# THE ANCIENT PUEBLOS.

## REMARKABLE DISCOVERIES IN AN ARIZONA VALLEY.

**Fruitful Work of the Hemenway Expedition Under the Guidance of Frank A. Cushing—Scientific Exploration—Relics of an Ancient American Race.**

In a quiet and unpretentious but persistent manner there has been going on for something more than a year, in the desert lands of Arizona, a work of exploration and scientific investigation that, by reason of the peculiar field entered upon, the originality of methods adopted in its prosecution, and the importance of the results that are being attained, is destined to rank among the foremost enterprises of its kind that the world has known.

The original investigations pursued by Mr. Frank A. Cushing among the Zuni Indians about seven years ago have now become matters of history, and their great value from an archaeological point of view has long ago been recognized by scientists in all parts of the world. Mr. Cushing settled among these Indians, became one of them by adoption, was initiated into their sacred rites, and gave years to a thorough study from the inside of the history of these people as shown in the traditions that had been handed down from generation to generation, and in the forms and ceremonies of their mysterious ritualistic societies.

A WOMAN'S ENTHUSIASM.

His work attracted the attention of Mrs. Hemenway, who had long been interested in the Indian people, and she recognized the importance of having, for the first time in this country, a special cultus studied and an ancient civilization rehabilitated and brought within the scope of modern investigation.

Happily endowed with wealth, she came to the assistance of Mr. Cushing, and with cordial sympathy and enthusiasm organized the expedition that has been so effectively and so modestly working.

For over a year, then, this expedition has been hard at work excavating and collecting, and the fruit of this long period of labor is now on its way eastward. It comprises several thousand specimens of pottery, domestic utensils, shell work, ornaments, stone implements, skeletons, etc. A few of the skeletons will be deposited in the Army Medical museum at Washington, but the collection practically in its entirety will come to Salem. What final disposition will be made of it is not yet determined. Professor Edward S. Morse, of Salem, has from the outset been deeply interested in this unique enterprise. He has just returned to his home after several weeks spent in the camp of the expedition, whither he went on a special tour to examine the field of work.

CAMP HEMENWAY.

The country which was selected for exploration and excavation does not offer many allurements in the way of comfortable living. The heat is intense, the dust is stifling, the water is warm and muddy, and the baneful fly is numerous. The expedition has camped about ten miles from the city of Tempe, A. T. In and about Tempe are abundant indications of a tropical climate in trees, varieties of cacti, and vegetation generally. The valley in which Camp Hemenway is situated is a broad, level expanse, smooth as a parlor floor, hard and dry and variegated, with bunches of sage brush, the mesquite, scraggy trees, and beautiful flowers. For twenty-five miles this flat surface stretches away, and a carriage could be driven anywhere over it. The soil is light and dry, and all about little whirlwinds of dust are seen moving along. The fauna and the flora are of semi-tropical character.

Camp Hemenway consists of several commodious tents pitched about a quadrangle. A few small trees try in vain to give shade; a flag waves from a tall staff, and at a distance a dozen mules are tied. Far away mountain ranges shut in the valley. The quadrangle is roped about, and on the smooth earth floor stone implements of various kinds are arranged in groups awaiting classification. In several large tents rude tables and shelves hold specimens of pottery. Excavations have been made far and near. About the camp and temples houses, graves and communal ovens have been uncovered, until the life of this ancient people stands revealed as plainly as though the record had been written down in words.

A CLUSTER OF CITIES.

It appears that this valley in which the camp is, as well as other valleys throughout that section of the country, was centuries ago the home of a large population, which, from the general character of the dwellings which have been exhumed, has been estimated to have reached in this vicinity alone probably not short of 100,000 individuals. The houses of these people were built in groups of cities, only the merest traces of which now remain. The buildings, it is supposed, were overwhelmed by earthquakes, after which the disintegrating elements reduced them to dust, so that now nothing is left but low mounds, ill defined heaps of earth, and irregular lines of old canals.

Once this valley sustained a cluster of cities situated several miles from each other. Between the cities the work of agriculture was carried on, and traces of an elaborate system of irrigating canals have been found. These canals run in every direction, and they turned the dry desert into a flourishing and productive garden spot. One canal has been traced seventeen miles, another in a neighboring valley seventy-nine miles, and there are others of even greater length. In their construction these public works represented what must have been then an almost incredible amount of labor. They were built terraced, so that water would be retained in them all the year, and their surface walls were baked, until they were almost water proof by burning brush piled upon the puddled and plastered mud that formed their sides. The canals served a busy population, and certainly only a great population could have constructed them or indeed even had need of them.

DWELLINGS OF THE PEOPLE.

In the middle of each city a massive structure, with thick walls and six or seven stories in height, stood as a fortress. Around this were grouped the dwellings of the people, large blocks with flat roofs and terraced to the height of three or four stories. Sufficient has been discovered to enable the investigators to practically reconstruct the general appearance of these cities, and to clearly designate the character of their architecture and the methods of life of the people, even to minor details. The men engaged in the chase and in agriculture, while the women attended to household duties, and made, decorated and baked the pottery, the traditional knowledge of which has even been handed down to the Zunis and to other Pueblos of today.

They were a hard working race, as is evidenced by the great mechanical and engineering undertakings in which they engaged, and they particularly showed a great deal of mechanical skill in the fashioning of implements of stone and bone and in the making of shell ornaments. They were in a large sense a co-operative people, as appears from the communal ovens that belonged to each block of buildings. A distinct clan occupied each building, and in large ovens were cooked enormous quantities of food for the common use, the general method of cooking resembling that of the New England clambake. The central edifices were the temples, where dwelt the hereditary priests, whose storerooms held the tithes of grain and other crops, while other rooms were set apart for sacred or public purposes. In times of war this building became the citadel of the place and might well have been impregnable.

LABELED AND CATALOGUED.

Every object is carefully labeled and catalogued, and in the catalogue every circumstance concerning its finding is noted. Photographs are made of the excavations and objects found. Plans are also made of the buildings whose ruins are excavated and elaborate maps are drawn. The objects found include pottery, stone implements, shells and shell ornaments, turquois and other stones, and human and animal remains. Only a few traces of textile fabrics remain, and occasionally pieces of wood and other vegetable remains are found, for the most part in a charred condition, which accounts for their preservation. Most of the pottery collection consists of food and drinking vessels, buried with the dead, whose skeletons are also found, or used as domestic utensils, or found buried in the pyral mounds. This pottery does not differ materially from the ceramics made at the present day in the southwest. Many of the designs in vogue among the Zunis of today are found to have been derived or to have been handed down from these ancient models. In their shapes and in their schemes of decoration they show a very considerable amount of artistic quality. The shapes are very graceful, free and easy in line, and the decoration, although simple in character, is distinguished by much vitality and force of expression and freedom of touch.

Perhaps, however, the peculiar creative genius of the people is shown more markedly in the stone axes and other tools and in the shell and other ornaments. It is believed that when these axes and other stone implements are exhibited they will be found to be superior in variety of form and in beauty of finish to anything heretofore discovered as the work of primeval man. More particularly, however, the articles of personal adornment display the artistic skill of the people. Sea shells were brought from a great distance—as far as from the Gulf of California or the shores of the Pacific, being carried in loads, packed on the backs of animals, and thus transported over the mountains. These shells were worked into bracelets, earrings, beads, and bells of various shapes. Much of the shell work appears to have been used as a base for inlaying.

POTTERY, IMPLEMENTS, SKELETONS.

Some of the specimens of pottery and ornaments, as shown in drawings and in actual examples brought home by Professor Morse, are of most interesting character. In jugs and jars bird forms are seen; one is like a bird without a head, the wings being roughly indicated on the sides, and on another a bird head springs from one side. The decoration is generally in conventional lines. The stone implements are principally choppers, adzes, mills for grinding corn, and other forms, the use of which is problematic. The shellwork is apt to be covered with beautiful designs, and with these appear clasps, curious little bird forms carved out of stone, and finger rings and bracelets made out of shell and inlaid with turquois and other precious stones. Many of these would be accepted as clever works of art today.

Nearly 200 skeletons have thus far been found. This is the more remarkable, and by scientists is considered a special reason for congratulation from the fact that ancient Pueblo skeletons have been heretofore extremely rare. Previous to the work of this expedition it is said that only three or four have ever been found. The exhuming of these skeletons has resulted in a very important discovery in the line of anthropology, the exact nature of which, however, has not yet been made public.—Boston Cor. New York Times.

### Sights in Nizhni Novgorod.

The entire region, from the river to the bluff, is crowded with wholesale, retail and second hand shops where one can buy anything and everything—from a paper of pins, a wooden comb or a string of dried mushrooms to a ship's anchor, a church bell or a steam engine. In a single shop of the lower bazar I saw exposed for sale a set of parlor chairs, two wicker work baby carriages, a rustic garden seat, two cross cut log saws, half a dozen battered samovars, a child's cradle, a steam engine, one half of a pair of elk horns, three old boilers, a collection of telescopes, an iron church cross four feet in height, six or eight watches, a dilapidated carriage top, feather dusters, opera glasses, log chains, watch charms, two blacksmith's anvils, measuring tapes, old boots, stove covers, a Caucasian dagger, turning lathes, sleigh bells, pulleys and blocks from a ship's rigging, fire engine nozzles, horse collars, an officer's sword, ax helves, carriage cushions, gilt bracelets, iron barrel hoops, trunks, accordions, three or four soup plates filled with old nails and screws, carving knives, vises, hinges, revolvers, old harnesses, half a dozen odd lengths of rusty stove pipe, a tin can of "mixed biscuits" from London and a six foot bath tub. This list of articles, which I made on the spot, did not comprise more than a third part of the dealer's heterogeneous stock in trade; but I had not time for a careful and exhaustive enumeration. In a certain way this shop was illustrative and typical of the whole lower bazar, since nothing, perhaps, in that quarter of the city is more striking than the heterogeneity of buildings, people and trades.—George Kennan in The Century.

### Looking on the Dark Side.

It is only when a man is so constituted that he worries over what he cannot help that there is danger of self murder. This kind of worry has a tendency to unbalance a man's mind, and then he is liable to do anything. An intense, nervous man, with a disposition to look on the dark side of life, will worry himself about anything. Sometimes it is business, again it is some pet object, or it may be some trifling thing. Whether his suicide is preceded by a disappointment, the loss of money, or some small annoyance, the fact should be considered that he was from the first a victim of the worrying habit, and therefore on the road to insanity.

When a man finds the habit of worry growing upon him he should make a vigorous effort to throw it off. Let him cultivate a philosophical indifference. He will find that the best way to keep trouble at a distance is to go through the world with a smile on his face. No great harm will ever come to such a man. He may never be very rich or successful, but he will always get along, and live out his allotted time upon the earth. This may not be a very bright prospect, but it is infinitely better than the fate in store for the man who worries himself over everything that goes wrong.—Atlanta Constitution.

### The World's Insects.

Professor J. A. Lintner placed the total number of insect species in the world at 320,000. Of those found in the United States 7,000 or 8,000 are fruit pests, and at least 210 attack the apple.—Chicago Herald.

# LESSONS IN SWIMMING.

## THE HUMAN BODY MADE TO FLOAT ON THE WATER.

**Confidence, and How It Is Given to Beginners—Instructions from the Teacher at the Natatorium—Lessons in Floating. Different Strokes.**

There is a very unanimous desire on the part of the general public to learn to swim, and everybody, male and female, should be able to do so; but there is a remarkably large number of people, born and raised on rivers or lakes, who "can't swim a stroke," and who sink like lead if they attempt to raise their feet from the bed of the river or floor of the bathing compartments. They simply lack the nerve and confidence to try to swim, and instead of trying by following rules and instructions, they remain in shallow water, and when they do strike out do so with first one foot and then the other touching bottom. The only way these people learn to swim is by being cast, accidentally or purposely, into ten feet of water. Then it is swim or die, and if they have ever heard the secret of swimming it suddenly comes back to them, or if they haven't their horse sense dictates what they should do to be saved.

One of the most amusing things in the world is the young man just learning to swim. The boy, or even the girl, is not so bad. The young man wades out into the water up to about his waist, and then he hesitates. Generally there are enough small boys around who enjoy the sport to splash water all over him, so that he has cold chills running up and down his back, though the water may be warm, and he begins to think about going out. If he has any one to make suggestions he is likely to get a tub or a keg or a plank under his chest, and paddle around on that, but always in water where he couldn't drown unless he laid down in it with a weight on his chest. If his friend knows anything about the principles of swimming, and wants to take the trouble, or if he has a teacher, he will take him on his knee and give him the motion and confidence. This is a very easy matter, not so hard for the teacher as it looks. He first holds himself in shallow water, either by placing his hands on bottom or by catching something in front of him or overhead, and shows the learner the motion of the legs, and then the arms. He then shows him how to breathe, drawing in a short, sudden breath and holding it for a few seconds, may be for a minute, and then another, the recovery being so quick that but one arm stroke in the water has been lost in the refilling of the lungs. This is the first lesson, and a very good one.

The teacher then takes the young man, or young woman, if she desires to be taught in that way, on his knee. He is braced in the water, his bended knee far enough beneath the surface to allow the body of the young swimmer also to be covered. Thus in position, the teacher grasps the young swimmer's wrists and shows him the arm movement, rapidly and as earnestly as if he was really swimming. Then he drops the arm and grasps the legs, moving them in the proper manner, just as he did the arms. By the time this is repeated a few times—often a single repetition is necessary—the young man loses his nervousness and sustains himself in the water, and really swims without knowing it, the teacher lowering his knee so that he does not support the body, and releasing his hold on the limbs, so that the swimmer does not receive any assistance, though he imagines he does. When he finds he has been fooled, and that he has in reality been swimming, he finds himself in the possession of a growing confidence, and from that on strikes out like a veteran, and if he has any skill soon becomes master of all the strokes, dives, treads, floats, etc., and does everything that an older swimmer can do.

The lady beginner can take her first lesson in this way if she desires, and really it would be much better for her to do so. Attired in a neat fitting jersey costume, every part of the body covered, except the jersey may be cut in the prevailing decollete style, she need have no feeling of delicacy. If she has she can go on the belt. This is a wide belt, of stiff material, coming around the chest or under the arms, to the back, where it is caught by rings and hooks to ropes running away up overhead, over a pulley which runs along a track, and is controlled by an attendant on the walk above the level of the water. This attendant lets out more rope or takes it in as may be necessary, the swimmer regulating this as she desires. She can swim along the sides of the tank, or out into the center, just as she chooses. These belts are used in water ten to twelve feet deep, and the beginner who selects them must make up her mind to deep water if she declines the knee and takes up the belt. There can be no touching the bottom there, though she's safe from even getting her head under water.

Frequently lessons in floating are given before the ambitious youngster is introduced to the mysteries of swimming. Experts claim that a person who cannot swim at all can be taught to float in five minutes. Illustrating this, he fills his lungs with air before you know it, the action of the mouth and throat being so sudden, and placing his hands on his knees, bent in the water so that the cap is above the surface, or even with it, he drifts in the water as peacefully as if sleeping in a swing. A great many long distance swimmers do this as a means of resting themselves. In fact, it is the only way of resting where the swimmer cannot go out of the water. This act is intended to show the uninitiated how easy it is to float on the water.

After the swimmer has secured confidence and learned to keep his hands and feet off of the ground, or river bed, at the same time, he begins to study the stokes. First is the breast stroke, with the hands out straight, but not together, working like wings. Next comes the gentleman's stroke, in which the arms are stretched full length above the head, the hands palm to palm. Then comes the overhand one, the side, straight out, flat, and the other over and back, and then the flat, over with one hand and then with the other while the first is returning. Then there is the spring breast, one hand at a time, downward and back. The ladies' stroke is the easiest of all, it being a breast one, with the hands above the water. Then there is sculling on the back, which is done by twisting the wrist, flat, in the water, at or below the side. These strokes may be increased in number almost without limit, but they all have for their foundation, one way or another, the movements of simple swimming. These are, first, to draw the legs up, with hands out; second, to kick out with the feet, drawing the hands in, and third, to assume the original position of the limbs.—Globe-Democrat.

### A Veracious Man.

Wife—What time did you get in last night, John?

Husband—Two o'clock, my dear.

Wife—Where were you, John?

Husband—At work at the office, my dear.

Wife—That's right, John, never tell a lie. (To the servant—Mary, take Mr. Brown's shoes off the mantelpiece and get his night key out of the clock and put it in his pocket.—Washington Critic.

# CLAY EATERS OF CAROLINA.

**A Physician's Study of a Peculiar Vice. A Surprising Discovery.**

A short time ago Dr. Frank H. Getchell, Philadelphia, went on a gunning expedition to North Carolina. His quest of game led him into the wild country back of Salisbury, which is inhabited, for the most part, by a miserable race of beings, with only just enough energy to eke out a wretched existence. These creatures are nearly all veritable living skeletons, and, with few exceptions, are addicted to the habit of clay eating. While shooting wild turkeys and other game in this wild region, Dr. Getchell made an incidental study of this peculiar habit or vice among the inhabitants.

It is a mountainous country, and in the spring little rivulets start out from the caps of snow on the mountain, and as the days grow warmer, the little rivulets become torrents, and great washouts are made along the mountain side. The soil is of a heavy, clayey nature, but there are strata of clay that is heavier than the rest, and when the water rushes down this clay is formed into little pellets and rolls and accumulates in heaps in the valley. These little pellets and rolls are what the clay eaters devour with as much avidity as a toper swallows a glass of whisky.

"Among the poor people of this section," said Dr. Getchell, "the habit of eating clay is almost universal. Even little toddlers are confirmed in the habit, and the appetite increases with time. While investigating the matter, I entered a cabin occupied by one of these poor families, and saw a little chap tied by the ankle to the leg of a table, on which was placed a big dish of bread and meat and potatoes within easy reach. The child was kicking and crying, and I asked his mother why she had tied him up. She replied that she wanted him to eat some food before he went out to the clay, and he refused to do so. The woman confessed that she ate the clay herself, but explained that the child's health demanded that it eat some substantial food before eating any earth. Almost every one I met in this section was addicted to this habit. They were all very thin, but their flesh seemed to be puffed out. This was particularly noticeable about the eyes, which had a sort of reddish hue.

"All of the clay eaters were excessively lazy and indolent, and all of these conditions combined led me to the conclusion that there must be some sedative or stimulating qualities, or both, in the clay, and I determined to find out whether there was or not. I consequently brought a lot of the clay home with me, and Professor Tierman and myself made an analysis of the stuff, and discovered that instead of clay eaters the inhabitants of central North Carolina should more properly be called arsenic eaters. All of this clay contains arsenic, but exactly in what proportion we have not yet discovered. Arsenic eating is common in many parts of the world, and is practiced to a greater or less extent throughout the world. It acts as a sedative and also as a stimulant. The mountaineers of Styria, Austria, are habitual arsenic eaters. They give as their reason for eating it that they are better able to climb the mountains after eating the poison, and their explanation is a perfectly reasonable one, as arsenic acts as a sedative to the heart's action. It has been shown that arsenic or arsenical fumes are a sure cure for intermittent fever. The inhabitants of a section of Cornwall, England, at one time suffered with this type of fever, but when the copper works were established there the fever disappeared. This was accounted for by the arsenical fumes created in the treatment of copper. As to whether arsenic eating shortens life I am not prepared to say, but I intend investigating the matter thoroughly."—The Clay Worker.

### An Eye on the Faithful.

The life of a brakeman on the elevated roads is an exemplification of the persistent regard that should be paid to what many consider little things if one has ambition to rise in life. It is noticed that men who were brakemen ten years ago are still employed as such, and that men who started ten years ago are now conductors, with a pleasant and dignified responsibility and higher pay to their credit. The new men rose by persistently paying attention to their duties, the chief one being to call out all stations correctly and distinctly. Of course this has to be done hundreds of times each day, but the advanced ones have not tired.

It is a wrong supposition to think that these men are apparently lost among the hundreds of thousands who ride on the road. The eyes of the management are constantly on them. The slovenly and inattentive ones grumble at the advancement of new men, seemingly unaware of the cause. They continue the haphazard way of doing things, and see the persistently attentive ones rise, and are apparently unaware that they are the arbiters of their own fate.—New York Sun.

### Many Uses of Castor Oil.

The average boy has an idea that castor oil was got up for the torture of all kids who have careful mothers to protect them from the fell destroyer. He is mistaken, like a majority of grown people who only regard castor oil as a medicine. Only a very small proportion of it is consumed in that manner. Castor oil forms one of the best lubricators, and is used for greasing wagons and other purposes where the price does not prohibit it. Then it is burned as an illuminator, not only by the Jews for their Sabbath lamp, but elsewhere.

In India, where large quantities of the seed are raised, the oil is added to the native condiments to flavor them. It is also made into an illuminating gas in India. In this country castor oil is used to dress Morocco leather. California, Kansas, Iowa and Illinois are the principal sections of this country where the seed is raised, and the castor oil presses at Belleville, Ills., are among the most extensive in the world.—Druggist in Globe-Democrat.

### Habit of Dropping the H.

The reminiscent and gossipy author of "Old Drury Lane" tells a story that comically illustrates the H dropping habit that occasionally besets our English cousins. It was in 1831, under Elliston's management, that "Woodman's Hut" was produced. It was crammed full of sensation, prominently a burning forest. A new actor was cast as one of the three robbers, Wallack and J. Smith being his fellow scamps. The scene was a forest—the woodman's hut; time, night. Enter the three thieves to extremely cautious music—an indispensable condition, by the way, of doing wicked things on the stage.

First Robber (the new actor)—'Ush! I see a house. (Pointing to the hut.)

Second Robber (enjoying the joke)—No, Blunderby, it's a nut.

Third Robber (Wallack)—No, fool, it's a habitation.—Detroit Free Press.