his *Natural History*, mentions the *Macrocephali* in connection with nations dwelling upon the coast of Asia Minor; and Strabo, alluding to these people (Book I, Chap. ii, § 35, and Book XI, Chap. xi, § 7), locates them about Mount Caucasus, and describes them as practising Persian customs. I have failed, after a careful search, to discover any description of these people in the works of Herodotus.

In this connection it is also worthy of consideration, that numerous mounds, or barrows of earth, and sun-dried bricks, resembling, in many respects, similar structures in North America, are found in the plains and valleys of Western and Northwestern Europe, and in Central and Northern Asia. According to the testimony of Arminius Vámbéry, the Turcomans of the present day erect mounds over their distinguished men, at the time of burial, accompanied with ceremonies resembling, in some respects, those practised by the North American Indians. This custom existed among the Ancient Huns, and is in use in Hungary, even in our own time. Vámbéry, in his "Travels in Central Asia," also describes other great mounds of evident antiquity, the origin and uses of which are unknown to the natives; and Atkinson, in his "Narrative of Seven Years' Explorations in Siberia, Mongolia, and Chinese Tartary," has in like manner described the barrows of Chinese Tartary, one of which was one hundred and fifty feet in height, and steep, and regular in its form. According to the latter author, among the numerous tumuli scattered

over the steppe, built at different periods and by different races, the greater ones are the most ancient. One of these, composed of stone, and domelike in form, is three hundred and sixty-four feet in diameter and thirty-three feet high. This mausoleum must bear some resemblance to the large mound near the Stone Fort of Tennessee.

The archæologist will, without doubt, find the richest materials in these ancient mounds for the establishment of the cranial characteristics, and of the nature and perfection of the arts, of the former inhabitants of Europe and Asia. The question as to the origin and identity of the races of mankind should rest upon the results of such explorations, as well as upon the differences existing at the present day. The characteristics of the crania and works of art of these ancient mounds, and more especially of those along the northern borders of Asia, are of the greatest importance in the light which they may shed upon the migrations of tribes and nations, and the peopling of America.

The custom of artificially compressing the cranium appears to have been practised on the American continent, more especially by those nations which belonged to the Toltecan stock; and a comparison of the crania of the stone-grave race and mound-builders of Tennessee, with those of the *Inca* Peruvians and ancient Mexicans, establishes a very close relationship. The crania of the stone-grave race of Tennessee present marked contrasts with those of the ancient Peruvians, more especially in differences of form occasioned by artificial pressure. On the other hand, they possess certain striking peculiarities in common with the crania of the *Inca* Peruvians.

The researches of Dr. Morton have established the fact that the skull of these people is remarkable for its quadrangular form; the occiput is greatly depressed, or compressed, sometimes absolutely vertical; the sides are swelled out, and the forehead is sometimes elevated, but very retreating. The skulls of the *Inca* Peruvians, like those of the stone graves and mounds of Tennessee, are remarkable for their irregularity. In the whole series in the possession of Dr. Morton, there was but one that could be called symmetrical. This irregularity, in both series of crania, consists in the greater projection of the occiput to one side, showing, in some instances, a surprising degree of deformity.

Cieca, Torquemada, Garcilasso de la Vega, and others of the early writers upon America, have recorded the fact that the custom of distorting the skull by mechanical means in infancy was common in many provinces of Peru, at the period of the Spanish invasion. They have also shown that it was not introduced by the Incas, but was in use before they conquered the country, and that it was resorted to for the purpose of increasing the ferocity of the countenance in war, of augmenting an imaginary grace, and of adding to the health and strength of the body.

It is also obvious that there were two principal modes of effecting this end, and that they were very different.

The view advanced by Dr. Morton and others, that the Incas, or later Peruvians, who conquered the more ancient inhabitants, altered their customs and laws, and imposed a new language and a new religion, were the Toltecs, the most civilized nation of ancient Mexico, which, after governing that country for four

centuries, suddenly abandoned it about the year 1050 of our era, is of interest in this discussion, in that it furnishes a plausible explanation of the similarity between the crania of the Tennessee stone-grave and mound-building race and those of the Inca-Peruvians of South America. This supposition will be still further strengthened by the establishment of similarities with the ancient Mexicans. The form and expression of the Toltecan face, and the characteristics of their skulls, gathered from the terra-cotta heads found in the Toltecan ruins of Anahuac, and in the ruins of the temples of the Sun and Moon at Teotihuacan, and from the bas-reliefs of Palenque and other ancient Mexican cities, present a striking resemblance in size and configuration to the heads of the Peruvians. They are all very much compressed from back to front, having high and broad foreheads, oval faces, and prominent cheek-bones.

The Toltecan crania, figured by Dr. Morton (Plates XVI, XVII, XVII A, XVIII, LIX, LX, LXI), both in their outlines and in their measurements resemble closely those of the stone-grave and mound race of Tennessee. We observe the same want of symmetry, the same great width between the parietal bones, marked flattening of the occiput, and the same broad and ponderous jaws.

Most historians date the invasion of Mexico by the Toltecs, whose original seat is stated in their traditions to have been to the northwest of Mexico, in a country called Huehuetapallan, about the year 600 of the Christian era. The Toltecs, the most refined in their social relations, and most skilful in their arts and sciences of all the nations of Anahuac, introduced the cultivation of Indian corn and cotton, made roads, lived in towns and cities, and erected the most imposing monuments in the New World. During the reign of their last prince, about the beginning of the eleventh century, their prosperity and power were destroyed by a series of calamities. The rain denied them the necessary showers to their fields; the earth refused the fruits that supported them; and the air was infected with a mortal contagion which filled the graves with dead and carried consternation to the minds of the survivors. The remnant of this great nation sought relief from famine, sickness, and death, in other countries, and, about the year 1031, emigrated in large bodies to various parts of the continent, and extended themselves as far south as Yucatan.

According to the historian who records these events, the land of Anahuac remained solitary and depopulated for nearly one century. When the Aztecs took possession of Anahuac, in the 12th century, they found the gigantic pyramids of Cholula, Teotihuacan, and Papantle already existing, and referred them to the Toltecs.

As the Toltecs were not the original inhabitants of Mexico, and if it be granted that the similarity between their earthen pyramids, stone idols, warlike implements, drinking and cooking vessels, and crania, with those of the aborigines of Tennessee establishes a common origin; it may be a subject of inquiry, whether the aborigines of Tennessee came from Mexico, or were a remnant of the original stock which invaded Mexico in 600 A. D.

In the consideration of this question, the religious customs, laws, and history of the Natchez Indians, whose crania bear a striking resemblance to those of the

stone-grave race of Tennessee on the one hand, and to the Toltecs and Peruvian Incas on the other, should be considered. Fortunately the history of the Natchez has been preserved, and they form, as it were, a connecting link with the Toltecs of the past.

The Natchez cranium figured by Dr. Morton (Plates XX and XXI, p. 160-162, *Crania Americana*) resembles, in its flattened occiput, short antero-posterior diameter, great parietal diameter, and high crown, many of the Tennessee crania.

The Natchez practised the custom of distorting the head by compression, in the following manner, as described by Du Pratz.¹

“When one of the women of the natives is delivered, she goes immediately to the water and washes herself and the infant; she then comes home and lies down, after having disposed her infant in the cradle, which is about two feet and a half long, nine inches broad, and a half foot deep, being formed of straight pieces of cane bent up at one end to serve for the foot or stay. Between the canes and the infant is a kind of mattress of the stuffed herb called *Spanish Beard*, and under its head is a little skin cushion, stuffed with the same herb. The infant is laid on its back in the cradle, and fastened to it by the shoulders, the arms, the legs, the thighs, and the hips; and over the forehead are laid two bands of deerskin, which keep its head to the cushion, and render that part flat.”

Garcillasso De La Vega² states that the Spaniards, during the invasion by Ferdinand De Soto, met with some Indians whose heads were moulded in the manner just described. “Their heads are incredibly long and pointed upwards, owing to a custom of artificially compressing them from the period of the child’s birth until it attains the age of nine or ten years.” Dr. Morton³ remarks on these observations by Garcillasso, that the people thus described are said to inhabit the province of Tula; and it is curious to observe that this name was also that of the Toltecan capital of Anahuac, and signified a *place of reeds*. The same name is found in Texas and Guatemala, indicating the migrations of the Toltecan nation.

It is therefore a reasonable presumption that the Natchez were a colony of the old Toltecan stock. Mr. Nuttall thinks that the place called Quigalta in De Soto’s narrative, where he expired, was within the Natchez territory.

Several other tribes of southern Indians practised the art of changing the form of the skull. In this respect, as well as in their traditional wanderings from the west, and in certain religious ceremonies, they appear to have been related to the Natchez.

Among the southern Indians, as well as in Peru and the West Indies, two distinct methods of flattening the cranium were employed; the one apparently identical with that of the ancient Peruvians, the Caribs, and the Chinooks of the present day; and the other, similar to that practised by the Toltecs, the Natchez, and the stone-grave race and mound builders of Tennessee.

Bryan Edwards,⁴ in his “History of the West Indies,” quotes Oviedo, to the effect that the warlike nation of cannibals (Caribbees, or Charaibes) alter the

¹ History of Louisiana, vol. ii, p. 162.

² *Crania Americana*.

16 May, 1878.

³ Hist. de la Florida, lib. iv, cap. 13.

⁴ Vol. i, p. 45.

natural configuration of the head by binding the tender and flexible skull of the child, immediately after birth, between two small pieces of wood, which, applied before and behind, and firmly bound together on each side, elevated the forehead, and occasioned the back part of the skull to resemble two sides of a square. The great difference in language and characters between these savage cannibals and the more civilized inhabitants of Cuba, Hispaniola, Jamaica, and Porto Rico, gave birth, at an early day, to the opinion that their origin also was different. Rochefort is evidently in error when he refers the origin of the Caribs to Florida. It is true (as can be shown by the accounts of the early explorers) that these savages occupied the shores of Florida, but they extended also along the shores of the Gulf of Mexico, around the peninsula of Yucatan, down along the shores of Central America and the Isthmus of Panama, all around the borders of the Caribbean Sea, throughout the whole province of Surinam, and even to Brazil. It would appear that even as late as 1719, a fragment of this powerful race of savages inhabited the coast of Louisiana, for Du Pratz¹ states that along the coast on the west of the mouth of the Mississippi, "inhabit the nation called *Atacapos*, that is, man-eaters, being so called by the other nations on account of their detestable custom of eating their enemies."

It would appear from the numbers and power of this maritime nation, as well as the perfection to which they had brought their arts of war and navigation at the time of their discovery by Columbus in 1492, that they had existed for ages, and were probably equal in antiquity to the aboriginal inhabitants of Mexico, Central America, and Peru.

The ancient natives of Hispaniola, Cuba, Jamaica, and Porto Rico, spoke the same language, possessed the same institutions, practised the same religious rites, arose from one common origin, and emigrated anciently from the Mexican empire. In common with the Caribs, they altered the natural configuration of the head in infancy, but after a different mode. The *sinciput*, from the eyebrows to the coronal suture, was depressed, which gave an unnatural thickness and elevation to the occiput. "By this practice," says Herrera, "the crown was so strengthened that a Spanish broad-sword, instead of cleaving the skull at a stroke, would frequently break short upon it."

According to James Adair,² "the Choctaws (*Choktah*) flatten their foreheads with a bag of sand, which, with great care, they keep fastened to the skull of the infant, while it is in its tender and imperfect state." The testimony of Bartram³ is to the same effect. John Lawson,⁴ in 1700, described the powerful tribe of Waxhaws, as resorting to the compression of the cranium by artificial means. And in like manner, the Osage⁵ Indians, who have been described as the tallest race of men in North America, either red or white, alter the shape of the head during infancy by gentle compression.

¹ History of Louisiana, vol. ii, p. 152.

² History of the American Indians, p. 284.

³ Travels through North and South Carolina, East and West Florida, etc., by William Bartram. Phila. 1791, p. 519.

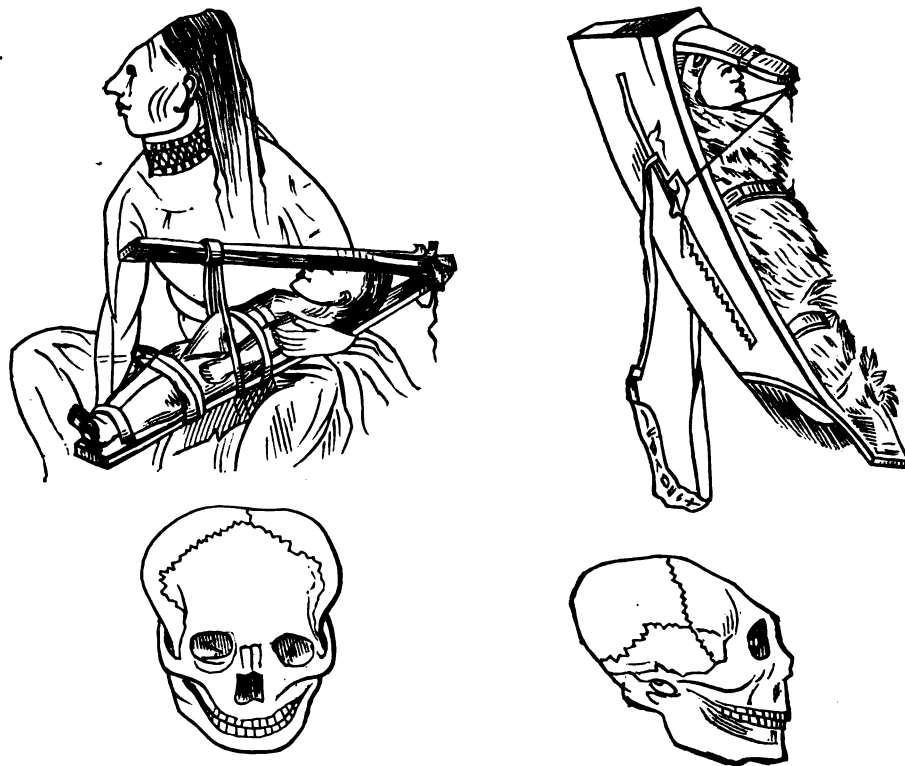
⁴ A New Voyage to Carolina, etc., p. 33.

⁵ Catlin's North American Indians, vol. ii, pp. 40-41.

The Flat-heads, a numerous people inhabiting the shores of Columbia River, and a vast extent of country lying to the south of it, resort to various mechanical contrivances to effect the flattening of the head; and the model of deformity is the same throughout the different bands, consisting in a depression of the forehead and consequent elongation of the whole head, until the top of the cranium becomes, in extreme cases, a nearly horizontal plane.

According to Mr. Townsend,¹ "the mode by which the flattening is effected varies considerably with the different tribes. The Wallamat Indians place the infant, soon after birth, upon a board, to the edges of which are attached little loops of hempen cord or leather. Other similar cords are passed across the back in a zigzag manner, through these loops, inclosing the child, and binding it firmly down. To the upper edge of this board, in which is a depression to receive the back part of the head, another smaller one is attached by hinges of leather, and made to lie obliquely upon the forehead. The force of pressure is regulated by small strings attached to its edge, which are passed through holes in the board upon which the infant is lying, and secured there.

Fig. 64.



Chinooks (Flat-heads), after Catlin.

"The method practised by the Chinooks and others nearer the sea differs widely from that of the upper Indians, and appears somewhat less barbarous and cruel. A sort of cradle is formed by excavating a pine log to the depth of eight or ten inches. The child is placed in it on a bed of little grass mats, and bound down

¹ Tour to the Columbia River, p. 175.

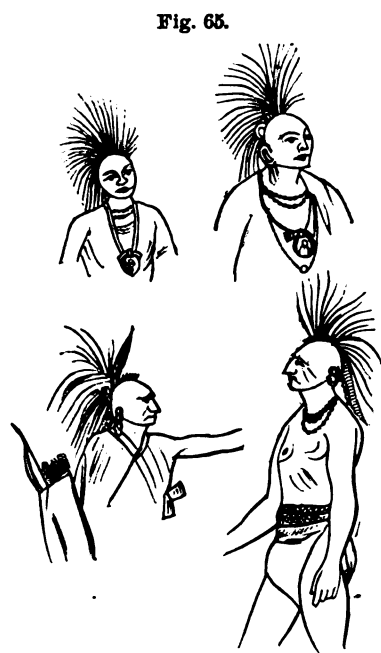
in the manner above described. A little boss of tightly plaited and woven grass is then applied to the forehead and secured by a cord to the loops at the side. The infant is suffered to remain thus from four to eight months, or until the sutures of the skull have in some measure united and the bone become solid and firm. It is seldom or never taken from the cradle, except in case of severe illness, until the flattening process is completed."

The effect of this process is to depress the head, to widen the face, to diminish the facial angle, and to augment the breadth between the parietal bones. A striking irregularity of the two sides of the cranium almost invariably follows; yet the absolute internal capacity of the skull is not diminished, and the intellectual faculties are not impaired to any known or perceptible degree. The testimony of all travellers is, that their intellect is equal if not superior to that of the other Indian tribes of North America.

Dr. Scouler states that the people by whom it is practised are peculiarly subject to apoplexy.

The method of practising this compression of the head, as well as its effects, are illustrated by Fig. 64.

In the preceding figure will be seen a Chinook woman with her child in her arms, her own head flattened, and the infant undergoing the process of flattening.



Osage chiefs and braves (after Catlin), illustrating the effects of a compression of the occiput.

The peculiarity of the heads of the Osage Indians is produced by artificial means during infancy. Their children, like those of all other tribes, are fastened upon a board and slung upon the mother's neck. The infants are lashed with their backs upon the boards apparently in a very uncomfortable position; and among the Osages the head of the child is bound down so tightly to the board as to force in the occipital bone and create an unnatural deficiency on the back part of the head, and, consequently, more than a natural elevation. The Osages practise this custom, because it presses out the head into a bold and manly appearance in front. The Osages, unlike the Flat-head Indians beyond the Rocky Mountains, merely press in the occiput, and that to a moderate degree only, occasioning but a slight, and, in many cases, an almost immaterial departure from the symmetry of nature.

In Fig. 65 we have outlines of the heads of Osage Indians, after Catlin, illustrating the appearance of the countenance induced by artificial pressure similar to that which was employed by the Natchez Indians.

Dr. Scouler has observed that the idioms of the Nootka Columbians, though they are a distinct branch, indicated traces of remote connection with the dialects of the northern tribes; and it is believed by some ethnologists that both these groups of languages originated from one common stock. Dr. Pritchard, in his

“Natural History of Man,” remarks upon the Flat-heads, that, what is more interesting, are the signs of remote affinity which both display to the Aztec, a fact which recalls the tradition that the Nahuatlacas originated from a region to the north. Anderson observed, long ago, that the language of Nootka bears a strong resemblance to the Mexican, in the termination of words, and in the frequent recurrence of the same consonants. The same phenomena have fallen under the notice of Humboldt, who remarks that, on a careful comparison of the vocabularies collected at Nootka Sound and at Monterey, he was astonished at the resemblance of the sound and terminations of words to those of the Mexican; as, for example, in the language of Nootka, apquixitl is to embrace; temextixitl, to kiss; hitltzitl, to sigh; tzitzimitl, earth; Imcoatzimetl, the name of a month.

We have now presented various facts bearing on the singular custom of flattening the head, and, although some of the nations practising it occupied North America, and some of them South America, and were separated thousands of miles from each other, at the same time, there appears to be no reasonable probability that any two widely separated savage tribes would have hit upon precisely the same singular mode of altering the configuration of the cranium. Therefore we are justified in the conclusion that, at some former period, they were parts of the same family.

The weight of testimony would seem to show that this custom was practised at a remote period in the history of North America by the Toltecs, and was, most probably, widely disseminated at the time of their dispersion into various parts of the Continent.

The once powerful but now extinct nation of the Natchez, in their hereditary distinctions, their fixed institutions, in the practice of human sacrifices on the death of eminent persons, in the worship of the sun, and in the peculiar form and characteristics of the cranium, bore obvious analogies with the Toltecs.

If the tradition of the Natchez, corroborated, as it is, by the testimony of the followers of De Soto, by the statements of the early explorers on the Mississippi between 1682 and 1695, and by Du Pratz, who enjoyed the confidence and esteem of their great men and suns, be true, this nation once reigned over all that territory in which the mounds are now discovered, and they and their associated nations should be considered as the mound builders.

At the time of their greatest power, the Natchez are said to have had from 500 to 800 suns or sachems of the nation. Du Pratz, who resided amongst the Natchez, and enjoyed every means of gaining full and accurate information, says that, “according to their traditions, they were the most powerful nation of all North America, and were looked upon by the other nations as their superiors, and on that account were respected by them. *To give an idea of their power, I shall only mention, that formerly they extended from the river Manchac, or Iberville, which is about 50 leagues from the sea, to the river Wabash, which is distant from the sea about 460 leagues; and that they had about 800 suns or princes.* From these facts we may judge how populous this nation formerly has been; but the pride of their great suns, or sovereigns, and likewise of their inferior suns, joined to the prejudices of the people, has made greater havoc among them, and contributed

more to their destruction, than long and bloody wars would have done. As their rulers were despotic, they had, for a long time past, established the following inhuman and impolitic custom, that, when any of them died, a great number of their subjects were likewise killed; and the people, on the other hand, had imbibed the belief, that all those who followed their princes into the other world to serve them there, would be eternally happy. It is easy to conceive how ruinous such an inhuman custom would be among a nation who had so many princes as the Natchez." ¹

The traditions of the Natchez bear marks of probability which have been confirmed by discoveries made near the Gulf of California and on the rivers Gila and Yaquasila.

Du Pratz, who gathered his information from the keeper of the temple and from the Great Sun, states that the Natchez held the tradition that they came from a pleasant country and mild climate, "under the sun," and in the southwest (Mexico?), where the nation had lived for many ages, and had spread over an extensive country of mountains, hills, and plains, in the latter of which the cities were built of stone, and the houses were several stories in height. "We lived," said the keeper, "in a fine country where the earth is always pleasant; there our suns had their abode, and our nation maintained itself for a long time against the ancients of the country, who conquered some of our villages in the plains, but never could force us from the mountains. Our nation extended itself along the great water, where this large river (Mississippi?) loses itself; but as our enemies had become very numerous and very wicked, our suns sent some of their subjects, who lived near this river, to examine whether we could retire into the country through which it flowed. The country on the east side of the river being found extremely pleasant, the Great Sun, upon the return of those who had examined it, ordered all his subjects who lived in the plains, and who still defended themselves against the ancients of the country, to remove into this land, here to build a temple, and to preserve the eternal fire. A great part of our nation, accordingly, settled here, where they lived in peace, and abundance for several generations. The Great Sun, and those who had remained with him, never thought of joining us, being tempted to continue where they were, by the pleasantness of the country, which was very warm, and by the weakness of their enemies, who had fallen into civil dissension. . . . During these discords among our enemies, some of them even entered into an alliance with the Great Sun, who still remained in our old country, that he might conveniently assist our other brethren, who had settled on the banks of the great water, to the east of the large river, and extended themselves so far on the coast, and among the isles, that the Great Sun did not hear of them sometimes for five or six years together.

"It was not till after many generations that the Great Suns came and joined us in this country, when, from the fine climate and the peace we had enjoyed, we had multiplied like the leaves of the trees. Warriors of fire, who made the earth to tremble, had arrived in our old country, and, entering into alliance with our breth-

¹History of Louisiana, vol. ii, p. 146.

ren, conquered our ancient enemies, but, attempting afterwards to make slaves of our sons, they, rather than submit to them, left our brethren who refused to follow them and came hither, attended only by their slaves." Upon my asking him who these warriors of fire were, he replied that they were bearded white men, somewhat of a brownish color, who carried arms that darted out fire, with a great noise, and killed at a great distance; that they had likewise heavy arms, which killed a great many men at once, and, like thunder, made the earth to tremble, and that they came from the sun-rising in floating villages. "The ancients of the country," he said, "were very numerous, and inhabited from the western coast of the great water to the northern country, on this side of the sun, and very far upon the same coast beyond the sun. They had a great number of large and small villages, which were all built of stone, and in which there were houses large enough to lodge a whole tribe. Their temples were built with great labor and art, and they made beautiful works of all kinds of materials."¹

It would appear, therefore, that in former times the Natchez had multiplied to such a degree as to spread from the Mississippi River, along its branches and head-waters, and finally to reach the Atlantic coast.

It is a reasonable presumption that the Natchez was a colony of the old Toltec stock. It is well known that, like the Natchez, the Toltecs were governed by despotic rulers, the representatives of the sun, and that they built numerous mounds, and fortified their towns by earthworks. In common with the Mexicans and Peruvians, the Natchez held the tradition that they had received their peculiar religion and laws from a man and his wife who had come down from the sun;² and they also, in like manner with the Toltecs, preserved accounts of pestilence³ which had raged during several years, and had destroyed great numbers of people.

If the tradition of the Natchez be true, it is most reasonable to refer the mounds, earthworks, and idols of Tennessee to this nation.

¹ History of Louisiana, vol. ii, pp. 109-113.

² Du Pratz, History of Louisiana, vol. ii, p. 175.

³ Du Pratz, History of Louisiana, vol. ii, p. 180.

CHAPTER VII.

RELICS FROM THE MOUNDS AND STONE GRAVES.

It has been well said, that the fabrics of a people unlock their social history ; they speak a language which is silent, but yet more eloquent than the written page. As memorials of former times, they commune directly with the beholder, opening the unwritten history of the period they represent, and clothing it with perpetual freshness ; however rude the age, or uncultivated the people from whose hands they came, the products of human ingenuity are ever invested with a peculiar and even solemn interest.

Stone and Clay Images.

That the aborigines of Tennessee were idolaters is manifest from the stone and clay idols which have been found in various portions of the State ; some of which were discovered in caves, and others upon the summits of high mounds.

These idols are of various sizes, from the large stone images, two feet in height, to the small clay figures, not more than two inches in length.

They were carved from various materials, such as limestone, sandstone, fluor-spar, and steatite.

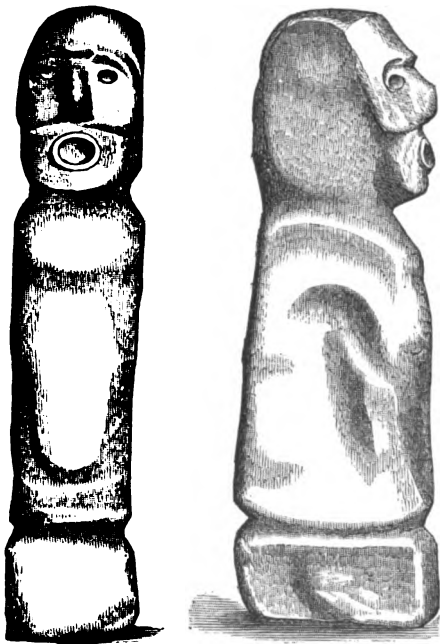
That, in some instances at least, they were fashioned on the spot where they are now found, is manifest from the position in which the stone image shown in figure 66 was discovered.

This remarkable idol was discovered in a cave, on the banks of the Holston River, near Strawberry Plains, in Knox County, Tennessee. The cave appeared to have been used by the Indians for purposes of worship. The image is composed of yellow crystalline limestone, similar in all respects to the stalagmites, stalactites, and incrustations of the walls of the cave. In fact, it appears to have been fashioned from a large stalactite, and the point at which the back of the head was attached to the walls of the cave is represented in the profile view.

It will be conceded that this image bears, in its features, a general resemblance to the characteristic physiognomy of the North American Indians of the present day. This resemblance

is seen in the narrow retreating forehead, heavy superciliary ridge, prominent angular nose, full cheeks, and broad, square chin. As far as we can gather from

Fig. 66.



Front and side view of a Stone Idol from Knox County, Tennessee. Height 20 inches.

the rude outlines of the body of this image, it appears to have been the design of the artist to carve the legs and feet in a bent, or kneeling position.

Two remarkable stone idols, discovered in the Valley of the Cumberland River, in the neighborhood of large pyramidal mounds and numerous stone graves, are represented in Figs. 67 and 68.

In Fig. 67 the full face is given, and in Fig. 68 the side, or profile view. Both these idols are composed of a dark hard sandstone. It will be seen that, in the general cast of countenance and mode of dressing the hair, they differ considerably from the preceding image (Fig. 66), and wholly from the general form of the cranium and head-dress of the North American Indians of the present day.

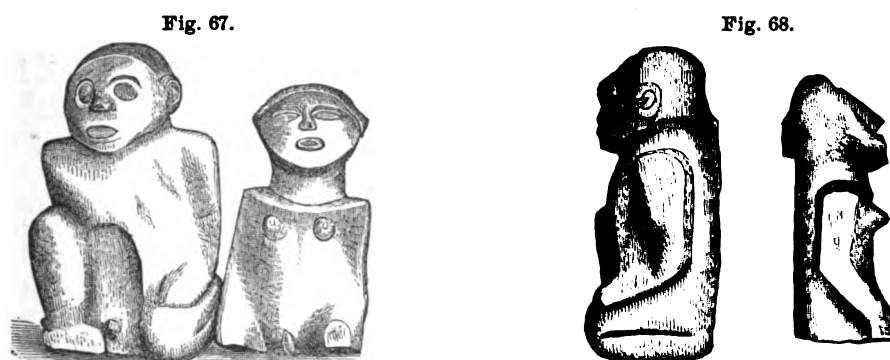


Fig. 67. Stone Idols, male and female, from Cumberland Valley; front view.
Fig. 68. Stone Idols, from Cumberland Valley, Tennessee; side view.

The larger idol, 13.3 inches in height, represents a muscular man. The thorax is more prominent than the abdomen, which is carved out, so as to form a depression. The figure is half sitting and half kneeling, resting on the left knee and on the right foot. The right hand and forearm rest upon the right thigh and knee.

The face is characterized by a prominent, but broad nose; large, oval eyes; full lips; wide mouth; strong, well-marked chin and lower jaw; angular face; and broad, retreating forehead. The hair is represented as rising up from the forehead in a distinct, elevated roll, and drawn back, and gathered into a cue behind, after the manner of the Chinese. The plow-share struck off a portion of the cue, as will be seen in the profile, Fig. 68. The head-dress of this idol might also be compared to some of the wigs with cues formerly worn in civilized countries.

The simplicity of the design, as a whole, not only indicates the great antiquity of this sculpture, but also justifies the belief that its authors had made considerable advances in arts.

The female idol, 11.6 inches high, represented in the same figures (67 and 68), is from a hard, dark-brown sandstone, similar to that from which the male idol was formed, but harder and more compact, and its grain is susceptible of a higher polish.

In the male idol, as we have observed, the shoulders are broader than the hips; while, in the female idol, the hips are broader than the shoulders. The nose is perfectly straight in the female idol, and is more delicate in its form. The eye-brows are more prominent, deeper set, smaller, and more ovate or almond-shaped.

The mouth is smaller than in the male; the lips are more prominent, and the tongue is pressed out between the lips. The hair, or head-dress, rises up more distinctly and forms an angle on the temples, and is drawn up behind into a knot, after the manner practised by some of the Asiatic nations. The mammæ are small, round, well formed, and the little nipples distinct. The female organs of generation are carved in relief.

The kneeling posture indicates the act of worship; the face of the female idol is turned upwards, while that of the male looks forwards.

The form of these idols still further sustains the conclusion that the stone-grave race of Tennessee was distinct from the nomadic and hunting tribes of North America, and that this extinct race, in former times, may have come in contact with the nations of the east.

Figs. 69 and 70 represent the head of an image discovered in 1845, in Henry County, Tennessee. This striking and beautiful image is carved out of white compact fluor spar, a mineral unknown in this portion of the Mississippi Valley.

Fig. 69.



Fig. 70.



Fig. 69. Front view of a stone image, from Henry County, Tennessee. One-fourth natural size.
Fig. 70. Profile of the image.

My attention was called to the existence of this object by the following extract from a communication which appeared in the "Franklin Weekly Review" of October 18, 1868, written by Mr. S. H. McWhirter:—

"In the spring of 1845, I was at Paris, the county seat of Henry County, Tennessee, and there saw and purchased a sculptured image, found a few days before at or near one of the largest mounds in this State upon the lands of Amos Milcken and Solomon Hartsfield.

"Mr. Hartsfield was cleaning out what he thought to be a sink, and struck his hoe against and dug up the image.

"There is a wall in the shape of a horse-shoe, a mile or two in circuit, in some places of sufficient height to be a barrier to stock, inclosing two square mounds and eight rectangular ones. The main square mound is about 100 feet high, the other, 60 or 70 feet in height; both have large trees growing over them. There are also three mounds, eight or ten feet high, and fifteen or twenty feet across,

filled with fragments of human bones; the others seemed to be composed of compact clay and sand two and a half feet high.

“The large square mound is flat on the top, and, if the trees at the base were cut away, it would command a view for miles around. It has been constructed so as to face the cardinal points exactly.

“The head and part of the body in this image are still preserved; and I should have had it entire, but for the accident of having my house burned in 1857. I had a great many curiosities burned with my cabinet, and now take little interest in such things.

“There is an old town site, at or a little above the mouth of the Hiawassa River, made perhaps by the same people. The spring freshet of 1867 washed the surface from the island, and long rows of graves, clay pots, teeth, and other relics are found in abundance. I found a tibia and fibula three and a half inches longer than in the average leg of the white race, and two singular molar teeth, with four fangs and six apices.

“The Idol, when entire, was in a sitting posture—the left knee and fore-leg resting on the ground, the left arm against the body, and the hand resting on the knee. The body stooped forward slightly; the right knee was elevated to the shoulder; the arm rested against the body, with the hand on the knee.”

In the spring of 1845, Mr. Hartsfield ploughed up an image of stone, about eight miles north of Paris, Tennessee, in a piece of table-land which had been cultivated for seven years. There is a wall around this table-land, perhaps a mile or more in circumference, made of pipe clay. Within the inclosure, there are seven mounds, a deep reservoir in the centre, and two aqueducts, twenty or thirty feet wide, leading from the Obion River to the reservoir.

The mounds, wall, reservoir, and other objects indicate this to have been the site of a camp; Messrs. R. E. Dunlap, John W. Dunlap, John H. Gee, and Dr. G. Troost, State Geologist of Tennessee, have all given their certificates of the truth of the foregoing statements.

The general expression of this idol is similar to that of the large male idol, previously described, and represented in Figs. 67 and 68. The outline, however, is more spirited, the forehead is more elevated, the brow more distinct, the nose better formed, and the mouth is more expressive. The eyes, however, are not as carefully carved, as in the male idol. The mode of arranging the head-dress was similar in both, with this difference, that the Henry County idol has several notches upon the summit of the head-dress.

The Henry County image will compare favorably, in the perfection of its outline, with many of the sculptures of the Egyptians and Grecians; and it is but reasonable to suppose that its author was capable, under favorable circumstances, of attaining a high degree of perfection in his art.

The small male image (Fig. 71, A), seven inches and a half in length, carved from coarse reddish-brown sandstone, was exhumed from a mound surrounded with stone graves, in Perry County, four miles south of the Tennessee River near Clifton.

The male organ of generation, which was large and prominent in the sandstone idol A, was broken off accidentally.

Fig. 71.

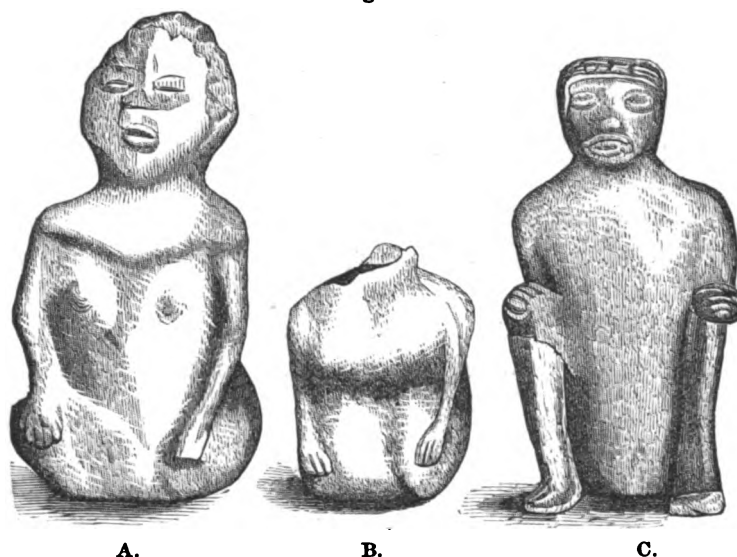


Fig. 71. A. A small idol from a mound in Perry County, near Clifton, Tennessee.
 B. A small hollow clay idol, from a stone grave at Boiling Springs, Williamson County, Tennessee.
 C. A black clay idol from the Pyramid of Cholula, near Mexico.

Figure B represents the body of a black female idol, obtained from a stone grave at Boiling Springs, Williamson County, Tennessee, by the late Dr. Freeman. In the same figure, a small Mexican idol C, from Cholula, seven inches in height, and composed of burnt clay painted black, is represented. I have in my possession six small terra-cotta heads from the temple of Cholula, Mexico, which exhibit the prominent nose and expressive mouth so characteristic of the Henry County fluor-spar head previously described. In four of these small figures the top of the head is smooth and without ornament; in two the head-dress is similar, but more elaborate than that of the Henry County idol, or the small stone idol A, in Fig. 71. These Mexican heads resemble closely several of those figured by Brantz Mayer,¹ found in the neighborhood of the pyramids of St. Juan Teotihuacan.

It is admitted by Humboldt and other writers, who have investigated the antiquities of Mexico, that the Temple of Cholula and the pyramids of Teotihuacan were not built by the Aztecs, but were in existence when the Mexicans, one of the seven tribes of the Anahuatlacs (inhabitants of the banks of rivers), took possession, in the year 1190, of the equinoctial region of New Spain.

The Aztecs attributed the great pyramidal monuments of Teotihuacan, Cholula, Cholollan, and Papantla to the Toltecs, a powerful and civilized nation of people who inhabited Mexico five hundred years earlier.

¹ Mexico as it Was, and as it Is, p. 226.

Fig. 72 represents a small idol from the Cumberland valley, composed of black clay and crushed shells, which has something resembling a cap on the head.

Some of the stone idols discovered in Tennessee lay upon the summit of the large pyramidal mounds, and appear to have been connected with the religious rites performed upon these elevations.

Haywood makes some interesting observations with reference to the position in which certain of these images were discovered in Sumner and Roanoke Counties.¹

Many years ago, a clay vessel was found at Nashville, about twenty feet below the surface, in digging a well in a narrow valley, between hills liable to wash. The workmen came upon a natural spring issuing from a rock, and in the spring this pottery vessel was discovered. Its capacity was nearly one gallon. The base was circular, from which rose a globular vessel terminating at the top in the head of a woman. There was no aperture except a round hole near the summit of the globular part of the vessel. The features of the face were described by Haywood, as being "Asiatic." The crown of the head was covered with a cap or ornament in the shape of a truncated cone. The ears were very large, extending down to a level with the chin. There were some marks of paint having formerly existed on the head, though it is too much worn off to admit of any definite description.

An image was found near the base of a mound, at Mayfield's Station, twelve miles southwardly from Nashville; also another, at the base of a mound near Clarkesville; and still another, near the residence of Mr. Craighead. The image found at Mayfield's Station, in Davidson County, was of sculptured stone, representing a woman sitting upon her "hams," with both hands under her chin, and her elbows upon her knees. It was neatly formed, and well proportioned and polished. This image was kept for a long time by Mr. Boyd, at his tavern in Nashville.

Dr. Brown had two stone images which were exhumed during the ploughing of the ground, near a very large mound below Charlottesville. One represented an old man, with his body bent forward and his head inclined downwards, exceedingly well executed. The other represented an old woman.

Another idol was found near Nashville. It was composed of a clay remarkable for its fineness, and which is quite abundant in some parts of Kentucky. A small portion of gypsum was mixed with this clay. It represented a woman in a state of nudity, whose arms had been cut off close to the body, and whose nose and chin had been mutilated. It had a fillet and prominence on the head, and was said to have resembled an idol found in the southern part of the Russian Empire.

On Cherry Creek, in White County, in a southwest direction from Sparta, are the

Fig. 72.



Image from a stone grave in the valley of Cumberland River, Tennessee; one-half natural size.

¹ Nat. and Ab. Hist. Tenn., pp. 120-149.

remains of a large aboriginal town, in the field of Mr. Howard. Several mounds are there, from twelve to fourteen feet high. They were higher, or perhaps twenty feet above the ground, before the land was cultivated. Haywood states that these mounds were hollow within. A horse in ploughing fell into one of them, and some of them have sunk into a basin since the clearing of the ground. In this field was found the portion of an image from the waist upwards. The head was well carved, with the mouth, nose, eyes, and features symmetrical. The image was highly polished; and the substance of which it was made was described as being white and glittering. In the same locality were found plates and pots, with ornamented edges, carved out of the same substance. Half a mile from this place, at the foot of the mountain, is a large cave containing human bones, some of which are small and others very large. Mr. Howard, who was six feet high, affirmed that he could put the jaw of some of them around his face.

In White County, in West Tennessee, was dug up, many years ago, in an open temple situated on the Caney Fork of Cumberland River, a flagon formed in the shape of three distinct and hollow heads, joined to the central neck of the vessel by short thick tubes, leading from each respective occiput. It was made of a light yellow and compact clay, intimately mixed with small fragments and dust of carbonate of lime. This vessel held a quart. It was well executed, and the heads were natural, displaying a striking resemblance to the Asiatic countenance. A small oval prominence towards the top of each head, probably represented knots of hair. Each face was painted in a different manner; one is slightly covered over with red ochre, having deep blotches of the same paint on the central part of each cheek; the second face had a broad streak of brown ochre across the forehead and another running parallel with the same, enveloping the eyes, and extending as far as the ears; the third face had a streak of yellow ochre, which surrounded the eyes and extended across the eyebrows, another running from the centre of this at right angles down the nose to the upper lip, while another broad streak passed from each ear along the lower jaw and chin.¹

Haywood² has made some observations on the *Lingam*, an image spread over the most of India, in his discussion of the aboriginal history of Tennessee.

There was found on the farm of Turner Lane, Esq., in White County, West Tennessee, five or six miles from Sparta, a piece of stone eleven inches long and about twelve inches in diameter. At one end it was sloped off to a sharp edge, which terminated at the apex in a sharp point. It was highly polished, and showed great skill in the workmanship. It was variegated with green and yellow spots, the general body of the stone being of a deep gray color. No doubt can be entertained in the mind of a careful observer, that it is not the product of this country.

Another stone of similar shape, of very high polish, and of variegated colors, was since found ten or twelve miles from Sparta, near a mound. It is now before the writer. It is about eighteen inches in length, and one and a half in diameter,

¹ Natural and Aboriginal History of Tennessee, p. 115.

² Id. pp. 154-155, p. 322.

rather broader than thick, though circular. The ends are abruptly conoidal. It is very smooth and heavy, and neatly polished. On part of one side, it seems to have received from paint a reddish hue, and the other parts of it seem to have been variegated with some coloring now dark, but probably brown formerly. It may have been used as a pestle, but it greatly resembles a phallus.

A phallus or priapus was found in or near Chillicothe, not long since, and was presented to Mr. McCullough, who deposited it in the museum of the Philosophical Society.

Dr. Gerard Troost, in his "Account of Some Ancient Remains in Tennessee," has described an idol which was inclosed in a large shell (*Cassis flammea*, Linn), the interior whorls and columella of which had been removed, so that nothing but the external shell remained, which was opened in front sufficiently to permit the intrusion of the image.

This shell belongs to the tropics. The utensils which Dr. Troost found were all made of different kinds of stone, most of which may be found amongst the primitive rocks in North Carolina or Missouri, and some even in Tennessee; one, however, an *obsidian*, must have been brought from Mexico or South America. This volcanic substance is found in several parts of the Andes, particularly in Quito, Popayan, at the volcanoes of Puracé and Sotora, in the mountains of Les Nakajas, and in Mexico. These facts seem to place it beyond doubt that the Aborigines of Tennessee came from southern regions.

The observations of Dr. Troost confirmed those of Haywood, that they were idolaters and probably worshipped the phallus, in common with the ancient Egyptians, Phenicians, and Greeks.

All the images obtained by Dr. Troost during his extended geological explorations were similar to the stone images which I have described, Figs. 67, 68, 69, 70, 71 (A). They all represented naked figures in the kneeling position, and sitting on their heels. Some of them had their hands about their abdomen, others had them on their knees. Two of these sandstone images found in Smith County, representing a male and a female, were sixteen inches in height. The male seemed to be a rude imitation of an ancient priapus, with a large *membrum generationis virile in erectione*.

This is not the only instance that this *pars genitalis* has been found in Tennessee. Dr. Ramsay, who has a fine collection of these antiquities, has two *simulacra* of this member. the one is carved out of stone similar to that of Dr. Troost's images, and is of rude construction; but he has one which is made of a kind of amphibolic rock, about twelve inches in length, and perfectly resembling the natural object. The phallus made of sandstone is about sixteen inches in length. The one formed of amphibolic rock must have taken a long time in the making, the rock being very hard and tough, and even steel makes no impression on it. It must have been ground down with a substance of the hardness of emery; nevertheless, it is perfectly smooth, having the fat or greasy lustre characteristic of these rocks. It is not probable that the aborigines would have spent so long a time on an object, merely to satisfy some voluptuous propensities or whims; they must have served some more serious purposes, and it is very probable that they held them in

the same veneration as did the Greeks, who consecrated the organ of generation in their mysteries. The phallus and steis were exposed in the sanctuaries of Eleusis. The Egyptians consecrated the phallus, in the mysteries of Osiris and Isis, and Father Kircher mentions, on the authority of Cortes, that this worship was established in America.¹

The general features of these images, as represented in the drawings of Dr. Troost, resemble those of the idols previously figured in this work, and, moreover, the hair is represented in a similar manner, as rising up in a roll upon the head from the forehead.

Some of the Tennessee idols resemble, in their general physiognomy, the carvings on the pyramids and stone structures of Central America, figured by Mr. John L. Stephens;² but they are apparently the work of a more ancient and primitive people, being almost always nude, and without the garments, the profuse ornaments, and the rich head-dress of the Central American figures.

In their bold outlines and rude simplicity, they resemble more nearly the idols and statues discovered and figured by Mr. E. G. Squier.³

The idols discovered at Memotombita and Zapatero by Mr. Squier resemble, in a marked manner, the stone idols of Tennessee; and the resemblance is so striking as to warrant the belief, that the people who fashioned these images in distant portions of the continent must have had a common origin.

It is a question whether the greater simplicity of the Tennessee images should not lead the archæologist to assign to them a higher antiquity than the more elaborately carved statues and temples of Central America.

Shell, Pearl, and Copper Ornaments.

The shell ornament discovered on the breast of the skeleton in the burial and sacrificial mound on the banks of the Cumberland River, opposite Nashville, and which was carved from a large flat sea-shell, resembling the *Pecten Mortoni*, appears to have been sacred, ornamental, and symbolic.

Similar ornamental patterns have been found in various portions of Middle and West Tennessee, in the aboriginal mounds and stone graves.

The construction of the ornaments from large flat sea-shells (*Pecten Mortoni*, *Pecten eboreus*, *Pecten comparitis*, and *Pecten perdeensis*); the reproduction of the same figures; the position in which they were worn, namely, upon the breast; their comparative rarity, not more than two having been found in any one burial mound; and their final deposit in carefully constructed graves near the centre of the burial and sacrificial mounds, apparently with distinguished personages, sustain the view which we have advanced, that these ornaments were of a sacred and symbolic character.

¹ Transactions of the American Ethnological Society, vol. i, pp. 360-364.

² Incidents of Travel in Central America and Yucatan, 1841, vol. ii; Incidents of Travel in Yucatan, 1848, vol. ii.

³ Nicaragua, its People, Scenery, etc., vol. i, pp. 301-313; vol. ii, pp. 52-66.

The singular division of the circle into three portions has a slight, and perhaps fanciful resemblance to the representations of the 'Tae-heih of the Chinese.

Chinese philosophers speak of the origin of all things, under the name of 'Tae-heih. This is represented in their books, by a figure, which is formed thus ;¹ On the semi-diameter of a given circle, describe a semi-circle, and on the remaining semi-diameter, but on the other side, describe another semi-circle.

In figure 73, we have a comparative view of the representation of the Chinese Tae-heih (A), and the symbolic divisions of the circle by the ancient stone-grave and mound-building race of Tennessee.

We have already described at length the copper crosses evidently worn as pendants from the ears, and also the ear ornaments, composed of hard wood and covered with thin plates of copper discovered in stone graves near Nashville. It is also worthy of note, that fragments of what appears to have been a copper plate or mask, much corroded, were found above the fire vessel or altar, in the mound on the banks of the Cumberland River, opposite Nashville.

The pearl shell and bone beads seem to have been used not only as a medium of exchange, and as ornaments, but also for the record of historical and sacred facts and ideas. For the accomplishment of this latter purpose they were arranged and woven into bands and belts, the historical facts and religious ideas being conveyed by the variations of size, color, and arrangement. Many of the beads which I exhumed still retained marks of pigment. The most common substance used was the red oxide of iron. The greatest number of beads, as well as the most beautiful and valuable varieties, were found in the most carefully constructed graves, which were apparently those of the most distinguished personages.

Some of these beads were formed from pearls, others were entire marine shells of the genus *Marginella*, from the tropical shores, which had been carefully pierced, so as to admit of the passage of a thread or small string ; others were made of the columella of the *Strombus gigas*, *Fasciolaria gigantea*, *Busycon carica*, and of other species of the *Muricidæ* ; whilst others were carefully fashioned of bone.

The flat shells were also carved to represent the human countenance, as in the shell ornament which I removed from the breast of the child, in a stone grave, at the foot of the burial mound, opposite Nashville.

Figures of these ornaments have already been given in the third chapter.

Aboriginal Rock-paintings.

The ancient inhabitants of Tennessee have left paintings upon the rocks, some representing, possibly, the sun and moon ; and others the buffalo and other animals.

The paintings are executed most generally with *red ochre*, upon high, inaccessible

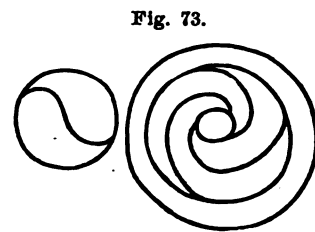


Fig. 73.

A.

B.

A. Chinese figure Tae-heih.
B. Symbolic divisions of the circle by the ancient stone-grave race and mound builders of Tennessee.

¹ The Chinese. A General Description of China and its Inhabitants, by Francis Davis, Esq., vol. ii, p. 147.

walls of rock, overhanging the water, and these were, without doubt, devoted to sacred purposes. They seem to have been emblematic of the sun and moon, which are supposed to have been worshipped by this people, as well as by the Natchez and Mexicans.

The painting representing the sun, on the rocks overhanging the Big Harpeth River, about three miles below the road which crosses this stream and connects Nashville and Charlotte, can be seen for a distance of four miles, and it is probable that the worshippers of the sun assembled before this high place for the performance of their sacred rites.

At Buffalo Gap, on the same stream, where the ancient trail of the buffalo is still distinct, a line of these animals is painted on the cliff of rocks which overhangs the river.

The hollow formed by the projecting rocks at Buffalo Gap, on Big Harpeth, is capable of sheltering at least one thousand men, and it would appear that this was, in ancient times, a favorite resort of the Indian hunters.

In company with Dr. Carter, who acted as my guide, I visited both these localities (the one above and the other below the extensive aboriginal remains of Mound Bottom), and sketched the paintings.

Father James Marquette, in his earliest voyage of discovery on the Mississippi, describes similar paintings on the face of a perpendicular rock between the Missouri and the Illinois.

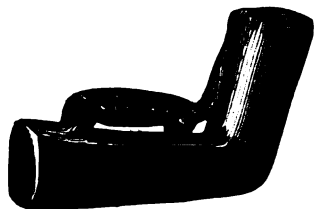
"The painted monsters," says Stoddard, "on the face of a high perpendicular rock apparently inaccessible to man, between the Missouri and Illinois, and known to the moderns by the name of Pisa, still remain in a good degree of preservation."¹

John Haywood² has some observations on the sun and moon painted upon rocks.

Pipes.

The aborigines of Tennessee displayed great taste and skill in the carving of pipes from sandstone and steatite, as we have shown by the specimens figured and described in the preceding chapters. The large parrot-shaped pipe (Fig. 58), carved out of chocolate-colored steatite, is 12 inches in length, and was discovered in the

Fig. 74.



Small stone pipe, from a mound near Hickman, Kentucky. One-fourth natural size.

vicinity of aboriginal remains, near Murfreesboro. The large heavy pipe representing, apparently, an American quail (Fig. 53), and obtained near Old Town, was formed from dense, coarse, light-brown sandstone. I have seen some of these aboriginal pipes fashioned of hard greenstone and highly polished, which were over eighteen inches in length. In Fig. 74 we have the representation of a beautiful highly polished stone pipe, which was carved from a dense, reddish-green and brown steatite. The

¹ Discovery and Exploration of the Mississippi Valley, by John Gilmary Shea, p. 39.

² Natural and Aboriginal History of Tennessee, pp. 113-115.

short-legged animal carved on the bowl and stem resembles, in the long claws, in the scales upon the back, and in its general shape, the South American armadillo. It is not known that any animal of this character ever existed in Tennessee.

At the State capitol in Nashville, there is a small collection of aboriginal remains, amongst which we observed several vases, a number of stone implements, and two large pipes made from a light-brown steatite, and having the general form of the large chloritic pipe from the aboriginal remains, near Murfreesboro.

Weapons.

In the preceding chapters we have given descriptions and drawings of various warlike implements found in the stone graves and mounds; and it is evident that, in the main, they correspond with those in use generally by the Indians of North America, at the time of the discovery by Columbus, and even at the present day, in regions remote from civilization.

We have also called attention to the skill displayed in the manufacture of the double-headed stone hatchet, and the long pike or "*Stone Sword*."

Many of the arrow- and spear-heads were made with great care, and presented an appearance of remarkable delicacy and symmetry. This was especially true with reference to the small sharp arrow points found in some of the stone graves in the burial mound on the banks of the Cumberland, opposite Nashville. The penetrating power of these must have been very great. They seem to have been formed so as to be fastened in the split end of the shaft, and to be readily detached after penetrating the flesh.

The implement represented in Fig. 75 has a very keen cutting edge, and, from its oval shape, was probably used as a scalping knife, and fleshing instrument.

Fig. 75.



Stone implement (*Scalping Knife*), from the valley of the Cumberland River. One-fourth natural size.

The broadest portion of the stone implement, represented in Fig. 76, has a sharp edge, and it is evident from its shape, that it might have been used as a dagger, a scalping knife, or as a spear point. I have a long, sharp piece of silex with the handle turned at an angle, which was evidently used by the aborigines as a dagger.

Fig. 76.



Chipped celt, from a stone grave in Cumberland valley. One-half natural size.

The stone spear-head of jasper, Fig. 77, is remarkable for its finish and symmetry.

The spear-head represented in Fig. 78, appears to have been one of the most common forms of warlike implements, used by the aborigines of Tennessee.

Fig. 77.



Fig. 78.



Fig. 77. Jasper spear-head, from the Cumberland valley. One-fourth natural size.

Fig. 78. Jasper spear-head, from a stone grave, Tennessee. One-fourth natural size.

These illustrations might be multiplied almost indefinitely, for there is not a cultivated field along the streams of Tennessee which does not yield various forms of arrow-heads, spear-heads, and scalping knives, of various sizes and forms. The extraordinary number of these weapons scattered over the face of the country, attests at once the warlike character and the vast numbers of the aboriginal inhabitants.

The implement represented in Fig. 79, fashioned of hard silex, was probably used as a battle-axe, the edges being too thick and blunt, either for thrusting or cutting.

Fig. 79.



Stone implement of silex, from the valley of the Cumberland. One-fourth natural size.

Coins.

During my explorations, I discovered no coins nor medals of any kind in the stone graves and mounds of Tennessee. It is probable that the coins described by John Haywood¹ and Caleb Atwater,² as having been found in various parts of Tennessee and Kentucky, were of European origin, and brought over by the early Catholic missionaries and explorers.

¹ *Aboriginal History of Tennessee*, pp. 173-184.

² *Archæologia Americana*, pp. 114-120.

Implements of Stone employed for Mechanical Purposes.

Tools.—In Fig. 80 is represented a symmetrical plummet-shaped implement of magnetic oxide of iron, highly polished, with a hole through the upper end. Length 3.4 inches.

It is supposed that these implements, a number of which have been found in middle Tennessee, in the cultivated soil, and also in the stone graves, were used in spinning thread, and in weaving. It has also been suggested that they may also have been employed as weights to the lines in fishing.

The testimony of Du Pratz¹ and Adair² establishes the important fact that the Indians inhabiting the Southern States and those bordering on the Mississippi River and its tributaries, as far as the Ohio and beyond, understood the art of weaving beautiful and substantial fabrics, from vegetable fibre, from the hair of the buffalo, from the quills of the porcupine, and from feathers. It is still further evident that, so far from these arts being derived from the Spanish, French, Dutch, and English explorers and colonies, they were possessed and exercised in the greatest perfection, before the arrival of Europeans, and were gradually abandoned, on account of the introduction of cheaper and more abundant supplies of foreign fabrics.

Fig. 80.



Plummet of black magnetic iron.

The conoidal implement with a flat base represented in Fig. 81 is made from black magnetic oxide of iron. Height, 1.2 inches; diameter of the base, two inches.

The surface of this object is smooth and highly polished, and it may have been used in games, as a quoit, or for the purpose of rubbing and grinding the pigments used by the aborigines.

In previous chapters we have figured and described the discoidal stones with plane and biconcave surfaces. Some of these were biconcave, and perforated in the centre with a small, round, carefully drilled hole. Many of the biconcave discoidal stones, especially those of the largest size, have been, with reason, supposed to have served the purpose of mortars for crushing Indian corn, or for grinding paint. In some instances they have been found with a carefully constructed round stone fitting accurately in the concave excavation; and it is probable that this stone was used as a pestle to grind or crush the corn, paint, or dried herbs used as medicines.

Fig. 81.



Cone of hæmatite, from the Cumberland valley.

The discoidal stones, with plane surfaces, were fashioned of various materials, such as pudding stone, silex, jasper, sandstone, chloritic slate, and serpentine.

These stones were used in games by the Indians, as in the game called *Chunké*, by the Chactaws.

¹ Bernard Romans gives an interesting description of this game, as practised by the Chactaws.³

¹ The History of Louisiana, etc., vol. ii, pp. 226-232.

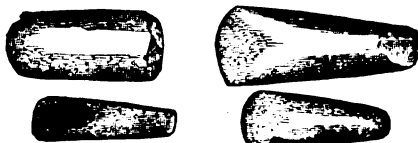
² History of American Indians, p. 424.

³ Concise Natural History of East and West Florida, 1776, p. 79-80.

It is evident, from the great care with which these discoidal stones were fashioned and the perfection of their form, that they were greatly valued by the Indians. They are of comparatively rare occurrence in the stone graves, because their manufacture required great labor and time, and it is probable that only two or three of these stones were found in each village, town, or encampment, and that they were deposited only in the grave of the owner at the time of his death.

In Fig. 82 we have a group of stone implements, which were used by the aborigines of Tennessee for various purposes, such as the excavation of boats, felling trees, cleaning hides, and cultivating the soil.

Fig. 82.

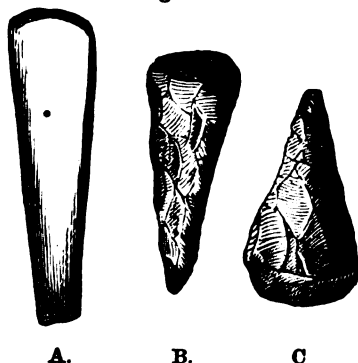


Celts from middle Tennessee, about one-eighth of the natural size.

A stone celt which I obtained from Mound Bottom, on the Big Harpeth River, is massive, weighing four pounds two ounces. It is thirteen inches long, and four inches broad at the cutting edge. This implement, formed from a hard dense greenstone, highly polished, appears to be too heavy and unwieldy to have been used as a *battle-axe*, and was more probably used in excavating boats, in felling trees, or in crushing bones and small twigs.

One of the stone implements of hard greenstone, eighteen inches in length, which we have previously described in connection with the remains at Old Town, is among the most symmetrical and highly polished of the aboriginal relics. In the museum of the Tennessee Historical Society, at Nashville, are two similar implements, apparently modelled upon the same plan, but smaller.

Fig. 83.



Celts from the valley of the Cumberland River, about one-eighth natural size.

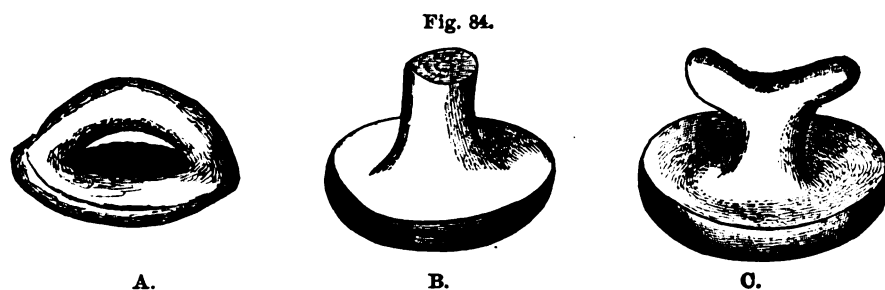
The large celt A, in Fig. 83, is formed of a dense, olive-green, variegated stone, and highly polished. It weighs two pounds ten ounces; and measures eleven and one-half inches in length, three and three-tenths inches in breadth, and is one inch thick.

It would require a strong arm to wield such a weapon when mounted on the end of a long handle as a battle-axe. Such weapons would be too heavy and unwieldy for long marches, requiring great endurance and protracted exertion, in the rapid pursuit, sudden attack, and precipitate retreat, which characterized the military tactics of the North American Indians. If used at all in warfare, such weapons must have been employed solely in the local defence of the walled towns.

The implements represented by B and C are flaked from dark silex; the edges, however, are polished, as if they had been employed for spades in digging the ground. The implement B weighs two pounds; is ten and one-half inches in length, and four and one-half inches in breadth; C is eight and one-half inches in

length, and four and one-half inches in breadth. The most plausible supposition as to the use of these broad, flat, and comparatively blunt implements, is that they were employed as spades, or trowels, or hoes in agriculture, and in the excavation of ditches, and in the formation of embankments and mounds. The edges are too blunt for cutting purposes; and the broad flat edges are highly polished, just as the plough-share and iron hoe receive a high polish from repeated use in the cultivation of soils.

The singular implements represented in Fig. 84 are formed of a mixture of clay and coarsely crushed shells; and have been subjected to the action of fire. The clay thus prepared has attained the hardness of stone.



A. B. C.
Implements fashioned of clay and crushed shells, from ancient works in the valley of Cumberland and Harpeth Rivers.

The projections were evidently to be held in the hand, and these implements were used most probably for crushing parched corn and beans, or for dressing and smoothing hides. The flat surface of each disk presents a polished appearance, and the ends of the fragments of shells are worn as if from constant attrition. The discoidal portion of A is ellipsoidal, being five and three-fourths inches in the longest diameter, and three and fourteen-sixteenths inches in the short diameter. The discoidal portion of C is circular, the diameter being four and three-fourths inches.

The manner of employing stone implements in clearing the forests has been described by Du Pratz¹ and Adair.²

The aborigines of Florida, when first discovered, in like manner cleared the forests and cultivated the soil.

The artist Le Moyne, who accompanied the French Admiral Renaud de Laudouinière to Florida, in 1564, and who made numerous drawings of the natives, illustrating their appearance, manners, customs, and pursuits, gives, in the thirty-eighth plate of his work, a view of the Indians preparing their fields by digging up the soil with rude hoes; others follow with canes, with which they make holes certain distances apart; the women next followed with corn in the baskets, which they dropped in the holes.

It is evident, therefore, not only from the position of the ancient encampments and towns of the aborigines of Tennessee, in fertile valleys, eminently adapted to the cultivation of Indian maize, but also from the character of many of the stone

¹ Vol. ii, pp. 223-226.

² History of the North American Indians, pp. 405-406.

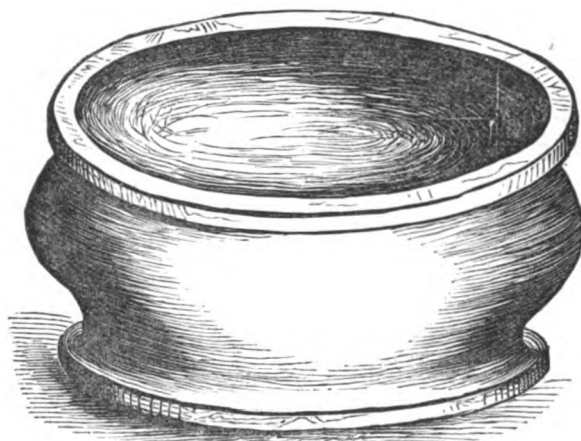
implements, that in common with many of the Southern nations, they cultivated the soil and subsisted chiefly by agriculture. And, in this fact, we have the explanation of the marks of a much larger population than in regions inhabited by the nomadic tribes.

Stone and Earthenware Vessels.

The aborigines of Tennessee, as a general rule, made their drinking and culinary vessels of a mixture of clay of various colors, and crushed shells; but it is now well established that they occasionally formed large vessels of stone.

The large limestone vessel represented in the following figure was obtained from a mound in Mississippi.

Fig. 85.



Stone vessel from a mound near the Tallahatchie River, in Fayette County, Mississippi.

Col. Peyton Skipwith, of Oxford, Mississippi, obtained this remarkable vessel from a mound in the valley of the Tallahatchie River, in Northern Mississippi. When it came into his possession, it had an artistically wrought cover, which fitted accurately over the mouth of the vase. This cover was unfortunately lost during a fire which consumed the office of Col. Skipwith. The following are the dimensions: height, eleven and one-half inches; long diameter, twenty-two inches; short diameter, fifteen inches; depth of bowl, eight and one-half inches; thickness of rim, one inch. On either side of the elliptical body are two projections or handles. The oval is symmetrical, and the outlines of the surface regular, with no marks of cutting instruments. The bottom of the vase is excavated, apparently with the design of rendering it lighter, and shows the marks of cutting instruments. The interior is smooth and regular. The vessel weighs over one hundred pounds, and is lifted and carried with difficulty by a strong man.

It is supposed to have been used as the receptacle for the ashes of the dead.

The taste and skill of the aborigines of Tennessee are well shown in the great variety and beauty of the vases, drinking cups, and culinary vessels, which I exhumed from the stone graves and mounds, and which have been described at length in the preceding chapters, and more especially in Chapters III, IV, V, and VI.

In many of the vases, a high polish has been imparted to the exterior.

From the great variety in size and form, it would appear that they were to a great extent made in accordance with the taste and skill of each potter and tribe, and not on established models.

We have already presented, in preceding chapters, detailed descriptions of many of their interesting relics, such as the painted vases from the burial mounds on the banks of the Cumberland and Harpeth Rivers, the animal-shaped vases, and those ornamented with the human countenance.

The art of manufacturing vessels of various kinds from clay was practised by a large number of North American nations. References to these are found in Du Pratz¹ and Adair.²

One of the most striking peculiarities of some of the vases manufactured by the aborigines of Tennessee is the opening of the mouth at the side of the neck; and I have called attention to this in several hollow idols, which appear to have been used as vessels. I carefully examined the ancient and modern vases, contained in the museums of Edinburgh, Liverpool, London, Oxford, Cambridge, and Paris, in order to discover, if possible, whether any ancient or modern nation manufactured vases with the mouth opening at right angles to the ordinary opening of the vase; but I observed none which corresponded to those of the stone graves and burial mounds of Tennessee.

Upon comparison, it will be seen, that these vases resemble to a certain extent, both in design and finish, similar works of art by the ancient Mexicans and Peruvians.

Many of this class of works of art, by the aborigines of Tennessee, will in their truthfulness and simplicity, in the accuracy of the representations of natural objects, and in the spirit of their designs, compare favorably, not only with those of the Mexicans and Peruvians, but even with similar works of art by the ancient Persians and Egyptians.

¹ Vol. ii, p. 226.

² History American Indians, p. 424.

CHAPTER VIII.

GENERAL CONCLUSIONS.

I. THE crania of the stone-grave and mound-building race of Tennessee possess, in a marked degree, those characteristics which distinguished the American aborigines from all other people.

II. These crania appear to belong to the Toltecan division of the American nations, being characterized, in common with those of the Inca Peruvians, and the Toltecs of Mexico, by the quadrangular form, compressed, almost vertical occiput, lateral swelling out of the sides, and elevated but retreating forehead. As in the case of the crania of the Inca Peruvians, these skulls are remarkable for want of symmetry; for in the whole number examined, scarcely one could be called symmetrical. In many of the crania, the *os incæ*, characteristic of the Peruvian skulls, was observed.

III. The crania of the stone graves and mounds of Tennessee have evidently been altered by artificial pressure; the occiput being greatly flattened, and in some cases rendered almost perpendicular. In many of the crania, on account of the pressure, the parietal diameter was nearly as great as the occipito-frontal diameter, and in some cases even greater.

The flattening of the occiput was especially manifest in the crania of children.

When viewed from behind, the skull presents a conical or wedge-shaped outline, the base being wide at the occipital protuberances and at the openings of the auditory canals, from thence to the parietal protuberances almost perpendicular, and sloping from the parietal protuberances to the vertex.

When the skull is laid upon the side and viewed in outline, the base presents a massive compressed appearance, with a shortened antero-posterior diameter and lengthened lateral diameter; and the foramen magnum and glenoid fossa do not occupy symmetrical positions. These peculiarities were evidently the result of artificial pressure rather than of original conformation.

The mode of burial adopted by the aborigines of Tennessee, in stone coffins or chests covered with large flat rocks, effectually preserved the crania from all injury or distortion by the weight of superincumbent masses of earth, and at the same time entirely excluded the roots of plants and trees. It would therefore be absurd to refer the peculiar configuration of these crania to causes acting after death. Any cause sufficiently great to flatten the occiput and alter the relative position of the parietal bones, the foramen magnum, and the glenoid fossa, would surely have been powerful enough to crush and utterly destroy the crania. It is well known that such changes are impossible in the adult cranium, by any exertion of extraneous force, however carefully and continuously applied.

IV. Many of the crania of the stone graves and mounds bear a striking resemblance to those of the Natchez, described and figured in Morton's "Crania Americana."

That the aborigines of Tennessee were probably descended from the Toltecs, and were related to the Natchez, is rendered probable, not only by the configuration of the crania, but also from the history of this once powerful but now extinct nation. A large proportion of the Indian nations inhabiting the present bounds of Florida, Georgia, Alabama, Mississippi, Tennessee, and Arkansas, at the time of the expedition of De Soto, were worshippers of the sun, were governed by hereditary and despotic princes, and were probably either intimately associated in their origin, or had been brought at some remote period under the dominion of the Natchez. This nation, in former times, extended from the river Manches or Iberville, which is about fifty leagues from the Gulf of Mexico, to the Wabash River, which is about four hundred and fifty leagues from the gulf; and it is probable that the Natchez extended up all the rivers which fall into the Mississippi between these two extremes, and included the region of country occupied by the mounds and fortifications.

V. It is impossible to establish, by authentic history, the relations of the stone-grave race of Tennessee with the Natchez, and we do not assert that they were one and the same people, but only that they were most probably closely related in their origin, and may, at some former time, have been subjected to the same form of government, and practised the same or similar religious rites.

VI. The inquiry into the name and history of the ancient race which inhabited, in past ages, the fertile valleys of Tennessee and Kentucky, has been attended with difficulties; and the conclusions must necessarily be stated with caution. Upon many points, only conjecture can be offered. The valleys inhabited by the aborigines of Tennessee and Kentucky, and in fact the entire valley of the Mississippi, has been, for centuries past, the theatre of constant revolutions amongst the aborigines of the soil; wars, conquests, subjugations, extinctions, and productions of new races appear to have marked the life of American as well as of European and Asiatic nations. In order to throw light upon the origin of the monumental remains of the Mississippi Valley, I instituted an extended inquiry into the name and history of the nations formerly inhabiting Tennessee, before the inroads of the Anglo-Americans, and while it was clearly established that the early French and Spanish explorers were acquainted with a numerous and powerful people inhabiting the valleys of the Cumberland and Tennessee Rivers, at the same time I was unable to adduce *absolute* historical evidence to show that this people constructed the stone graves, and filled the caves with their dead. The extended synopsis which I drew up of the observations of the early Spanish and French explorers and historians is too voluminous to be introduced into the present work, and we shall simply present the general results.

The valleys of Kentucky and Tennessee, and more especially the Cumberland valley, were inhabited two centuries ago, by the nation originally called by the early French explorers and missionaries *Chaouanons*. This name has become, by certain vocal changes, Shawnees. The Chaouanons are supposed to have been

identical with the nation called by the Huron missionaries, Eriehonons, or Cats. We are justified by the statements of the early missionaries, explorers, and historians, in supposing the Erics, Chaouanons, Ontougaunha, Shawnees, Uches, and Savanas, to be the same unfortunate nation whose dominion once extended from the waters of the Savannah River, in the present State of Georgia, to the shores of Lake Erie, and who were persistently followed and relentlessly destroyed by the warlike, cruel, and powerful Iroquois.

The valleys of the Cumberland and Ohio Rivers appear to have been inhabited for a considerable period by the Chaouanons, for in the earliest maps, we find this region called *the country of the Ancient Chaouanons*. The earliest French explorers and missionaries describe this nation as populous and powerful, and their right to the soil as well as their power was acknowledged in the earliest treaties negotiated with the Algonquin tribes by La Salle, nearly two centuries ago. From the earliest period of French occupation in the Mississippi valley, the Chaouanons were, with others of the Algonquin tribes to whom they were closely related by origin and language, firm friends of the French, and were instructed in the Catholic religion as early as two centuries ago, by the Jesuit missionaries. The cross was erected wherever they journeyed, in the wilderness, in the fertile valleys and plains, upon the hills and mountains, along the banks of the rivers, and upon the shores of the great lakes. In the humble wigwams, in the council houses upon the elevated mounds, and within the populous Indian towns, it became a sacred and mysterious emblem and an object of devout and religious worship with the aborigines.

These statements will be illustrated and sustained by the following brief extracts from the monograph which I have prepared, and to which we have before alluded.

Father James Marquette,¹ who set out for the "*Discovery of the Great River, called by the Indians Mississippi,*" on the 17th of May, 1673, speaks of the Ohio River as the Ouaboukigou, which finally became Ouabache, or Wabash, a name now applied to the last tributary of the Ohio. "This river," says Father Marquette, "comes from the country on the east, inhabited by the people called Chaouanons, in such numbers that they reckon as many as twenty-three villages in one district, and fifteen in another, lying quite near each other; they are by no means warlike, and are the people the Iroquois go far to seek, in order to wage an unprovoked war upon them; and as these poor people cannot defend themselves, they allow themselves to be taken, and carried off like sheep, and innocent as they are, do not fail to experience at times the barbarity of the Iroquois, who burn them cruelly."

The observations upon the Chaouanons, given in the "*Account of the Discovery of some New Countries and Nations in North America, in 1673,*" by Pere Mar-

¹ "Relation of the Voyages, Discoveries, and Death of Father James Marquette, and the subsequent Voyages of Father Claudius Allouez, by Father Claudius Dablon, Superior of the Mission of Jesus in New France, 1678." *Discovery and Exploration of the Mississippi Valley*, J. G. Shea, pp. 41-42.

quette and Sieur Jolliet, are similar to those just quoted from the "Relation," of Father Claudius Dablon. It is evidently from the statements of Hennepin, who visited the Mississippi River in 1680, that its banks and tributaries were occupied by several populous and powerful nations.

Two maps of the voyage and discoveries of Marquette have been published; the first copied and published by Shea, in his work on the "Discovery and Exploration of the Mississippi Valley," is said to be a reproduction of the original as it came from the hands of the great explorer. The map published by Thevenot in 1681, as Marquette's, differs from the original, not only in certain names of rivers and Indian tribes, but also in the delineation of the course of the Mississippi River.

In the original map of Marquette, the Mississippi River descends only to the Akansea, the limit of his exploration. The map published by Thevenot in his "Recueil de Voyages de M. Thévenot dédié au Roy, Voyage et découverte du P. Marquette et St. Jolliet dans l'Amérique Septentrionale, Paris, 1661," extends the Mississippi River to the Gulf of Mexico.

In the map of Baron Lahontan (which I have carefully examined and compared with the older maps), published in 1705, at Amsterdam, although his voyage of exploration on the Mississippi and Missouri was commenced on the 28th of May, 1699, the course of the Mississippi is not traced beyond the river "Ouabache," or Ohio.

It is thus established by the testimony and maps of Father Marquette and others, that in 1673 the Chaouanons (Shawnees) were a populous nation inhabiting both banks of the Ohio (Ouaboukigou); and that this nation had been engaged for a number of years in bloody and disastrous wars with the Iroquois, who, in consequence of their possession of firearms, were superior to the Chaouanons.

Shea, who translated the "Relation of the Voyages, Discoveries, and Death of Father James Marquette, and the subsequent Voyages by Father Claudias Allouez, by Father Claudius Dablon," gives, in a note on the portion of the work relating to the Chaouanons, some interesting observations, which appear to have been the result of his study of the early French authorities, both printed and in manuscript.¹

Charlevoix places the final destruction of the Eries by the Iroquois about the year 1655. In his "Histoire de la Nouvelle France" (vol. ii, p. 62), Charlevoix calls the Eries, Chats, and writes the name of this tribe, both Eriez and Eries; and states that the destruction of this nation was so complete that nothing remained but the name which they gave to the great lake upon the borders of which they once lived.

The Andastes, a more formidable nation, are said to have been situated below the Eries, and extended to the Ohio. After many years of disastrous wars, they were finally destroyed in 1672. By a letter of Father Le Moyne's of 1653 (Relacions), the war with the nation of the Eries, or Cat nation, was then newly broken out.

It is scarcely credible that the Iroquois could have utterly exterminated the entire nation. It is more reasonable to suppose that the Eries were a powerful and populous nation, occupying a wide extent of country south of Lake Erie, and that

¹ Discovery and Exploration of the Mississippi Valley, etc., by John Gilmary Shea, pp. 41-42.

only the towns immediately on the lake, or for some distance south, were destroyed by their vindictive and powerful enemies. This view must necessarily be held, if it be true, that the Eries, Chats, Cats, Outougaunha, Savanos, Chaouanons, and Shawnees, were essentially one and the same people, who once occupied the country from the southern border of Lake Erie to the banks of the Tennessee River, and even beyond, to the mouth of the Savannah River.

The Chaouanons (Shawnees) spoke a dialect of the Algonquin language, which was one of the original tongues of the North American continent; and was spoken by every tribe from the Chesapeake to the Gulf of St. Lawrence, and westward to the Mississippi and Lake Superior: the Anakis, Algonquins proper, Montagnais, Ottawas, Nipissings, Nez Percés, Illinois, Miamis, Sacs, Foxes, Mohegans, Delawares, Shawnees, and Virginia Indians, as well as the minor tribes of New England, all spoke dialects of this wide-spread language; the only exception in this vast strip of territory being the Huron-Iroquois language, spoken by the Hurons, Petuns, Neuters, and Iroquois, which is distinct from the Algonquin.

At the time of the explorations of Father Marquette, the Chaouanons, in their home within the basin of the Cumberland River, and along the banks of the Ohio, connected the southeastern Algonquins with those of the west. South, and southwest of the Chaouanons, were the Chickasâs, a warlike and powerful tribe of savages, extending from the banks of the Mississippi eastward, to the mussel shoals of Tennessee River. These tribes were visited by Marquette, and again by La Salle, in his explorations of the lower Mississippi. At first they were the friends of the French, but having been won to the English by traders and emissaries from Carolina, they became most constant and successful enemies of the French colonies in Louisiana.

That friendly relations were established at an early day between the Chaouanons (Shawnees) and the French is evident from the statement made by Father Membré, that La Salle, in 1680 and 1681, not only drew into his interest and united with the Illinois the Outagami chiefs, and detached by presents and arguments the Miamis from the Iroquois; but he also sent presents to the Shawnees and invited them to come and join the Illinois against the Iroquois, who carried their wars, at that time, even to them. La Salle succeeded in uniting these nations before he left the Illinois, on the 22d of May, 1681, and returned to the Missilimakinac. Father Membré thus explains the object of La Salle's effort to combine these nations against the Iroquois: "If we wish to settle these parts, and see the faith make any progress, it is absolutely necessary to maintain peace and union among all these tribes, as well as among others more remote, against the common enemy, that is, the Iroquois, who never makes a real peace with any whom he has once beaten, or whom he hopes to overcome by the divisions which he artfully excites, so that we should be daily exposed to results like that to which we were subject last year. La Salle, convinced of this necessity, has since our return purchased the whole Illinois country, and has given cantons to the Shawnees, who there colonize in large families."

The year 1681, therefore, marks the commencement of the immigration of the

Chaouanons from the banks of the Ohio and Cumberland Rivers to the country of Illinois.

The narratives of the early French explorers contain numerous allusions to the bloody and desolating wars carried on by the Iroquois. Thus, Father Louis Hennepin, in his "Account of the Discovery of the River Mississippi, and the Adjacent Country," says of the Iroquois, "they are an insolent and barbarous nation, and have shed the blood of more than two millions of people in that vast expanse of country." Daniel Coxe, in his "Description of the English Province of Carolina, by the Spaniards called Florida, and by the French La Louisiana, and also of the great and famous river Meschachebe or Mississippi," says, with reference to the Ohio (Ohio) River, "Formerly, divers nations dwelt on this river, as the Chawanoes (Shawnees), a mighty and very populous people, who had about fifty towns, and many other nations, who were totally destroyed or driven out of their country by the *Iroquois*, this river being their usual road, when they make war upon the nations, who live to the south and west."

On the valuable map reproduced from the original, and published in the second part of French's Historical Collections of Louisiana, the Chaouanons are represented as inhabiting the banks of the Cumberland River, which is called the river of the ancient Chaouanons. What is now called the Savannah River in Georgia, appears upon this map as the river of the Chaouanons, and a town of the Chaouanons is represented near where Augusta now stands. The Chaouanons are also represented as occupying the country between the two branches of the Alibamou, or Coosa. The position of the Eries, or Chat nation, is also indicated on this map, and, if the Chaouanons and the Eries were the same people, it is evident that the ancient, powerful, and populous nation of the Chaouanons occupied an immense extent of country, reaching from the southern borders of Lake Erie to the mouth of the Savannah River (R. des Chaouanons) on the Atlantic Coast.¹

Charlevoix's great work, "Histoire de la Nouvelle France," published in Paris in 1744, contains, as is well known, a number of most valuable maps of various portions of North America. Upon his map of the great lakes, the countries formerly occupied by the Petuns, by the Neuter nation, and the Eries are indicated. The large map of Louisiana embraces the entire territory at present occupied by the United States; and upon this chart the region of country between the Ohio and Tennessee Rivers is assigned to the Chaouanons, and the Cumberland River of Tennessee and Kentucky is called "Riviere des Anciens Chaouanons." A village or town of the Chaouanons is marked on the P'Oyo, ou Belle Riviere, directly south of Lake Erie and the country formerly inhabited by the extinct Eries.²

In the map of the American Indian Nations adjoining the Mississippi, West and East Florida, Georgia, South and North Carolina, Virginia, etc., published by James Adair, 1775, in his "History of the American Indians," the Cumberland River is called the Old Shuanon River, and the Tennessee, the Cherakee

¹ Carte de la Louisiane et du cours du Mississippi, dressé sur un grand nombre de Mémoires, entre autres sur ceux de M. le Maire, Par Guillaume de l'Isle de l'Académie. R^{le} des Sciences.

² Hist. de la Nouvelle France, vol. vi, p. 141.

River. The country lying between the Ohio and Wabash Rivers is called "Lower Shawano," and the "Shuanos" are represented as extending up to the headwaters of the Ohio River between the "Alleghany" mountains and Lake Erie.

The series of maps to which we have alluded possesses interest and weight in settling the question of the occupation of portions of Tennessee and Kentucky in former times by the Chaouanons (Shawnees).

The ancient maps of Captain John Smith, in his "Travels, Adventures, and Observations in Europe, Asia, Africa, and America, beginning about the year 1593, and continued to the present, 1629," are interesting, not only for the information which they give, as to the names and location of the tribes of Indians inhabiting Virginia at the time of its discovery, but also for the light which the accompanying illustrations throw on the dress, manners, and weapons of the North American Indians, at the time of the early settlements. It will also be seen from these illustrations that the Indians of that day worshipped idols.

As the destruction of the Adirondacks took place more than two centuries ago, and as the Shawnees removed from the banks of the Savannah before this event, upon careful consideration we have been disposed to place the time of their war with the Cherokees as early as 1640. But we have seen that at this time, and at a later period, they were a powerful and numerous people, inhabiting the Cumberland and Ohio River valleys. These facts also indicate that this people once inhabited or roamed over an immense tract of country extending from the shores of Lake Erie to the mouth of the Savannah River, and even beyond, to the banks of the Sewanee River in Florida; and that pressed on all sides by powerful combinations of various Indian tribes, a portion of the nation, driven from the banks of the Savannah (Showanon) River by the Cherokees, moved northward. This body may have eventually united with their brethren of Tennessee and Kentucky, though they were not the original inhabitants of these States, but only a branch of the nation which extended into Georgia and Florida. Another portion was incorporated into the Creek or Muscogulgee Confederacy; which, according to Bernard Romans,¹ was composed of the remains of the Cawittas, Taleposas, Coosas, Appalachians, Coushacs or Coosades, Oakmulgees, Oconis, Ockbuoys, Alibamons, Natchez, Weetumkees, Pakanas, Taensas, Chacsi-boomas, Abekas, and some other tribes; and which, from the testimony of Le Clerc Milford,² was formed a considerable time after the invasion of De Soto.

Tradition³ assigns Florida, and more especially the banks of the Sewanee River, as the former abode of the Chaouanons; and it is well established that from an early date, even before 1638, the Appalachian Indians occupied the neighborhood of this river. The Appalachian Indians appear to have been closely allied to the Uchees, who were once a powerful nation, claiming to be the oldest inhabitants of

¹ Concise Natural History of East and West Florida, 1776, pp. 90-91.

² Mémoire ou Coup d' Œil rapide sur mes différens Voyages, et mon séjour dans la nation Crèeck. Paris, 1802.

³ Transactions of the American Antiquarian Society, vol. i, pp. 273-274. Schoolcraft's Notes on the Iroquois, pp. 160-161.

Natural History of East and West Florida, Bernard Romans, 1776, pp. 59, 65, 66, 69.

the soil, and were closely related to, if not identical with, the Chaouanons. It is evident, from the statements of John Lawson, that the Savannas, or Chaouanons, had been subjected to bloody and disastrous wars, and long before had been compelled to undertake various migrations, and that, at the time of his travels, 1700, a large portion of the nation, which had formerly inhabited Florida and Georgia, had removed northward and joined the affiliated Algonquin tribes.

Upon the question of the nature and time of these wars, tradition sheds but dim and imperfect light. Even as late as the travels of Bartram, there were remnants of the Shawnees (Chaouanons) in Georgia, as will be seen from his description of the Uchee Town, esteemed from the antiquity of the people, and their talent and influence, the mother town of the Creek or Muscogulgee Confederacy. Bartram¹ says, "Their own national language is radically different from the Creek or Muscogulgee tongue, and is called the Savanna or Savannuca tongue; I was told by the traders, it was the same as the Shawnese." Col. Benjamin Hawkins² says, that the "Village of Sauvanogee on the waters of Coosa and Tallapoosa, is inhabited by Shawnees. They retain the language and customs of their countrymen to the northwest." Bartram³ thus expresses his views as to the mode in which the great Creek Confederacy arose. This powerful empire or confederacy arose and established itself on the ruins of that of the Natchez. According to the Muscogulgees' account of themselves, they arrived from the southwest, beyond the Mississippi, some time before the English settled the colony of Carolina and built Charleston; and their history concerning their country and people from whence they sprang, the cause of leaving their native land, and the purposes of their migration, is very similar to the account of the Natchez as given by Du Pratz; and they might at one time have been included as allies and confederates in that vast and powerful empire of red men. The Muscogulgees pushing on, and extending their settlements on the northeast border, until the destruction of the Natchez Empire, subjugated the various bands or tribes, which formerly constituted the Natchez, and uniting them with themselves formed a new confederacy. The Muscogulgee tongue became now the national or sovereign language, just as the Natchez tongue had been. Those bands which spoke a different language from that of the Muscogulgee were, without doubt, the shattered remains of the various nations who inhabited the lower or maritime parts of Carolina and Florida, from Cape Fear westward to the Mississippi. In this connection Bartram says: "The Uchees and Savannucas is a third language radically different from the Muscogulgee and Lingo, and seems to be a more northern tongue. I suppose it to be a language that prevailed amongst the numerous tribes who formerly possessed and inhabited the maritime parts of Maryland and Virginia. I was told by an old trader, that the Savannuca and Shawnese speak the same language."⁴

¹ Bartram's Travels, pp. 388-9.

² Historical Collections of Georgia.

³ Loc. cit., 464-466.

⁴ Bartram's Travels through North and South Carolina, Georgia, and East and West Florida, pp. 464-466. Bernard Roman's Nat. Hist. of East and West Florida, pp. 59-66. Pickett's History of Alabama, vol. i, pp. 81-82.

According to the testimony of the French writers,¹ the Iroquois conquered and incorporated the Satans, Chawanons, or Shawanons, "whom they had formerly driven from the lakes," in their residence on the Cumberland and Ohio Rivers, about the years 1672 or 1664. Governor Pownal, in his "Administration of the British Colonies," says that about 1664, the Iroquois carried their arms as far south as Carolina, and as far west as the Mississippi, over a vast country which extended twelve hundred miles in length and about six hundred in breadth; where they destroyed whole nations of which there are no accounts remaining among the English. The Six Nations claimed the hunting lands of the Ohio River, which included the present state of Kentucky, and a large portion of middle and western Tennessee, at the peace of Ryswick in 1697, in virtue of their conquest from the Shawnees and other nations. In further confirmation of this Indian title, it should be mentioned that Lewis Evans, a gentleman whom Dr. Franklin compliments as possessed of great American knowledge, represents in his map of the middle colonies of Great Britain on this continent, the country on the southeasterly side of the Ohio River as the hunting lands of the Six Nations. In his analysis of his map, he expressly says: "The Shawanese, who were formerly one of the most considerable nations of those parts of America, whose seat extended from Kentucky southwestward to the Mississippi, have been subdued by the confederates (or Six Nations), and the country since became their property."²

Dr. Mitchell, who, at the solicitation of the British Board of Trade and Plantations, published a map of North America, which was afterwards used for the adjustment of the boundaries in the treaty of Paris in 1783, observes that "the Six Nations have extended their territories ever since the year 1672, when they subdued and were incorporated with the ancient Shawnese, the native proprietors of these countries."

From the "Natural and Aboriginal History of Tennessee," by John Haywood, published in 1823, and from the "Annals of Tennessee," by Dr. J. G. M. Ramsey, we gathered the following information with reference to the early history of the Shawnees in Tennessee.

The late General Robertson learned from the Indians that, in 1665, the Shawnees occupied the country from the Tennessee River to where Nashville now stands, and north of the Cumberland River; and that, about 1700, they left this country and emigrated north, and were received as a *wandering tribe* by the Six Nations, but were not allowed to have then any claim to the soil. As late as 1764 the Shawnees moved from Green River in Kentucky, where a part of them resided, to the Wabash. In 1772, Little Corn Planter, an intelligent Cherokee chief, narrated that the Shawnees, a hundred years before, by the permission of his nation, removed from the Savannah River to the Cumberland. Many years afterwards the two nations becoming unfriendly, the Cherokees marched against the Shawnees and put a great many of them to death. The survivors then forti-

¹ Butler's History of Kentucky, pp. 1-5.

² Franklin's Work, vol. iv, 271.

A History of the Commonwealth of Kentucky, by Mann Butler, A.M., 1834, pp. 1-5.

fied themselves, and maintained a protracted war in defence of their possession of the country. At length, the Chickasaws became the allies of the Cherokees, and the expulsion of the Shawnees from the Cumberland valley was gradually effected. This occurred about the beginning of the last century. A few years later, when Monsieur Charleville, in 1714, opened a store upon the land where Nashville now stands, he occupied the fort of the Shawnees as his dwelling. They were then, and had been for several years, so harassed by their enemies, that small parties had been for a long time gradually withdrawing from the country; and their number had become so inconsiderable, that they determined to abandon Cumberland entirely, and afterwards did so. The Chickasaws, hearing of the intended removal of the Shawnees, resolved to strike an effectual blow against them, and, if possible, possess themselves of their stores. For this purpose a large party of Chickasaw warriors posted themselves on both sides of the Cumberland, above the mouth of Harpeth, provided with canoes to prevent escape by water. The attack was successful, all the Shawnees were killed, and their property was captured by the Chickasaws.

The hostilities between these tribes not being brought to a close by any formal treaty of peace, they continued to destroy each other as often as opportunity offered. At length, afraid of meeting each other, all of these tribes wholly forsook the country; and for sixty years it remained not only unoccupied by either, but was seldom visited by hunting parties. In this way when it was first explored and began to be settled by the whites, the whole country west of the Cumberland Mountains was found uninhabited, and abounding with all the wild beasts of the forest. Small parties of wandering Shawnees occasionally infested the frontiers, and from their familiarity with the mountains, the rivers, and the paths leading through the country, were able to inflict serious damage on the infant settlements. A part of the banditti who afterwards infested the Tennessee River, and committed such shocking outrages on emigrants and navigators at the celebrated passes, were Shawnees.

VII. The preceding investigation furnishes data by which we determine that the aboriginal remains of Tennessee are at least more than one hundred and seventy-five years old. Many of the mounds and crania are, without doubt, of great age, but it is certain that no earthworks were erected in this country by the North American Indians, after the beginning of the eighteenth century.

VIII. How long the Chaouanons (Shawnees) occupied the Cumberland Valley, or whether they built the fortifications and pyramidal mounds, and populated the extensive burial grounds with their numerous stone graves, has not been determined by the preceding inquiry. This nation belonged to the Algonquin division of the North American Indians, which, from their traditions appear to have been one of the oldest races of the continent; nevertheless, they were not known to worship idols, or to erect fortifications and pyramidal mounds.

IX. The Chaouanons (Shawnees, Savanas, Savancas, Uchees) formerly inhabited the country along the banks and head waters of the River Savannah, in Georgia. They were a brave and, up to the time of the formation of the Muscogulgee nation, a conquering people, and resisted stoutly the marauding exploration of De Soto.

This portion of the Chaouanon nation was, during its occupancy of northern Georgia and Alabama, involved in several bloody wars; and it was finally defeated and driven northward by the Cherokees. They were closely related to, if not identical with, the Uchees, who claimed to be the oldest inhabitants of the country, and spoke a language different from the Muscogulgee.

In the beginning of 1600, the Chaouanons occupied an extensive tract of country reaching from the southern shores of Lake Erie to the mouth of the Savannah River; and they were subsequently pressed by the Iroquois in the northeast, by the Cherokees and South Carolina Indians in the south and east, and by the Chickasaws on the west. They were finally expelled from the valley of the Cumberland by the Cherokees and Chactaws about 1700-1714.

Through long series of years, the Iroquois pursued the Chaouanons with relentless cruelty, and destroyed immense numbers of this comparatively peaceful and agricultural people. The valleys of the Ohio and Cumberland Rivers were selected by the fierce and cruel Iroquois, as the great highways for the advance of their war parties against the Indian nations of the west and southwest; and thus, by their geographical position, the Chaouanons were subjected to continuous inroads and perpetual wars, and were compelled to abandon the country in large numbers and colonize with the Illinois, as early as the visit of La Salle in 1682. This remarkable people occupied, at an early period, the most conspicuous position among the Indian nations, whose ancient seats were within the present limits of the United States, and established for themselves a more remarkable civil organization, and acquired a higher degree of influence, than any other race of American aborigines, except those of Mexico and Peru.

The Iroquois stood for nearly two centuries, during the period of European colonization, with an unshaken front, against the desolations of war, the blighting influences of foreign intercourse, and the still more fatal encroachments of a restless and advancing border population. After the healing of their internal dissensions, and the formation of the *League*, the Iroquois developed a system of universal aggression, and in their thirst for military glory and political aggrandizement, made the forests of North America resound with human conflicts, from New England to the Mississippi, and from the confines of the Great Lakes to the banks of the Tennessee. With the possession of firearms, received from the Dutch after the discoveries and settlements of 1609-1615, commenced not only the rapid elevation, but the absolute supremacy of the Iroquois over other Indian nations. In 1643 they expelled the Neuter nation from their ancient seat. In 1653 they exterminated the Eries, occupying the south side of Lake Erie. In 1670 they completed the subjugation and dispersion of the Adirondacks and Hurons, and turned their arms against the New England nations. And in 1680, they invaded the country of the Illinois, having previously to this date, ravaged the country of the Chaouanons, and, both before and after this date, having turned their arms against the Cherokees upon the Tennessee, and the Catawbas of South Carolina, and having carried their conquests even to the banks of the Mississippi. It is well established that, for a century at least, the Iroquois were involved in an almost uninterrupted warfare; and, at the close of this period, they had subdued and held in nominal subjection, all

the principal Indian nations occupying the territories which are now embraced in the States of New York, Delaware, Maryland, New Jersey, Pennsylvania, the northern and western portions of Virginia, Ohio, Kentucky, northern Tennessee, Illinois, Indiana, Michigan, and a portion of New England.

In the continual wars, protracted during long periods, we find an explanation of the existence, at the present day, of a portion, at least, of earth walls surrounding the sites of ancient Indian towns, in the valleys of the Cumberland and other southern and western rivers. It is now well established that this mode of protecting these towns and villages by earthworks crowned with stockades was understood and extensively practised by the aborigines, at the time when the first voyagers and adventurers reached this continent, more than three centuries and a half ago.

X. Whilst the preceding facts support the supposition that a portion of the remains of earthworks in Tennessee may have been the work of the Chaouanons, they do not warrant the assertion that the pyramidal mounds, stone sculptures, and curiously fashioned idols, were the work of this people. On the contrary, it would appear that the bloody wars in which this nation was engaged for one century, from 1600 to 1700, and the numerous removals which they were compelled to make, covering a tract of country extending from the Sewanee River of Florida to the shores of Lake Erie, were unfavorable to the construction of large earth pyramids, and sacrificial and burial mounds surrounded by earth and stone walls.

It appears that, when an Indian nation occupied the territory of another whom they had expelled or conquered, they took possession of and occupied the ancient sites of towns.

Thus it is well established, that the Chaouanons did not lose their nationality or their reputation for intelligence and bravery after their expulsion from the Cumberland valley; but continued to exert a powerful influence on the counsels of the surrounding nations; and were renowned alike for their sagacity and bravery. In the war of the Revolution, they inflicted serious damage on the American colonies; and to this day, they retain their name and tribal organization.

The Chaouanons (Shawnees) represented the finest type of the North American Indians. They were noble, generous, and faithful friends; brave, active, and restless warriors; and bitter, dangerous, implacable, and bloody-thirsty enemies. Their great men were true patriots, brave warriors, great leaders, and renowned orators. No nation on the American continent, within the bounds of the United States, Canada, and Russian America, has produced more illustrious names, amongst which may be mentioned, Logan, Cornstalk, and Tecumseh.

XI. It is thus rendered evident that the interior of the American continent has been the theatre of numerous bloody wars and migrations of savage, unlettered nations; and, in the absence of authentic history, it is impossible to assign the monumental remains of Tennessee to any specific date or to any known nation of North American Indians.

It is reasonable to suppose that the Chaouanons occupied only temporarily the sites of the aboriginal towns.

XII. The discovery of undoubted marks of syphilis in the bones of the skeletons included in the stone graves is of importance in its bearing on the history of this

remarkable disease; and tends to sustain the views of those writers who have maintained its American origin

XIII. The mode of burial in stone coffins or cists, practised so extensively by the aborigines of Tennessee, is remarkable, as differing from the methods employed by all the other Indian tribes of North America, of whom authentic records have been preserved.

XIV. The stone-grave race of Tennessee appear to have been idolaters. They carved idols in stone, and fashioned them from a mixture of clay and shells. They appear to have erected altars and offered sacrifice. They painted the emblems of the sun and moon upon high and inaccessible rocks, and carved them on shell ornaments, which were worn suspended on the breast.

XV. The physiognomy of many of their idols is different from that of the nomadic hunting tribes of North America, and resembled more nearly the idols of the Toltecs and their descendants. The head-dresses, as well as the physiognomy of some of these idols, are suggestive of an eastern or Chinese origin.

These relics indicated that this race possessed a considerable talent for sculpture, which might, under favorable circumstances, have led to a high degree of perfection in the art.

The artistic skill of this extinct race was also displayed in the perfection and beauty of their culinary and sacred vessels, fashioned in the form of men and animals, and in their warlike implements, constructed with the most perfect symmetry from the hardest material.

XVI. The presence of large sea-shells of various species, in great numbers, in the stone graves, indicates that this race either had commercial relations extending to the shores of the Atlantic, the Gulf of Mexico, and the Pacific; or that these shells had been preserved in their migrations from remote regions. This conclusion is sustained also, by the representation of certain Mexican and Central American birds and animals on their pipes and culinary vessels, and by the use of obsidian, fluor-spar, and serpentine in the construction of their idols and warlike implements.

INDEX.

- ABANDONMENT** of settlements by aborigines, 88
- Aboriginal nations**, remains of the Mississippi valley are referred to various, 39
- remains, localities where found in Tennessee, 104
- collection of, at State Capitol at Nashville, Tennessee, 139
- destruction of, 82
- of Kentucky, Tennessee, etc., abandonment by primitive inhabitants of, 88
- near Pulaski, Giles Co., Tennessee, 108
- rock paintings, 137, 138
- settlement occupied the hill upon which is residence of Col. Overton, 39
- town, remains of, on Cherry Creek, White Co., Tenn., 133, 134
- Aborigines**, Bryan Edwards on excessive sensuality of West Indian, 67
- of America, burial modes practised by the, 7-35
- of America, diseases and pestilences among, 89-99
- of Tennessee, origin of, 120
- resemblance of crania of, to those of Natchez, Toltecs, and Peruvians, 120, 121
- wigwams of, 38
- Acajatl**, an aromatic substance of the Mexicans, 27
- Acolhuan** nation, burial customs of the, 28
- Adair, James**, on burial customs of the Cherokees and Chactaws, 17
- on ravages of smallpox, 97
- states that the Chactaws practised head-flattening, 122
- Adirondacks**, destruction of the, 152
- Alabama**, reference made to Pickett's History of, 14
- Alesco**, cow-pox in, 96
- Alibamo**, numerous population in, 105
- Alibamons**, burial customs of the, 33
- Altar** from centre of mound opposite Nashville, Tenn., 42
- in centre of burial mound on West Harpeth River, Tenn., 81
- in mound at Oldtown, Tenn., 86
- in oblong mound near Franklin, Tennessee, 57
- like surface in mound on West Harpeth River, Tenn., 80
- Anahuac**, Aztecs took possession of, 120, 132
- cross in temples of, 78
- temples of, terra cotta heads from, 120
- Angelopoli**, deaths from smallpox in, 95
- Animals**, bones of, in graves, 49
- Apoplexy** common among people practising head flattening, 124
- Aqueducts** within inclosure near Paris, Tennessee, 131
- Ardue**, Joannes ab, respecting syphilis, 69
- Arica**, mummies exhumed near, by Dr. Ruschenberger, 33
- Arickarees**, smallpox ravages among, 97
- Arkansas**, burial customs of the, 17, 33
- Arrow-heads** from Oldtown, Tenn., 87
- found around mounds on Cumberland River, Tenn., 49
- found in alluvial plains around the burying ground opposite Nashville, Tenn., 7
- found in graves at Floyd's Lick, Tenn., 12
- Arrow-heads** found in mound in North Nashville, Tenn., 50
- found in mound opposite Nashville, Tenn., 46, fig. 12
- found in Tennessee illustrate condition of former inhabitants, 1
- from ancient work near Franklin, Tenn., 76
- from fields in valley of Duck River, Tenn., 103
- Ashes** in mound at Oldtown, Tenn., 86
- in mound on north bank of Holston, Tenn., 4
- of Mexican Kings deposited in Chapoltepec, according to Solis, 27
- paintings, caves, mounds, and charcoal, connection between, 4
- strata of, on river bank near mounds on Cumberland River, Tenn., 49
- under stone piles near Stone Fort near Manchester, Tenn., 55, 103
- within sacrificial vase or altar from centre of mound opposite Nashville, Tenn., 42
- Assinniboins**, smallpox ravages among, 97
- Astruc**, John, reference made to, 70
- Atacapos**—inhabited coast at the mouth of Mississippi—antiquity of, 122
- Atarupe**, Humboldt on cavern and mummies of, 31, 32
- Ataxique**, fever in the tropics, 90
- Atures**, burial customs of the, 33
- Atwater**, Caleb, quotes Mr. Clifford respecting the coverings of mummies, 5
- on image from tumulus, near Nashville, Tenn., 52
- reference made to, in Archæol. Americana, 140
- Axes** from Oldtown, Tenn., 87
- battle, from Tennessee, 46, 140, 142, fig. 11
- copper, found in Peruvian graves, 30
- Aztec** sculpture, image found in mound opposite Nashville, Tenn., resembles, 44
- Aztecs** took possession of Anahuac, 120, 132
- BANCROFT**, Dr. Edward N., Essay on Yellow Fever by, 93
- Baraguan**, Straits of. caverns in, 31
- Barbadoes**, Dr. Henry Warren on introduction of yellow fever in, 93
- Bartram** describes height of graves, 9
- on burial customs of Chactaws, 17
- on head-flattening among the Chactaws, 122
- Baskets** in which human remains in cave at Warren County, Tennessee, had been interred, 2, 3
- Bastions**, semi-circular, of the ditch on north bank of the Holston, Tenn., 4
- Beads**, bone, from Tennessee, 137
- inclosed in coffin in saltpetre cave, Warren Co., Ky., 5
- used as ornaments of bodies in mound opposite Nashville, Tenn., 42, 43, 45, fig. 6
- Beckett**, William, respecting syphilis, 68
- Bellknapp's** Life of Gorges, reference made to, 91
- Biddle**, Charles, brought mummy of Muysca Indian to National Academy of Science at Philadelphia, 32
- Big Harpeth River**, Tenn., ancient works on, 79-99
- celt from, 142
- chain of fortified ancient towns on, 36

- Big Harpeth River, Tenn., combination of works along, 36
 cranium from burial mound on, 111
 earth works on, 56-78, fig. 23
 extensive collection of stone graves on, 8
 rock-painting on, 138
- Big Tennessee River, mounds on banks of, 36
- Bimeda, Luis De, recorded the history of John Ortiz, 13
- Birds, bones of, in graves, 49
 painted on limestone bluff forming south bank of the Holston, Tenn., 4
- Black Bird, grave of, Chief of the O-ma-haws, on the Upper Missouri River, 25
- Blackfeet, smallpox ravages among the, 97
- Bledsoe's Lick, Tenn., remains at, 104
- Boiling Springs, Tenn., stone graves at the, 8
 idol from stone grave at, 132
- Bone beads from Tennessee, 137
- Bones, charred, found under stone heaps near Manchester, Tenn., 55
 deposit of human, near residence of Major John F. Jewett, near Livingston, Tenn., 12
 found by Dr. Zach. R. Chowning, near Livingston, Tenn., 12
 found in cave on Duck River, Tenn., 102
 from mound in a work in Henry County, Tenn., 131
 from Rock Mound near Pulaski, Tenn., 109
 human, found in caves in Tennessee, 1
 human, in stone graves at Sycamore, Tenn., 55
 in mound on French Lick Creek, near Nashville, Tenn., 51
 of birds and animals found in graves of children, opposite Nashville, Tenn., 49
 of child in grave near Franklin, Tenn., 72
- Brazil, Coroados of, burial customs of the, 33
 inhabited by Caribs, 122
 smallpox in, 96
 Spix and Martin's travels in, 33
 yellow fever in, 93
- Brentwood, Tenn., small mound near, 37
 stone graves in and around, 8
- Brown, Dr., found stone images near mound below Charlottesville, Tenn., 133
 Thomas, at Oldtown, Tenn., ancient works and stone graves on place of, 8, 82
- Buffalo Gap, Tenn., rock-painting at, 138
- Burial caves in Tennessee, 1-6, Chapter I.
 customs of southern Indians at time of De Soto's invasion, 13
 ground near fortification near Carthage, Tenn., 3
 opposite Nashville, Tenn., on bank of Cumberland River, 7, 8
 in box or coffin, origin of, 34
 manner of, by the ancient race in Tenn., 8
 mode of, in cave on Smith's Fork, Tenn., 3
 modes practised by the aborigines of America, 7-35, Chapter II.
 mounds, apparent royal, contain but a few small graves, 9
 near Brentwood, Tenn., 41
 near inclosure on West Harpeth River, Tenn., 80
 on Cumberland River, 41
 stone grave, 37
 remarks on methods of, 146
- Caciques of Quito were buried in the principal temple, 30
- Cafeque, Georgia, supplied servants to De Soto, 105
- Cairo, cave 22 miles above, on Cumberland River, 3
- California, smallpox among Indians of, 96
- Canadian Indians, burial customs of the, 34
- Caney Fork River, Tenn., remains on, 104
- Canteen, Indian, from Mr. Dixon's farm on White Creek Road, Tenn., 54
- Capac, Huayna, corpse of, seen by Garcilasso, 29
- Caribs, burial costumes of the, 33
 flattening of skull among the, 121
 reference to Sir W. Young's account of the, 33
- Caribbees, see Caribs, 121, 122
- Carter, Dr., visited rock paintings in Mound Bottom, Tenn., 138
- Carter's Creek, mound on junction of Rutherford's and, 107
- Carthage, Tenn., cave near Cumberland River, 12 miles below, 3
- Carthagena, vomito in, 94
- Castalian Springs, Tenn., aboriginal remains at, 104
- Catlin, account of burial customs of Mandans, 23, 24
 ascribers fortifications on Muskingum and Ohio Rivers to the Mandans, 38
 describes grave of Black-Bird, Chief of the O-ma-haws, on Upper Missouri River, 25
 gives drawings of heads of Osages, 124
 on destruction of Indians by smallpox, 97, 98
 on wigwams of Mandans, 38
- Cattaraugus, Senecas resided at, 15
- Caucasian crania, measurements of, 47
 skulls, internal capacity of, 114
- Cave near Pulaski, Giles Co., Tenn., on plantation of Mr. William Sheppard, 3, 108
 of Miztica Baxa, cross from, 78
 on Duck River, Tenn., 102
 on Holston River near Strawberry Plains, in Knox Co., Tenn., idol from, 128
 on south bank of Holston, Tenn., opposite the mounds, 4
 twelve miles below Carthage, Tenn., near Cumberland River, 3
- Caves and mummies of Atarupe, Humboldt on, 31, 32
 burial, in Tennessee, 1-6
 mounds, charcoal, ashes, and paintings, connection between, 4
- Cayambe, plains near, covered with tombs, 30
- Celt, chipped, from stone grave in Cumberland Valley, Tenn., 139, fig. 76
 from Cumberland Valley, Tenn., 142, figs. 82, 83
 from Middle Tennessee, 142
 from mound in Nashville, Tenn., 51, fig. 20
 from Oldtown, 87, fig. 55
 of jasper from bed of Seine at Paris, 58
 purpose of European stone, 58
 stone, from bed of Thames at London, 58
- Cemetery at Mr. Macgavoc's, near Nashville, Tenn., 11
- Cempoala, smallpox in, 94
- Central America, shores of, inhabited by the Caribs, 122
 smallpox in, 96
- Ceremonies at burial of a Mexican king, 27
 at death of female chief of Natchez, Father Charlevoix's account of the, 20, 21
 religious, of aborigines, at De Soto's time, 106
- Chactaws, burial customs of the, 16, 17, 18, 19
 have a game called Chunké, 141
 head-flattening among the, 122
 ravages of smallpox among, 97
- ChAMPLAIN'S explorations of Maine, 107
- Chapoltepec, ashes of Mexican kings, according to Solis, deposited in, 27
- Charaibes. See Caribbees, 122
- Charcoal and ashes in stone graves at Sycamore, Tenn., 55
 ashes, paintings, caves, and mounds, connection between, 4
 at Oldtown, Tenn., 86
 found in mound on French Lick Creek, near Nashville, Tenn., 51, 52
 in mound on north bank of Holston, Tenn., 4
 in mound on West Harpeth River, Tenn., 80
 strata of, on river bank near mounds on Cumberland River, Tenn., 49
 under stone piles, near Stone Fort, near Manchester, Tenn., 103
- Charlevoix, Father, account of ceremonies at death of female chief of Natchez, 20, 21
 on burial customs of the Canadian Indians, 34
- Charlotte Turupike, near Nashville, Tenn., graveyard near, 8

- Charlottesville, Tenn., Dr. Brown found images near mound below, 133
- Cherokees, and Chickasaws drove Shawnees from Cumberland, 51
are said to have painted figures on limestone bluff, forming south bank of the Holston, Tenn., 4
burial customs of the, 17, 18, 19
ravages of smallpox among, 97
stockaded mound on French Lick Creek near Nashville, Tenn., 52
- Cherry Creek Valley, Tenn., Dr. E. L. Gardenhire on mound in, 12
remains of aboriginal town in, 133, 134
- Cheyennes, smallpox among the, 98
- Chica, guaqueros for drinking, found in Peruvian tombs, 31
- Chichimecs, sepulchres of the ancient, 28
- Chickasa, numerous population in, 105
- Chickasaws and Cherokees drove Shawnees from Cumberland, 51
Capt. Bernard Romans on the burial customs of the, 16
ravages of smallpox among, 97
- Child's grave in earthwork near Franklin, Tenn., 60, 72
- Chili, Indians of, burial customs of the, 33
- Chillicothe, Ohio, cross found in mound at, 77
phallus or priapus from, 135
- Chimu, ruins of city of, visited by Humboldt, 31
- Chinese and Mexicans, ornaments and head-dresses of Tennessee stone-grave race resemble those of, 72
Tae-heih, 137
Tartary, burial customs in, 118
- Chinooks, flattening of cranium among, 121
method employed by, in flattening the head, 123, fig. 64
- Chippeways, burial customs of the, 34
- Chisel, flint, from mound in North Nashville, Tenn., 50, fig. 50
from earthworks on Big Harpeth River, 75, figs. 39, 40
from fields in valley of Duck River, Tenn., 103
from Oldtown, Tenn., 87
stone, in grave near Franklin, Tenn., 61
- Choctaws. *See* Chactaw.
- Chokta. *See* Chactaw, 17, 18, 19
- Cholula, pyramids of, 28, 120, 132
stone idol from pyramid at, 132
- Chowning, Dr. Zach. R., found bones near Livingston, Tenn., 12
- Chuuké, a Chactaw game, 141
- Cieca on compression of skull, 119
- Cinders found in mound on French Lick Creek, near Nashville, Tenn., 51, 52
- Cists. *See* Stone Coffins, 7
- Clarkesville, Tenn., image from mound near, 133
- Clavigero, account of funeral rites and sepulchres of the Mexicans, 25
reference made to History of Mexico, 25, 33
respecting syphilis, 68
statistics of deaths from smallpox, 94, 95
- Clifford, Mr., of Lexington, Ky., image from tumulus near Nashville, Tenn., in museum of, 52
quoted by Caleb Atwater respecting the coverings of mummies, 5
- Clifton, Perry Co., Tenn., image from mound near, 131
- Clothing of the deceased Mexicans, 25
- Cockrill's Spring, near Nashville, Tenn., Indian burying-ground at, 8
- Coffins, stone, from mounds near Franklin, Tenn., 57
in saltpetre cave in Warren County, Kentucky, 5
used by ancient race of Tennessee, 7
sounding for the, in stone graves in Tennessee, 9
use of, a distinction of ancient race in Tennessee, 34
wooden, in mound at Stone Fort, near Manchester, Tenn., 102
- Coins from Tennessee, 140
- Colohis, near Pontus, customs of inhabitants of, 16
21 September, 1876.
- Collins River, Tenn., remains on, 104
- Color of skin of body found in limestone cavern in Kentucky, 5
- Combahee River, South Carolina, 104
- Compression, artificial, of crania from mound opposite Nashville, Tenn., 48, 49, 54
of cranium, custom of, 119, 121, 123
- Cone of hæmatite from Cumberland Valley, Tenn., 141, fig. 81
- Coosa, numerous population in, 105
- Copper axes found in Peruvian graves, 30
crosses found in graves in Tennessee, 35, 137
or plates in grave near Franklin, Tenn., 59
mask found in mound near Franklin, Tenn., 45
ornaments found in mounds in Tennessee, 45, 136, fig. 10
from graveyard on farm of Col. W. D. Gale, near Nashville, Tenn., 8
- Copperas Cave, West Tennessee, bones found in, 1
- Cordillères, Vues des, reference made to, 29
- Cordova, Gonzales Fernandez de, soldiers of, spread syphilis, 68
- Coroados of Brazil, burial customs of the, 33
- Cortez describes burial customs of Mexicans, 28
- Cowpox in Valladolid and in Alesco, near La Puebla, 96
- Coya Mama Oello, corpse of, seen by Garcilasso, 29
- Craighead, Mr., image found near residence of, 133
- Crania Americana, Dr. Morton's, 32, 33, 47
effects of pressure upon, at different ages, 48, 49, 54
found by Mr. Lane, doubtless belonged to children, 11
in small graves prove to be those of children, 9, 13
from graves on Mr. Dixon's farm on White Creek Road, Tenn., 54
from mound near Brentwood, Tenn., peculiarities of, 38
from outer circle of coffins in mound opposite Nashville, Tenn., 46, 47, figs. 13, 14
from stone graves at Oldtown, Tenn., 84, 85, 86
from tumuli at Kertsch in the Crimea, Dr. Rathke on, 118
measurements of, from stone graves and mounds of Tennessee, 110
of Kentucky and Tennessee stone-grave race resemble those of Inca Peruvians and Toltecs of Mexico, 72
of skeletons from mound opposite Nashville, Tenn., 44
resemblance of, of aborigines of Tennessee, to those of the Natchez, Toltecs, and Peruvians, 120, 121
remarks on and comparison of, 146
- Craniograph, description of, 112, fig. 63
- Creeks, burial customs of the, 16, 33
- Crimea, Dr. Rathke on crania from tumuli at Kertsch in the, 118
- Cross carved in shell ornament from stone grave near Nashville, Tenn., 77
in mounds at Chillicothe, Ohio, 77
stones forming, revered by Mexicans at time of Spanish conquest, 77
in temples of Anahuac, 78
use of, among nations of remote antiquity, 77
- Crosses found in mounds and graves, 77
of copper from grave in earthwork near Franklin, Tenn., 59, 137, fig. 35
in graves in Tennessee, 35
- Crows, smallpox ravages among, 97
- Cuba, customs of ancient inhabitants of, 122
- Cuitlahuac died of smallpox, 94, 95
- Cumberland River, above Nashville, remains along, 104
cave, 22 miles above Cairo, on, 3
flagon in open temple on Caney Fork of, 134
graves along bank of, 48, 49
mounds on banks of, 36
stone idols found in the valley of the, 129, 133
Valley, celts from, 142
cranium from mound in, 110, 111

- Cumberland Valley, pipes found in, 75
 Cup, drinking, from grave near Brentwood, Tenn., 41, fig. 3
 from stone grave in valley of Cumberland River, Tenn., 51
 Cushman, Elder, on pestilence among Indians, 91
 Cutifachiqui, gentleman of Elvas on depopulation of, 90, 91
 pearls found by Spaniards in grave in province of, 14
 Cuzco, royal mummies found at, 29
- DAUBENTON on the foramen magnum, 116, 117
 Davis, Francis, reference made to China, 137
 Squier and, mention stone work near Manchester, Tenn., 100
 Dead, mounds for burning the, 36
 Death of a Mexican king, ceremonies at the, 27
 De Azara, reference made to Voyage dans l'Amérique, 33
 De Atyllon visited South Carolina, 104
 Deities of aborigines, 106
 Delawares, burial customs of the, 34
 Dermes, Capt., reported plague along the Atlantic, 91
 De Soto, expedition of, to Florida, 105
 invasion of, burial customs of southern Indians at time of the, 13
 noticed Indians in the south wear feather mantles, 2
 recorded history of John Ortiz, 13
 Destruction of nations, 99
 of aboriginal remains, 82
 of entire population of primitive inhabitants of Kentucky and Tennessee, 88
 of the Adirondacks, 152
 Dickinson's Turnpike, Tenn., stone graves on, 8
 Disk, stone, from ancient work near Franklin, Tenn., 74, 75, fig. 37
 from Valley of the Cumberland, 51, fig. 19; 143, fig. 81
 of clay from stone grave, Nashville, 50, figs. 17, 18
 Discoidal stone from ancient work near Franklin, Tenn., 74, fig. 36
 Diseases among aborigines of America, 89-99
 in Tropics, Humboldt on, 94, 96
 of West Indies, Sir Hans Sloane, M.D., on Natural History of, 68
 Ditch inclosing mounds on north bank of the Holston, Tenn., 4
 of stone fort near Manchester, Tenn., 101
 of work on West Harpeth River, Tenn., 80
 Ditches probably inclosed consecrated ground, 4
 recorded by De Soto, 105
 Dixon, Mr., crania from graves on farm of, 54
 stone graves near Nashville, Tenn., on farm of, 53
 Dobrizhoffer on burial customs of the Patagonian tribes, 33
 Dodinæus, respecting syphilis, 68
 Doe-skin employed as shroud of human remains from cave in Warren County, Tenn., 2
 Dog Creek, Tenn., aboriginal remains at mouth of, 104
 Duck River, burying-grounds along, 8
 fortification on, 100
 mounds on banks of, 36
 pipes found in, 75
 Dunlap, R. E., on inclosure near Paris, Tenn., 131
 John W., certifies as to inclosure near Paris, Tenn., 131
 Dupaix on antiquity of Palenque ruins, 77
 Du Pratz, information of the extent and power of the Natchez, 125, 126, 127
 on compression of skull among Natchez, 121
 reference made to his History of Louisiana, 141, 145
- EARLE, Mr., examined mounds in Nashville, Tenn., 51
 Earthenware vessels from Tennessee, 144, 145
 deposited with skeletons from burial-ground near Carthage, Tenn., 3
 Earthenware vessels in octagonal grave in mound of earthwork near Franklin, Tenn., 59
 Earthworks, ancient, near Hickman, Tenn., 63
 ancient, at Oldtown, Tenn., 82, fig. 47
 fortifications, and mounds in Tennessee, 36-55, Chapter III.
 on Big Harpeth River, Tenn., 56-78, Chapter IV., fig. 23
 on plantation of Gen. de Graffenreid in Tennessee, near Franklin, 8
 on West Harpeth and Big Harpeth Rivers, Tenn., 79-99, fig. 46
 remains of ancient, around mound near Brentwood, Tenn., 37
 surrounding mounds, 36
 traces of ancient, on Mr. Dixon's farm, on White Creek Road, Tenn., 54
 Eastand, Capt., ploughed up flint glass within stone fort near Manchester, Tenn., 101
 Edwards, Bryan, History of the West Indies, 34, 121
 on excessive sensuality of West Indian aborigines, 67
 Egypt, cross was the symbol of matter in, 77
 Egyptian vase, image found in mound opposite Nashville, Tenn., resembles, 44
 Egyptians consecrated the phallus, 136
 originated burial in box, or coffin, 34
 Elk River, Tenn., burying-grounds along, 8
 mounds on banks of, 36
 Elvas, gentleman of, on depopulation of town of Cutifachiqui, 90
 recorded history of John Ortiz, 13
 Embalming of body of Zapotec lords, 28
 Embankment, circular, on West Harpeth River, Tenn., 79
 on plantation of General M. F. de Graffenreid, near Franklin, Tenn., 56
 Emigration a cause of abandonment by primitive inhabitants of Kentucky and Tennessee of aboriginal remains, 88
 England, burial practised by ancient inhabitants of, 34
 Entrenchments recorded by De Soto, 105
 Erie, skeletons of small people found in ancient mounds near, 10
 Ethiopian crania, measurements of, 47
 skull, internal capacity of, 114
 Ethnological Society, reference made to Trans. of Amer., 12, 136
 European stone celts, purpose of, 58
 Evans, Lewis, on the Six Nations, 154
 Excavation of ancient Indian pyramid of Cholula, Mexico, 28, 29
 within inclosure on West Harpeth River, Tenn., 80
- FALKNER'S Patagonia, reference made to, 33
 Fan in hand of mummy from cave in Warren County, Tenn., 2
 Fayette Co., Mississippi, stone vessel from mound on Tallahatchie River, 144
 Feather mantles, 2
 Feathers inclosed in coffin in a saltpetre cave, Warren Co., Ky., 5
 Female chief of the Natchez, ceremonies at death of, Father Charlevoix's account of, 20, 21
 Fire, traces of, in mounds of earthwork near Franklin, Tenn., 57
 Fishes painted on limestone bluff forming south bank of the Holston, Tenn., 4
 Flagon from Caney Fork of Cumberland, Tenn., 134
 Flatheads of Columbia River compress their cranium, 123
 Fleshing instrument from stone grave within ancient work near Franklin, Tenn., 75
 Flint chisel from mound in North Nashville, Tenn., 50
 splinters of, in fields near mounds on Cumberland River, Tenn., 49
 Florida, Indians in, wore feather mantles at the time of De Soto's march through the south, 2

- Florida, burial customs of, at time of John Ortiz, 13
reference made to Roman's History of, 33
temple in, found by Narvaez, in which were chests
containing a body each, 14
- Floyd's Lick, Jackson Co., Tenn., ancient fortification,
mounds, and graves at, 12
- Foramen magnum, observations on, 116
- Forest within embankment on West Harpeth River,
Tenn., 79
- Forked-deer River, Tenn., remains on, 104
- Fort, stone, near Manchester, Tenn., 37
- Fortification along Big Harpeth River, Tenn., below
Oldtown, Tenn., at Mound Bottom, Tenn., and on
Osborn's Place, Tenn., 36
ancient, mounds, and graves at Floyd's Lick, Jack-
son Co., Tenn., 12
ancient, near Franklin, Tenn., 8
in Coffee Co., Tenn., 100
mounds, and earthworks in Tennessee, 36-55
mounds in neighborhood of, which mark the sites
of ancient towns, 36
of Mandan towns, 38, 39
recorded by De Soto, 105
- Foster, Mr., reference made to his obs. during voyage
around the world, 33
respecting syphilis, 68
- Fracture in skull found in limestone cavern in Ken-
tucky, 5
- France, burial practised by ancient inhabitants of, 34
- Franklin Pike, near Nashville, Tenn., pyramidal mounds
near, 52
- Franklin, Tenn., ancient fortifications near, 36
copper mask found in mound near, 45
cranium from stone grave near, 111
stone graves and earthwork on plantation of Gen.
de Graffenreid, near, 8, 56
- Freeman, Dr., removed cranium from stone grave at
Oldtown, Tenn., 85
- French Broad River, Tenn., mounds on bank of, 36
mounds five miles above mouth of
the, 4
remains on, 104
- French Lick Creek, Tenn., mound near, 51
- Funeral of Mexican king, ceremonies at the, 27
rites and sepulchres of the Mexicans, description of,
by Clavigero, 25
- GALE, Col. W. D., copper ornaments found in grave at
residence of, 45
graves opened on farm of, 3 miles from Nash-
ville, Tenn., 8
image from grave near residence of, 41
- Galinazo, looking-glasses of, found in Peruvian tombs,
80
- Garcilasso describes corpses of the Incas, 29
on construction of Peruvian tombs, 30
on royal mummies found at Cuzco, 29
- Gardenhire, Dr. E. L., on mounds in Cherry Creek
Valley and Indian graves near Sparta, White County,
Tenn., 12
- Gateway of Stone Fort near Manchester, Tenn., 37
- Gardenio, Bernardus de, respecting syphilis, 69
- Gili, Missionary, describes burial customs, 32
- Girdle of silver around waist of female body from cave
near Carthage, Tenn., 4
- Glass. *See* Eastand.
- Goat Island, Niagara Falls, excavations at, 34
- Gold found in graves of Mexicans, 28
- Golgothas of the Mandans, 24
- Gomara mentions crosses in Yucatan, 78
on Mexican burial customs, 25
- Gookin, Historical Collections, references made to, 91
on pestilence among Indians, 91
- Graffenreid, Gen. de. *See* Franklin.
- Grant, Dr. J. T., explored cave near Pulaski, Tenn.,
108
- Graves at Floyd's Lick, Jackson Co., Tenn., 12
along bank of Cumberland River, Tenn., 48, 49
- Graves around octagonal grave in earthwork near Frank-
lin, Tenn., 59, 60
near Brentwood, Tenn., 41
on hill upon which Col. Overton's residence in Ten-
nessee, 39
small, square, in Tennessee, 9, 13
stone, at Sycamore, Cheatham Co., Tenn., 55
in burial mounds, 37
in mound near Brentwood, Tenn., 37
in Tennessee, 8
in vicinity of mound on Franklin Pike, near
Nashville, Tenn., 52
with human remains found in Tennessee, 1
within work at Oldtown, Tenn., 82
- Graveyard, ancient, on White Creek Road, Tenn., 53
- Graveyards, extensive, in Kentucky and Tennessee, 7
- Greeks buried their dead in boxes, 34
- Grenada, burial customs of Indians of New, 33
- Guaca de Toledo visited by Humboldt, 31
- Guaqueros. *See* Chica.
- Guaxaca, deaths from smallpox in, 95
- Guiana, customs of some hordes in, 31
- HÆMATEMESES in the tropics, 90
- Hair of body from limestone cavern in Kentucky, 5
of mummies from cave in Warren County, Tenn., 2
- Hammers from Oldtown, Tenn., 87
- Hartsfield, Solomon, image found in Henry Co., Tenn.,
on land of, 130
ploughed up image near Paris, Tenn., 131
- Hatchet, stone, found around mounds on Cumberland
River, Tenn., 49
found in mound opposite Nashville, Tenn., 46
from ancient work near Franklin, Tenn., 75 fig. 38
from fields in valley of Duck River, Tenn., 103
from grave at Nashville, Tenn., 7
from Oldtown, Tenn., 87
iron, from mound on Franklin Pike, near Nashville,
Tenn., 52
- Hatchy River, Tenn., remains on, 104
- Havana, vomito in, 94
- Haysborough, Tenn., graveyard at, 8
- Haywood, account of ancient pigmies, 10, 13
describes fortification near Manchester, Tenn., 100
on images from Sumner and Roanoke Counties,
Tenn., 133
relates finding human bones in caves, 1, 3, 4, 5, 10
respecting mound in Nashville, Tenn., 51
History of Shawnees, 154
on the lingam of India, 134
on rock painting, 138
reference made to, *Aboriginal History of Tennessee*,
35, 77, 140, 142
- Hazard's Collections, reference made to, 91
- Hazolteotl, dress of an executed Mexican adulterer, 25
- Head-dresses of images of Tennessee stone-grave race
resemble those of Chinese and Mexicans, 72
- Head-flattening. *See* Compression.
- Heads of pottery from Tennessee, 63, figs. 31, 32
- Herrera mentions ancient monuments near Zenn, in
Venezuela, 33
on altering of skull by ancient inhabitants of His-
paniola, Cuba, Jamaica, and Porto Rico, 122
on burial customs of Mountain Indians, 33
- Hiawasee River, Tenn., mounds on banks of, 36
ancient town site above mouth of, 131
- Hickman. *See* Kentucky.
- Hieronymus Fracastorius, reference made to, 70
- Hillary, Dr., on yellow fever in Barbadoes, 93, 94
- Hippocrates mentioned macrocephali, 118
- Hispaniola, customs of inhabitants of, 122
- Hoe from Cumberland Valley, 140, fig. 79
- Holston River, Tenn., mounds on north bank of the, 4
near Strawberry Plains, Knox Co., Tenn., idol
found in cave on, 128
- Hood, General, stone graves exposed during the war by, 52
- Howard, Mr., Remains of aboriginal town on land of,
134

- Huaca**, tomb of Peruvians called, 30
Huayna Capac, corpse of, seen by Garcilasso, 29
Hughes, J. R., circular embankment on his land on West Harpeth River, Tenn., 79, 86
Huitzilopochtli, mask put on face of his image, in case of Mexican king's sickness, 26
 reference to in Mexican burial, 25
Humboldt, A. von, on cavern and mummies of Ataruipi, 31, 32
 on diseases of tropics, 94, 96
 reference made to political essay on kingdom of New Spain by, 28
 remarks on Matlazahuatl, 89, 90
 visited Guaca de Toledo, 31
 visited ruins of city of Chimu, Peru, 31
Hungary, burial customs in, 118
Huns, burial customs among the, 118
Hunter, John D., on syphilis among the Indians, 71
Hurons, burial customs of the, 14
Hutchinson on pestilence among Indians, 91
- Idioms of Nootka Columbians**, 124
Idols found in the valley of the Cumberland River in Tennessee, 129, 133
 from pyramid of Cholula, near Mexico, 132
 from stone grave at Boiling Springs, Williamson Co., Tenn., 132
Huitzilopochtli and Tezoatlipoca, masks put on faces of, in case of Mexican king's sickness, 27
 of basalt found in ancient pyramid of Cholula, Mexico, 29
 small black, from graveyard on farm of Col. W. D. Gale, near Nashville, Tennessee, 8
Illinois, burial customs among the, described by Mr. T. Gale, 15
 rock paintings in, 138
Image found in mound near Nashville, Tenn., resembles that found by Prof. Pallas in Russia, 52
 from grave near residence of Col. W. D. Gale, near Nashville, Tenn., 41, fig. 5
 from Henry Co., Tenn., 130
 from mound at Mayfield Station, Tenn., 133
 from mound near Clifton, Perry Co., Tenn., 131
 from mound on Cherry Creek, White Co., Tenn., 134
 from stone grave near Brentwood, Tenn., 41, fig. 4
 from tumulus near Nashville, Tenn., 52
 in child grave in earthwork near Franklin, Tenn., 61
 ploughed up by Mr. Hartsfield near Paris, Tenn., 131
 small black, exhumed from grave in mound opposite Nashville, Tenn., 44, fig. 9
Images, clay and stone, from the mounds and stone graves in Tennessee, 4, 128-136, figs. 66-72
 from ancient work near Franklin, Tenn., 76, figs. 44, 45
 from cave near Pulaski, Tenn., 108, fig. 61
 from Smith County Tenn., 135
 from Sumner and Roanoke Counties, Tenn., 133
Implements buried with the dead in Tennessee, 8
 found near stone fort, near Manchester, Tenn., 101, 102
 from Big Harpeth and Cumberland River Valleys, 143, 145
 from rock mound near Pulaski, Tenn., 108
 of European manufacture not found in mounds on Cumberland River, Tenn., 50
 of stone found in alluvial plain around the burying-ground opposite Nashville, Tenn., 7
 stone, from Tennessee, 141
 stone, in fields near mounds on Cumberland River, Tenn., 49
Inca Peruvians, peculiarities of skulls of, 119
 resemblance between crania of Kentucky and Tennessee stone grave race and those of, 72
Incas, civilization of the, essay by Prescott, 29
 corpses of, described by Garcilasso, 29, 33
 sacrifices on occasion of death of the, 30
Inca-stone, looking-glasses of, found in Peruvian tombs, 30
India, Haywood on the lingam of, 134
Indian grave-yard, Nashville, Tenn., built over, 7
 graves in vicinity of Sparta, Tenn., Dr. Jas. H. Snodgrass on, 12, 13
 of New Granada, mummy of a Muysca, 32
Indians, burial customs of southern, at time of De Soto's invasion, 13
 of California, smallpox among, 96
 of Canada and New England, pests among, 90
 of New Grenada, burial customs of, 33
 of North America, Dr. Rush's inquiry into the Natural History of Medicine among the, 67
 of North Carolina, John Lawson, account of burial customs of, 22, 23
 pursuits of, 104
 reference to Catlin's North American, 24
Ingram's Manual, reference made to, 34
Inoculation, 96
Irish, cross was symbol of knowledge among, 77
Iroquois, built fortifications opposing Champlain, 107
 burial customs of the, 14, 15
 wars of the, 151
Ives relates burial custom of ancient Peruvians, 16
- JACATEUCTLI**, the dress of deceased Mexican merchant, 25
Jackson Co., Tenn., ancient fortifications, mounds, and graves near Floyd's Lick, 12
Jamaica, customs of ancient inhabitants of, 122
James's Expedition, reference made to, 34
Jasper, fragments, in grave at earthwork near Franklin, Tenn., 61
 spear-head from valley of Cumberland River, Tenn., 140
Jenner's discovery of protective power of cowpox, 96, 97
Jewels found in Peruvian Tombs, 31
Jewett, Maj. John F., near Livingston, Overton County, Tenn., deposit of human bones near residence of, 12
Joutel describes burial customs of Chouanous, 14
- KANSAS**, burial customs of the, 17
Kappas, burial customs of the, 17
Katahbas, ravages of smallpox among, 97
Keating's Expedition, reference made to, 34
Kentucky, abandonment of aboriginal remains by primitive inhabitants, 88
 body found in cave near Lexington, 5
 body found in limestone cavern in, 4
 body found in Mammoth Cave, 33
 body found in saltpetre cave of, 5
 location in, of stone graves containing human remains, 1
 pipe and vase from mound near Hickman, 63, 138
 works near Hickman, 37
Kertsch in the Crimea, Dr. Rathke on crania from tumuli at, 118
King of Santee, John Lawson's visit to the, 2
Kirchner, Father, on phallus worship in America, 136
Knife, scalping, from valley of Cumberland River, Tenn., 139
Knisteneaux, smallpox among the, 98
Kwappas. See Kappas.
- LABAT, Father**, on yellow fever in Brazil, 93
Laftau, C. P., reference made to his *Mœurs des Sauvages Amériquains*, 14, 19
Lahontan, Baron, extent of the Mississippi and Missouri Rivers, 149
Lake Erie, Skeletons of small people found in ancient mounds near, 10
Lane, Turner, account of small skeletons found on his farm, 10
 stone from farm of, in White Co., Tenn., 134
Languages of American aborigines, 150

- Landouinière, Admiral Renaud de, visited Florida, 143
 accompanied by Jacob le Moyne in his
 second voyage to Florida, 14
- Las Casas on gold found in Peruvian graves, 29
- Lawson, John, New Voyage to Carolina, 2
 on burial custom of the Santee Indians, 21, 22
 on compression of cranium among the Wax-
 haws, 122
 on ravages of smallpox, 97
 reference made to, 70
- Le Bossu, reference made to his Travels in Louisiana, 33
- Le Moyne, Jacob, describes burial customs, 14
- Le Moyne made drawings of implements of Florida In-
 dians, 143
- Lenapes, burial customs of the, 34
- Le Petit, Father, account of rites performed by the
 Natchez, 19, 20
- Lewis's and Clarke's Expedition, reference made to, 34
- Lexington. *See* Kentucky.
- Lick Branch, Tenn., Indian graveyard along the valley
 of, 7
 pure silver obtained from stone grave near,
 45
- Limestone cavern in Kentucky, body found in, 4
- Lingam of India, Haywood on the, 134
- Little Tennessee River, mounds on banks of, 36
- Livingston, Overton Co., Tenn., deposit of human bones
 near, 12
- Llorente, reference made to works edited by, 29
- Looking-glasses of the Inca-stone and of galinazo found
 in Peruvian tombs, 30
- Louisiana, reference made to Le Bossu's Travels in, 33
- McCULLOUGH deposited phallus from Chillicothe in Mu-
 seum of Philosophical Society, 135
- McGavoc, Mr., cemetery near Nashville, Tenn., 11
 mound standing on property of, in Nashville, Tenn.,
 51
- McLaughlin, Dr., on mortality among Indians, 98
- McMinnville, Tenn., cave containing human bones found
 near, 2
- Macrocephali mentioned by Hippocrates, 118
- McWhorter, S. H., on image found in Henry Co., Tenn.,
 130
- Madoc, Prince, supposed to have settled in the Missis-
 sippi Valley, 38
- Magee, John H., certifies as to inclosure near Paris,
 Tenn., 131
- Magnolia, reference made to, 91
- Maine explored by Champlain, 107
- Malarial fevers destroyed American aborigines, 89
- Malay crania, measurements of, 47
 skulls, internal capacity of, 114
- Mama Oello, Coya, corpse of, seen by Garcilasso, 29
- Runta, corpse of, seen by Garcilasso, 29
- Mammoth Cave. *See* Kentucky.
- Man painted on limestone bluff forming south bank of
 the Holston, Tenn., 4
- Mankind, origin and identity of the races of, 119
- Manchester, Tenn., ancient work near, 37
 fortification near, 100
 stone heaps near, 55
- Mandan towns, fortifications of, 38, 39
- Mandans are said to have derived their knowledge of
 fortifications from the Welsh, 38
 burial customs of, 23, 24, 34
 fortifications on Muskingum and Ohio Rivers
 ascribed by Catlin to the, 38
 preserved arts and customs of mound builders of
 Mississippi Valley, 39
 smallpox ravages among, 97
 wigwams of, 38
- Mantles of feathers worn by different races, 2-4
- Maps of ancient America, 151
- Marble cross, Peruvians are said to have had a white,
 77
- Marquette, Father, on discoveries and explorations in
 America, 148
- Marquette, Father, on rock paintings in Missouri and
 Illinois, 138
- Martinico, Brazil, yellow fever at, 93
- Martius and Spix, travels in Brazil, 33
- Mask of copper found in mound near Franklin, Tenn.,
 45
 put on idols Huitzilopochtli and Tezcatlipoca in
 case of Mexican king's sickness, 26
- Massachusetts, reduction of Indians of, from pestilence,
 91
- Mather, Lieut., attitude of skeletons from mounds in
 Wisconsin, 34
- Matlazahuatl destroyed American aborigines, 89
- Mats of bark and feathers enshroud the dead, 2-4
- Maury's Co., Tenn., Parish's Mound in, 107
- Mayer, Brantz, reference made to Mexico by, 28
- Mayfield Station, Tenn., image from mound at, 133
- Medal found in mound on French Lick Creek, near
 Nashville, Tenn., 52
- Medicine among Indians of North America, Dr. Rush,
 Inquiry into the Natural History of, 67
 pole in use by Mandans, 24
- Meigs, Dr. J. Aitken, measurements of skulls by, 114
- Memotombita, idols discovered by Mr. Squier at, 136
- Meridia, cross in, 78
- Metal found in mound on French Lick Creek, near Nash-
 ville, Tenn., 52
- Mexican and Nootka Columbian languages, resemblance
 of, 125
 burial customs, 28, 33
 dead received pieces of paper representing passports
 against dangers in their final journey, 25, 26
 kings, ashes of, deposited in Chapoltepec, according
 to Solis, 27
 sculpture, image found in mound opposite Nashville,
 Tenn., resembles, 44
- Mexicans and Chinese, ornaments and head-dresses of
 Tennessee stone-grave race resemble those of, 72
- Clavigero's description of the funeral rites and
 sepulchres of the, 25
 peculiarities of skulls of, 119
- Peruvians, and Mongol Tartars, similarity of burial
 customs of, 31
- Peruvians, and Natchez, resemblance of burial cus-
 toms of the, 19
- reverenced stones cut in form of cross, according to
 the Spaniards, 77
- vase found in mound opposite Nashville, Tenn., re-
 sembles those of, 46
- wore feather mantles at time of Spanish conquest, 2
- Mexico abandoned by Toltecs from pestilence, 89
- Clavigero's History of, 25
 deaths from smallpox in, 95, 96
 reference made to, by Brantz Mayer, 28
 reference made to Clavigero's History of, 27, 28, 33
 smallpox in, 94
 stone idol from pyramid at Cholula, near, 132
- Mica, fragments of, from ancient work near Franklin,
 Tenn., 76
- Michoacan, deaths from smallpox in, 95
- Millicen, Amos, image found in Henry Co., Tenn., on
 land of, 130
- Minetarees, fortification of towns of, 39
 smallpox ravages among, 97
- Mississippi River, maps of the, 149
- Mississippi, stone vessel from mound on Tallahatchie
 River, Fayette Co., 144
 Valley, reference made to John Gilmary Shea's, 138
 densely populated in ancient times, 1
 remains of the, are referred to various aborigi-
 nal nations, 39
- Missouri, Mr. Nuttal on the burial customs of the Osages
 of, 33
 rock paintings in, 138
 small stone graves near St. Louis, 10
 Valley, smallpox ravages in, 97
- Mitchell, Dr., on the Six Nations, 154
- Miztecs, burial customs of the, 28
- Miztica Baxa, cross drawn from cave of, 78

- Moluches, burial customs of the, 33
Mongol Tartars, Peruvians, and Mexicans, similarity of burial customs of, 31
Mongolian crania, measurements of, 47, 114
Monro, Alexander, reference made to observations on the different kinds of smallpox by, 95
Montezuma's successor died of smallpox, 94, 95
Moon pyramid of Teotihuacan, Mexico, 28
 painted on limestone bluff forming south bank of the Holston, Tenn., 4
 venerated by aborigines, 106
Morgan, Lewis H., on burial customs among the Iroquois, 15
Mortality among Indians, 98, 99
Mortar from ancient work near Franklin, Tenn., 74
 from stone grave in valley of Cumberland River, Tenn., 51
Motolinia (Father Torribrio) on smallpox in Mexico, 90
Morton, Dr., examined bodies of Peruvians, 33
 gives evidence of the unity of race and species in the American savage nations, 32
 gives measurements of crania in his *Crania Americana*, 32, 47, 112, 113
 observations on burial customs, 32, 33, 34
Mound-builders of Tennessee, compressed the skull, 119, 121
 connection of, with distant southern nations, 84
Mound, at Mayfield Station, Tenn., image from, 133
 Bottom, Tenn., rock paintings in, 138
 celt from, 142
 combination of works at, 36
 burial, on Mr. Dixon's farm on White Creek Road, Tenn., 55
 burial or sacrificial, near inclosure on West Harpeth River, Tenn., 60
 in Cherry Creek Valley, near Sparta, Tenn., Dr. E. L. Gardenhire on, 12
 inclosed by embankment on bank of West Harpeth River, Tenn., 79
 in earthwork near Franklin, Tenn., 57
 near Clifton, Perry County, Tenn., image from, 131
 near Hickman, Kentucky, pipe from, 138
 Parish's, in Maury Co., Tenn., 107
 pyramidal, near Franklin, Tenn., 73
 in ancient work near Franklin, Tenn., 8
 on Franklin Pike, near Nashville, Tenn., 52
Mounds, ancient, near Lake Erie, skeletons of small people found in, 10
 apparent royal burial, contain but a few small graves, 9
 at Floyd's Lick, Jackson Co., Tenn., 12
 at Sycamore, Tenn., 55
 chain of four, surrounded by a burying-ground, opposite Nashville, on bank of Cumberland River, 7
 charcoal, ashes, paintings, and caves, connection between, 4
 connected with earthwork near Franklin, Tenn., 56
 containing stone images, 4
 dimensions of, 57
 five miles above mouth of the French Broad, Tenn., on Holston River, 4
 found in same location with caves containing human remains, 1
 fortifications, and earthworks in Tennessee, 36-55
 hollow, on Cherry Creek, White Co., Tenn., 134
 of work at Oldtown, Tenn., 82
 of work in Henry Co., Tenn., 130
 sacrificial and burial, in Tennessee, 41-55
 small, conical, in ancient work near Franklin, Tenn., 8
 stone-grave burial, 37
 stone, of stone fort near Manchester, Tenn., 101
 surrounded by earthworks, 36
 within wall near Paris, Tenn., 131
 within wall opposite entrance of cemetery near Carthage, Tenn., 3
Mountain Indians, Herrera on burial customs of, 33
Mobilia, numerous population in, 105
Mummies and cavern of Ataruipe, Humboldt on, 31, 32
 coverings of, Caleb Atwater quotes Mr. Clifford respecting the, 5
 exhumed by Dr. Ruschenberger near Arica, 33
 from cave in Warren Co., Tenn., 2
 in caskets, discovery in the United States of, 32
 royal, found at Cuzco, 29
Mummy of a Muysca Indian of New Grenada, 32
Murfreesboro', Tenn., pipe from, 75, 138
Murphy, Dr. Thomas, introduced vaccine inoculation, 96
Muscogee, burial customs of the, 33
Muscogulges, burial customs of the, 17
Muskohgees, ravages of smallpox among, 97
Muscokes, burial customs of the, 16
Muskingum River, fortifications along the, ascribed by Catlin to the Mandans, 38
Muysca Indian of New Grenada, mummy of a, 32
NANANTS, burial customs of the, 34
Name of the ancient race, inquiry into the, 147
Nance, E. W., plan of stone fort near Manchester, Tenn., 100, 103
Narvaez, Pamphilo de, attempted to conquer Florida, 105
 found a temple in Florida in which were chests containing a body each, 14
 John Ortiz came to Florida with, 13
Nashville, Tenn., built over Indian graveyard, 7
 collection of aboriginal remains in State capitol at, 139
 cranium from burial mound opposite, 111
 idol found near, 133
Natchez are said to have reigned over the entire country in which mounds are being found—their extent and power, 125
 burial customs of the, 19, 107
 crania from mound opposite Nashville, Tenn., resemble that of the, 48
 flattening of cranium among, 121
 method employed by, in process of flattening the head, 124
 Peruvians, and Mexicans, resemblance of burial customs of the, 19
 ravages of smallpox among the, 97
 resemblance of crania of, to aborigines of Tennessee, to Toltecs, and to Peruvians, 120, 121
 rites performed by the, Father le Petit's account of the, 19, 20
Naumkeags, Salem, Mass. is the site of the old village of the, 34
Needle of polished bone from grave of child in earthwork near Franklin, Tenn., 61
New England tribes, burial customs of the, 34
 pests among the, 90, 91
New Grenada, burial customs of Indians of, 33
 mummy of a Muysca Indian of, 32
New Jersey, reference made to Smith's History of, 34
New Spain, A. von Humboldt's political essay on kingdom of, reference made to, 28
Niagara Falls, excavations at Goat Island, 34
Nicaragua, Mr. Squier noticed crosses in, 78
 reference made to Squier's, 136
Nitro obtained from caves in Tennessee during revolutionary war, 1
Nootka Columbian language resembles the Mexican, 125
 idioms of, 124
North Carolina, John Lawson's account of the burial customs of Indians of, 22, 23
 visited by John Verrazzani, 104
Nuttall locates place called Quigalta, 121
 on burial customs of the Osages of Missouri, 33
OBED'S River, Tenn., remains on, 104
Oblong mound in front of gateway of stone fort near Manchester, Tenn., 37
Obsidian, fragments of, from ancient work near Franklin, Tenn., 76

- Ocuca, Georgia, supplied servants to De Soto, 105
 Oello, Coya Mama, corpse of, seen by Garcilasso, 29
 Ohio, fortifications on the, ascribed by Catlin to the Mandans, 38
 cross found in mound at Chillicothe, 77
 Oldtown, Tenn., ancient earthworks at, 82
 celt from, 142
 combination of work near, 36
 crania from, 110, 111
 extensive collection of stone graves at, 8
 pipe from, 138
 Omahas, burial customs of the, 24, 34
 Oudegardo, Paul, corpses of Incas seen in the house of, by Garcilasso, 29
 on royal mummies found at Cuzco, 29
 Oriflamme, ship, landed at Brazil, where yellow fever prevailed, 93
 Orinoco, valley of the, burial customs of the Indians of the, 33
 Ornament, carved, of great beauty found on skeleton in mound opposite Nashville, Tenn., 42, 43, 45
 from rock mound near Pulaski, Tenn., 108
 shell, with carved cross in centre, from stone grave near Nashville, Tenn., 77
 shape of human countenance, from grave of child at foot of mound opposite Nashville, Tenn., 48
 Ornamentation of vases from graves in earthwork near Franklin, Tenn., 62
 Ornaments, shell, pearl, and copper, from Tennessee, 136
 buried with the dead in Tennessee, 8
 copper, from graveyard on farm of Col. W. D. Gale, near Nashville, Tenn., 8
 found in grave on Col. Overton's Hill, Tenn., 40
 of bodies buried around altar in mound opposite Nashville, Tenn., 42
 of images of Tennessee, stone-grave race resemble those of Chinese and Mexicans, 72
 wooden, coated with copper, found in graves in Tennessee, 45
 Oronoco, natives of, little accustomed to burn their dead, 32
 Ortiz, John, History of, recorded by Fernando de Soto, Luis Fernandez de Bimeda, The Gentleman of Elvas, and the Inca, Garcilasso de la Vega, 13
 testimony of, concerning burial custom in Florida, 13
 Oruro, epidemics at, 90
 Osage Indians flattened their heads, 122, 124, fig. 65
 Mr. Nuttall on the burial customs of the, 33
 Oshorn's Place, Tenn., combination of works on, 36
 Otaheite, burial customs of the people of, 16
 Overton Co., Tenn., deposit of human bones near residence of Maj. John F. Jewett, near Livingston, 12
 Overton, Col., aboriginal settlement occupied hill in Tennessee, upon which is residence of, 39
 cranium from stone grave at residence of, 111
 stone graves in Tennessee, on plantation of, 8
 Oviedo respecting syphilis, 68
 O-why-hee Island, king of, wore red-feathered cloak when seen by Capt. Cook, 2
- PAINT bowl from stone grave in valley of Cumberland River, Tenn., 51
 from grave in earthwork near Franklin, Tenn., 62, 63
 Paintings, apparent purpose of Indian, 4
 caves, mounds, charcoal, and ashes, connection between, 4
 Palenque, Mr. Stevens describes tablet from ruins of, 77
 Pallas, Prof., found an image in Russia resembling those of the mound-builders of Tenn., 52
 Pampas, burial customs of the, 33
 Panama inhabited by Caribs, 122
 Papantla, pyramids of, 120, 132
 Paper, pieces of, given to the Mexican dead, and representing passports against danger in their final journey, 25, 26
- Paraguas, burial customs of the, 33
 Paraguay, smallpox in, 96
 Parecas, burning of the dead among the, 32
 Paris, Tenn., image ploughed up by Mr. Hartsfield near, 131
 Parish's Mound in Maury Co., Tenn., 107
 Parker, Rev., on mortality among Indians, 98
 Passways of work on West Harpeth River, Tenn., 80
 over the earthworks near Franklin, Tenn., 57
 Patagonians, burial customs of the, 33
 Patagonia, reference made to Falkner's, 33
 Pavement of cave near Pulaski, Tenn., 8
 Pawnees, smallpox ravages among, 97
 Pearl ornaments from Tennessee, 136
 Pearls found by Spaniards in grave in province of Cuti-fachiqui, 14
 Pearson, Dr., has drawing of skeleton found in Salem, Mass., 34
 Peru, reference made to History of Conquest of, 29
 smallpox in, 96
 Peruvians are said to have had a cross of white marble, 77
 believed in resurrection, according to Prescott, 29
 bodies of, examined by Dr. Morton, 33
 burial customs of the, 29
 flattening of cranium among the, 121
 Ives relates burial customs of ancient, 16
 Mexicans, and Mongol Tartars, similarity of burial customs of, 31
 Mexicans, and Natchez, resemblance of burial customs of the, 19
 resemblance of crania of, to those of the aborigines of Tennessee, the Natchez, and Toltecs, 120, 121
 tombs of the, construction of, according to Garcilasso, 30
 vases found in mound opposite Nashville, Tenn., resemble those of, 46
 Pestilence, among the Toltecs, 90
 probable, among primitive inhabitants of Kentucky and Tennessee, 88
 Pestilences among aborigines of America, 89-99
 Pests among Indians of Canada and New England, 90
 Phallus consecrated by Egyptians, 136
 found at Chillicothe, Ohio, 135
 Pierced tablets from Pulaski, 108, fig. 62
 from Stone Fort, 103, fig. 59
 Pickett, History of Alabama, reference made to, 14
 Pigmies, ancient, Haywood's account of, 10, 13
 belief in existence of, opposed by Col. A. W. Putnam and others, 11, 13
 existence of, not established, 11, 13
 graves in Tennessee are undoubtedly those of children, 9, 13
 so-called, prove to be children, 39
 Piney River, Tenn., remains along, 104
 Pipes, deposited with skeletons from burial-ground near Carthage, Tenn., 3
 found near stone fort near Manchester, Tenn., 103, fig. 58
 from Tennessee, 138, 139, fig. 74
 from ancient work near Franklin, Tenn., 75, fig. 41
 from near Murfreesboro, Tenn., 76, fig. 42
 stone, from work at Oldtown, Tenn., 87, fig. 53
 Plagues, origin of American, 92
 Plates, copper, from grave in earthwork near Franklin, Tenn., 59
 Plummet of black magnetic iron from Tennessee, 141, fig. 80
 Ponce de Leon, testimony of, to the density of Indian population, 104
 Popayan, epidemics at, 90
 Population, large, of aborigines in Southern States, 105
 of Mississippi Valley dense in ancient times, 1
 Porto Rico, customs of ancient inhabitants of, 122
 Position in which ornaments were found in graves, 136
 of body found in limestone cavern in Kentucky, 5
 relative, of inner and outer circle of stone coffins in mounds opposite Nashville, Tenn., 46

- Pot, black, in grave of earthwork near Franklin, Tenn., 61, 62
- Potosi, epidemics at, 90
- Potowatomies, burial customs of the, 34
- Pots from within ancient work near Franklin Tenn., 74
- Pottery found in graves along bank of Cumberland River, Tenn., 48, 49, 64, fig. 33
- found in graves at Floyd's Lick, Tenn., 12
- found in mound on French Lick Creek, near Nashville, Tenn., 51
- found in Tennessee illustrates condition of former inhabitants, 1
- fragments from around sulphur spring, Nashville, Tenn., 7
- fragments found in alluvial plain around the burying-ground opposite Nashville, Tenn., 7
- fragments of, from fields in valley of Duck River, Tenn., 103
- fragments of, in fields around mounds on Cumberland River, Tenn., 49
- fragments throughout mound of work on West Harpeth River, Tenn., 80, 81
- from ancient work at Oldtown, Tenn., 82, 83, 84
- from graveyard on White Creek Road, Tenn., 53
- in mound at Oldtown, Tenn., 86
- pieces of, from graves in mound near Brentwood, Tenn., 38
- Powell's River, Tenn., remains on, 104
- Prayer, attitude of, by image from mound opposite Nashville, Tenn., 44
- Prescott on civilization of the Incas, 29
- Pressure, effects of, upon crania, 48, 49, 54, 114
- Priapus found at Chillicothe, Ohio, 105
- Prichard on the foramen magnum, 116, 117
- Primitive inhabitants abandoned aboriginal remains of Kentucky and Tennessee, 88
- Prince's Chron., reference made to, 91
- Pritchard, Dr., remarks upon the Flatheads, 125
- Pulaski, Giles Co., Tenn., burial cave on plantation of Mr. William Sheppard, near, 3
- remains near, 108
- Putnam, Col., took shell ornament with carved cross in centre from breast of skeleton in grave near Nashville, Tenn., 77
- opposed belief in existence of Pigmy race, 11
- Pyramid of Cholula, near Mexico, idol from, 132
- Indian, of Cholula, Mexico, 28
- Pyramids around the four faces of pyramids of sun and moon of Teotihuacan, Mexico, served as burying places, 28
- of Cholula, Teotihuacan, and Papantla, 120, 132
- truncated, on north bank of the Holston, Tenn., 4
- Pyramidal mounds, 36
- in ancient work near Franklin, Tenn., 8
- near Franklin, Tenn., 73
- mound within embankment on West Harpeth River, Tenn., 79
- sacrificial mounds of work at Oldtown, Tenn., 82
- QUEEN of Viracocha, corpse of, seen by Garcilasso, 29
- Quigatta, place called, located by Mr. Nuttall, 121
- Quinetzin, body of King, 33
- Quiogozon, the royal tomb of North Carolina Indians, 23
- Quito, Caciques of, were buried in the principal temple, 30
- RALE, Mr. T., on burial customs among the Illinois, 15
- Ramsay, Dr. J. G. M., History of the Shawnees, 154
- collection of antiquities of, 105
- Rathke, Dr., on crania from tumuli at Kertsch in the Crimea, 118
- Relics buried with the dead in Tennessee, 8
- exposed by caving of banks of Cumberland River, opposite Nashville, Tenn., 7
- found around Oldtown, Tenn., 86, 87
- found around sulphur spring, Nashville, Tenn., 7
- found in mound in North Nashville, Tenn., 50
- Relics found in vicinity of mound on Franklin Pike, near Nashville, Tenn., 52
- found near stonework near Manchester, Tenn., 101
- from ancient town site above mouth of Hiawassa River, Tenn., 131
- from cave near Pulaski, Tenn., 108
- from the mounds and stone graves in Tennessee, 128-145
- of interest found within ancient work near Franklin, Tenn., 73
- Religious ceremonies of aborigines at De Soto's time, 106
- customs, apparent, of aborigines of Tennessee, 135
- purpose, apparent, of mound on Franklin Pike, near Nashville, Tenn., 52
- Remains, aboriginal, near Pulaski, Giles Co., Tenn., 108
- collection of aboriginal, in State capitol at Nashville, Tenn., 139
- found in a copperas cave in Warren Co., Tenn., 1
- found in mound opposite Nashville, Tenn., on bank of Cumberland River, 42
- found in pyramid of Cholula, Mexico, 29
- of Mississippi Valley are referred to various aboriginal nations, 39
- Reservoir in centre of inclosure near Paris, Tenn., 131
- Resurrection believed in by Peruvians, according to Prescott, 29
- Rhodius, Apollonius, mentioned customs of inhabitants of Colchis, near Pontus, 16
- Riccareae, fortification of towns of, 39
- Rites, funeral, and sepulchres of the Mexicans, Clavigero, description of the, 25
- performed by the Natchez, Father le Petit's account of the, 19, 20
- Robertson, General, History of America, 69
- on Shawnees, 154
- William, on ravages of smallpox, 97
- Rochefort on origin of Caribs, 122
- Rock mound near Pulaski, Tenn., 108
- paintings, aboriginal, 137, 138
- Roman vase, image found in mound opposite Nashville, Tenn., resembles, 44
- Romans buried their dead in boxes, 34
- Romans, Captain Bernard, on customs of inhabitants of Colchis, near Pontus, mentioned by Apollonius Rhodius, 16
- on burial customs of Indians, 16, 17
- reference made to History of Florida, 33, 141
- Rush, Dr., Inquiry into the Natural History of Medicine among the Indians of North America, 67
- Ruschenberger, Dr., exhumed mummies near Arica, 33
- Rutherford's Creek, mound on junction of Carter's and, 107
- SACRIFICES, mounds for purpose of religious, 36
- on occasion of death of the Incas, 30
- on occasion of Mexican king's funeral, 27
- Sacrificial mounds, pyramidal, of work at Oldtown, Tenn., 82
- mound near inclosure on West Harpeth River, Tenn., 80
- vase in centre of mound opposite Nashville, Tenn., 42
- Salem, Mass., is the site of the old village of the Naumkeags, 34
- Saliceto, Gulielmus de, respecting syphilis, 69
- Saltpetre cave of Kentucky—bodies found in—small size of bodies found in—teeth of bodies found in, 5
- collecting earth for, 4
- Sanchez, Antonio Rikew, respecting syphilis, 68
- Santee Indians, John Lawson, account of burial customs of the, 21, 22
- John Lawson's visit to the king of the, 2
- Sarcophagi or stone coffins in sacrificial mound opposite Nashville, Tenn., 42
- Sarmiento on gold found in Peruvian graves, 29
- Savannah River, temple in Talmaco on, 106
- Scales, Mr., stone graves in Tennessee on plantation of, 8

- Scalping knife from valley of Cumberland River, Tenn., 139, fig. 75
- Schoolcraft on smallpox ravages, 97
- Seoseler, Dr., states that people practising compression of head are subject to apoplexy, 124
- Scotlaud, burial practised by ancient inhabitants of, 34
- Scouler, Dr., on idioms of Nootka Columbians, 124
- Soythians, ancient, little accustomed to burn their dead, 32
- Sea shells, carved, from graves in earthwork near Franklin, Tenn., 60, 61
- Senecas, burial customs among the—resided at Tonawanda and Cattaraugus, 15
- Sensuality of West Indian aborigines, Bryan Edwards on excessive, 67
- Sepulchres and funeral rites of Mexicans, Clavigero's description of the, 25
near Teotihuacan, Mexico, 27
of ancient Chichimecs, 28
- Servando, Dr., on smallpox in America, 95
- Sewees, ravages of smallpox among the, 97
- Shawanees, ravages of smallpox among the, 97
- Shawnees driven from Cumberland by the Cherokees and Chickasaws, 51
inhabited Kentucky and Tennessee, 147
- Shea, John Gilmary, notes on Shawnees, 149
reference made to Mississippi Valley, 138
- Sheldon, reference made to, in Archæol. Amer., 33
- Shell found in graves along bank of Cumberland River, Tenn., 48
from Pulaski, Tenn., 109, fig. 62
ornament with cross carved in centre from stone grave near Nashville, Tenn., 77
carved, of great beauty, found on skeleton in mound opposite Nashville, Tenn., 42, 43, 45
from Tennessee, 136
shape of human countenance, from grave of child at foot of mound opposite Nashville, Tenn., 48, fig. 15
with cross cut on it found in grave in Sparta, Tenn., 77
- Shells in fields around mounds on Cumberland River, Tenn., 49
sea, in graves in earthwork near Franklin, Tenn., 59, 60, fig. 29
used as ornaments of bodies found in mound opposite Nashville, Tenn., 42, 43, 45, figs. 6-8
- Sheppard, burial cave on plantation of Mr. William, near Pulaski, Giles Co., Tenn., 3
- Shrouds of bodies found in cave on Smith's Fork of Cumberland River, Tenn., 3
of body found in limestone cavern in Kentucky, 4
of human remains from cave in Warren Co., Tenn., 2
- Silex fragments, in grave at earthwork near Franklin, Tenn., 61
from fields in valley of Duck River, Tenn., 103
- Silver Bluff, temple in Talmaco, on Savannah River, 106
pure, obtained from stone grave near Lick Branch, Tenn., 45
- Sioux, burial customs among the, 15, 24
- Skeleton in coffin from mound at stone fort near Manchester, Tenn., 102
in octagonal stone grave in mound of earthwork near Franklin, Tenn., 58
- Skeletons discovered in burial-ground near fortification near Carthage, Tenn., 3
excavated at Salem, Mass., 34
exposed by caving of banks of Cumberland River opposite Nashville, Tenn., 7
from carefully constructed grave in mound opposite Nashville, Tenn., 44
from graves in earthwork near Franklin, Tenn., 62, 72, 73
from mound near Brentwood, Tenn., 37
without coffin near altar of mound opposite Nashville, Tenn., 45
- Skin, color of, of bodies found in cave on Smith's Fork of Cumberland River, Tenn., 3
of body found in limestone cavern in Kentucky, 5
22 September, 1876.
- Skipwith, Col. Peyton, obtains stone vessel from Mississippi, 145
- Skull from grave near Franklin, Tenn., 73
from graves on hill of Col. Overton's residence in Tennessee, 39, 40
from mound at stone fort near Manchester, Tenn., 102
from rock mound near Pulaski, Tenn., 109
misshaped, from grave of earthwork near Franklin, Tenn., 62
- Slavery destroyed American aborigines, 89
- Sloane, Sir Hans, M.D., Natural History of Diseases of West India Islands, 68
- Smallpox in America, 94
in Mexico, 90
- Smith County, Tenn., images from, 135
- Smith, History of New Jersey by, reference made to, 34
- Smith's Fork of Cumberland River, burial cave found on, 3
- Snodgrass, Dr. Jas. H., on Indian graves in vicinity of Sparta, Tenn., 12, 13
- Sømmering on the foramen magnum, 116, 117
- Solis, History of Conquest of Mexico, 27
- South American Indians, attachment of, to spot where bones of their fathers repose, 32
- South Carolina visited by De Ayllon, 104
- Spaniards found Mexicans reverencing stone cut in form of cross, 77
found pearls in grave in one of the chief towns of Cutifachiqui, 14
- Sparta, White Co., Tenn., burying-grounds at, 8
cave containing human bones found near, 2
Dr. E. L. Gardenhire on mound and Indian graves near, 12
Dr. Jas. H. Snodgrass on Indian graves in vicinity of, 12, 13
small skeleton discovered near, 10
stone from mound near, 134
vessels and ornament with cross painted on them found in grave in, 77
- Spear-heads from ancient work near Franklin, Tenn., 76, fig. 43
from fields in valley of Duck River, Tenn., 103
from Oldtown, Tenn., 87
jasper, from valley of Cumberland River, Tenn., 140, figs. 77, 78
- Spear-shaped implement from ancient graveyard on White Creek Road, Tenn., 53
- Spix and Martins, Travels in Brazil, 33
- Squier, E. G., discovered idols at Memotombita and Zapatero, 136
rectifies error respecting crosses mentioned by Bonturini, 78
reference made to, 136
- Squier and Davis mention stonework near Manchester, Tenn., 100
- Stars venerated by aborigines, 106
- St. Louis, Mo., small stone grave near, 10
- Stephens, John L., carvings from Central America, 136
describes tablet from ruins of Palenque, 77
Travels in Central America of, 77
Yucatan of, reference made to, 136
- Stone and clay images from mounds and stone graves in Tennessee, 128-136
casing around body in saltpetre cave in Warren Co., Ky., 5
coffins used by ancient race of Tennessee for burial of their dead, 7
cover of graves in Tennessee, 8
fort, 100, figs. 56, 57, 60
from farm of Turner Lane, in White Co., Tenn.—from Sparta, 134
graves around altar in burial mound near inclosure on West Harpeth River, Tenn., 81
construction of, 8
exposed by caving of banks of Cumberland River opposite Nashville, Tenn., 7
in Tennessee, 7-35
of work at Oldtown, Tenn., 83

- Stone graves, size and shape of, 9
 with human remains found in Tennessee, 1
 within work at Oldtown, Tenn., 82
 hatchets of hard silicious material, beautifully polished, obtained from graves in Nashville, Tenn., 7
 found around mounds on Cumberland River, Tenn., 49
 heaps near Manchester, Tenn., 55
 images, 4
 implements from ancient graveyard on White Creek Road, Tenn., 53, fig. 21
 found in alluvial plain around the burying-ground opposite Nashville, Tenn., 7
 found in Tennessee illustrate condition of former inhabitants, 1
 from Tennessee, 141
 from valley of Cumberland River, Tenn., 139
 in fields near mounds on Cumberland River, Tenn., 49
 mounds of stone fort near Manchester, Tenn., 101
 pipe from work at Oldtown, Tenn., 87
 River, Tenn., burying-grounds along, 8
 mounds on banks of, 36
 vessel from Mississippi, 144
 from Tennessee, 144, 145
- Strawberry Plains, Knox Co., Tenn., idol found in cave on Holston River, near, 128
- Sulphur spring, Nashville, Tenn., relics found around, 7
- Sun worshipped by aborigines, 106
 painted on limestone bluff forming south bank of the Holston, Tenn., 4
 pyramid of Teotihuacan, Mexico, 28
- Surinam inhabited by Caribs, 122
- Sword, stone, from octagonal grave in mound of earthwork near Franklin, Tenn., fig. 24
 dimensions of, 58
 superiority to other existing specimens, 58
- Sycamore, Cheatham Co., Tenn., stone graves at, 3, 55
- Syphilis, antiquity of, among Indians, 71
 destroyed American aborigines, 89
 traces of, in bones found in graves in Tennessee, 35
 from graves near Tennessee, 61, 65-73
 from mound on Cumberland River, Tenn., 49
 from stone graves at Oldtown, Tenn., 85
- TAR-HEIH of the Chinese, 137, fig. 73
- Tablet described by Mr. Stevens from the ruins of Palenque, 77
- Tallahatchie River, Fayette County, Mississippi, stone vessel from mound on, 144
- Talmaco, temple in, 106
- Taunta, Valescus de, respecting syphilis, 69
- Techichi, a domestic quadruped killed on occasion of Mexican funeral, 26, 27
- Teeth as evidence that small crania belong to children and not to pignies, 11, 13
 of body from limestone cavern in Kentucky, 5
- Temples close to Teotihuacan, Mexico, 27
 found in Florida by Narvaez, in which were chests containing a body each, 14
 in Talmaco, on Savannah River, near Silver Bluff, 106
 of aborigines, mounds probably the sites of, 36
 of Anahuac, cross in, 78
 terra-cotta heads from, 120
- Tennessee, abandonment of aboriginal remains by primitive inhabitants, 88
 Historical Society, implements at Museum of, 142
 Indians in, wore feather mantles at the time of De Soto's march through the south, 2
 location in, of stone graves containing human remains, 1
 River, mounds on banks of Big and Little, 36
 remains on, 104
 stone graves in, 8
 wigwags of aborigines of, 38
- Teotihuacan, Mexico, temples and sepulchres near, 27
 pyramids of, 120, 132
 sun and moon pyramid at, 28
- Tezcatzoncatl, habit of a deceased Mexican drunkard, 25
- Tezcatlipoca, mask put on face of idol in case of Mexican king's sickness, 26
- Thoma, W. A., plan of fortification near Manchester Tenn., 100
- Tlaloc, a drowned Mexican arrayed in the dress of, 25
- Tlascalala, smallpox in, 94
- Toledo, Garci Gutierrez de, discovered gold in Peruvian tomb, 31
 visited by Humboldt, 31
- Toltecs compressed the skull, 119
- Toltecs, account of the, 90
 abandoned Mexico from pestilence, 89
 flattening of cranium among, 121
 of Mexico, resemblance of crania of Kentucky and Tennessee stone-grave race and those of the, 72
 resemblance of crania of, to those of aborigines of Tennessee, of Peruvians, and Natchez, 120, 121
- Tomahawk, iron, from mound on Franklin Pike, near Nashville, Tenn., 52
- Tomb near Truxillo, gold found in, 29
 royal, or quiogozon, of the North Carolina Indians, 23
- Tombs, construction of Peruvian, according to Garcilasso, 30
- Tonacagueritl or tree of life mistaken for a cross, 78
- Tonawanda, Senecas resided at, 15
- Topiltzin, Chief of Toltecs, 90
- Torquemada on compression of skull, 119
 states loss of Indians from Matlazahuatl from smallpox, 90, 94
- Townsend, Mr., on method of flattening the head, 123
- Transact. Amer. Ethnolog. Society, reference made to, 12, 136
- Travels in Central America, Stephens, 77
- Troost, Dr. G., certifies as to inclosure near Paris, Tenn., 131
 describes idol inclosed in a large shell—found utensils, 135
 on attitude of skeletons from mounds in Tennessee, 34
 on Indian cemeteries, 11, 12
 on value of shells among the aborigines, 45
- Truxillo, gold found in tomb near, 29
- Tumuli in Guiana not to be met with, 32
 at Kertsch in the Crimea, Dr. Rathke on crania from, 118
- Tupac Yupanqui, corpse of, seen by Garcilasso, 29
- UCHERS, ravages of smallpox among, 97
- Ulloa, articles found in Huaca in presence of, 30
 describes fevers in the tropics, 90
- Utensils buried with the dead in Tennessee, 8
 found by Dr. Troost, 135
 found near stonework near Manchester, Tenn., 101
 from stone grave near Brentwood, Tenn., 41
 inclosed in coffin of body in saltpetre cave, Warren Co., Ky., 5
- VACCINE inoculation, 96
- Valladolid, smallpox in, 96
 cowpox in, 96
- Valmis, Don Antonio, found cowpox in Valladolid and in Alesco, near La Puebla, 96
- Vámbéry, Arminius, on burial customs of Turcomans, 118
- Vase found in ancient pyramid of Cholula, Mexico, 29
 from grave in earthwork near Franklin, Tenn., 59, 60, 61, 64, 65, figs. 26, 27
 from burial mound near Brentwood, Tenn., 41, fig. 3
 from grave on Mr. Dixon's farm, on White Creek Road, Tenn., 53, fig. 22
 painted, near female skeleton near altar in mound opposite Nashville, Tenn., 45, 46

- Vases, human-head-shaped, from mounds in Tennessee, 63
 found in mound in North Nashville, Tenn., 50
 from ancient work at Oldtown, Tenn., 82, 83, 84, figs. 48-52
 from graveyard on farm of Col. W. D. Gale, near Nashville, Tenn., 8
 from within ancient work near Franklin, Tenn., 74, figs. 34, 35
 of Egyptians and Romans, image found in mound opposite Nashville, Tenn., resembles, 44
 with crosses painted on them found in graves in Tennessee, 35
- Vega, de la, on compression of skull, 119
 recorded history of John Ortiz, 13
- Venezuela, ancient monuments near Zenu in, 33
- Vera Cruz, vomito in, 94
- Verrazzani, John, visited North Carolina, 104
- Vessels, earthen, found in graves on Col. Overton's hill, Tenn., 40, figs. 1, 2
 of earthenware deposited with skeletons from burial-ground near Carthage, Tenn., 3
 earthenware, in octagonal grave in earthwork near Franklin, Tenn., 59
 from grave in earthwork near Franklin, Tenn., 60
 from mound on Franklin Pike, near Nashville, Tenn., 52
 stone and earthenware, from Tennessee, 144, 145
 stone, from Mississippi, 144, fig. 85
 with cross painted on them found in grave in Sparta, Tenn., 77
- Vines, Richard, reported pestilence among the Indians, 91
- Viracocha, corpse of King, seen by Garcilasso, 29
- Vues des Cordillères, reference made to, 29
- WALL near Paris, Tenn., 131
 of ancient work in Henry Co., Tenn., 130
 of ancient work, stone fort, near Manchester, Tenn., 37
 of stone fort near Manchester, Tenn., 100
 traces of, opposite the entrance of cemetery near Carthage, Tenn., 3
- Walamat Indians flatten cranium, 123
- Wales, burial practised by ancient inhabitants of, 34
- War destroyed American aborigines, 89
 of the Iroquois, 151
- Warren, Dr. Henry, on introduction of yellow fever in Barbadoes, 93
- Warren County, West Tennessee, human bones found in, 1
- Warren's Comp. View, reference made to, 34
- Waxhaws flattened the head, according to John Lawson, 122
- Weapons from Tennessee, 139, 140
- Webster, Noah, on pestilences, 92
- Wedge, polished, from stone grave within ancient work near Franklin, Tenn., 75
- Wedges from Oldtown, Tenn., 87
- Welsh, Mandans are said to have derived their knowledge of fortification from the, 38
- West Indian Aborigines, Bryan Edwards on excessive sensuality of, 67
 reference made to Edwards's History of the, 34
 Sir Hans Sloane on Natural History of the Diseases of, 68
- White's Creek, Tenn., stone graves at, 8, 53
- Wigwams of aborigines of Tennessee—of Mandans, as given by Catlin, 38
 traces of, on Mr. Dixon's farm, on White Creek Road, Tenn., 54
- Wilkins, Charles, respecting body from saltpetre cave in Warren Co., Ky., 5
- Williams, Capt. Daniel, affirms the finding of a female body well preserved, with yellow hair and shrivelled flesh, 4
- Wyman, Prof. Jeffries, on the foramen magnum, 116, 117
 on resemblance of skull of young gorilla and of man, 117
- Wooden ornaments, coated with copper, found in graves in Tennessee, 45, fig. 10
- XICALLI, a vessel of the Mexicans, 28
- YELLOW fever, analogy of Matlazahuatl to, 89
 in Brazil, according to Father Labat, 93
- Young, Sir W., reference made to account of Caribs by, 33
- Yucatan, crosses in, mentioned by Gomara, 78
 inhabited by Caribs, 122
 reference made to Stephens's, 136
- Yupanqui, corpse of Tupac, seen by Garcilasso, 29
- ZAPATERO, crosses at, 78
 idols discovered by Mr. Squier at, 136
- Zapotecs, burial customs of the, 28
- Zea, Father, describes burial customs, 32
- Zenu in Venezuela, ancient monuments near, 33