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VESPER HOURS OF THE STONE AGE.

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Although it is scarcely twenty-one years since I first crossed the Missouri river and began my acquaintance with the then wild tribes which roamed the valleys of its great tributaries and those of the Rio Grande, the Gila, and the Colorado, the interval has been extended enough to see them all not merely subjected to a condition of peace, but in most instances notably advanced in the path of civilization, their children trained in the white man's ways, and all traces of earlier modes of life fast fading into the haze of tradition.

It may, therefore, not be wholly without interest for an actual observer to describe, in a few words, some of the peculiar features of the closing hours of the Stone Age.

WEAPONS.

Most of the tribes herein considered were, to an insignificant degree, armed with muskets and rifles of old patterns, and occasionally with revolvers; but in both war and the chase they were mainly dependent upon weapons of their own manufacture.

Lances, arrows, and clubs were their principal offensive weapons. Stone scalping-knives of the broad, leaf-shaped pattern were still worn suspended from the neck.

Such fire-arms as had been obtained were invariably deprived of the iron butt-plate and one of the bands, and had the stocks scraped down in order to secure a minimum of weight.

Among the southwestern tribes the stocks were nearly always fantastically ornamented with brass-headed nails, and, when procurable, with the sacred green *chalchihuitl*, the gun being looked upon as "medicine." In this connection it may be well to observe that the Apaches of Arizona, New Mexico, and Sonora were among the first people in the world to reload the copper cartridge, which was done in a crude and laborious but efficient way by boring a hole in the base of the cylinder, inserting the old-fashioned percussion cap, and then refilling with powder.

presented by the author.



The Apache never failed to provide himself with two willow shoots, thirty inches long and half an inch in diameter. These were hardened in hot ashes and then peeled. When shooting, the Apache would hold these sticks in his left hand, criss-cross, and make a rest for his fire-arm. This custom undoubtedly can be traced back to the first appearance of the Spanish arquebuse, which was always fired from such a rest.

Spears.—The lance was made of a staff selected from a suitable shoot of the *mesca* (century plant) or the *amole* (soap-weed), ten to twelve feet long. This was tipped with a flint barb, two or three inches in length by an inch in breadth, sometimes with serrated, sometimes with plain edges, fastened to the staff with sinew and gum.

An improvement upon this was made by inserting an old cavalry sabre into the same kind of a shaft and fixing it in place by drawing over it and allowing to dry the sexual organ of the domestic bull. The penetrative power of the lance was very marked; the young warriors constantly practiced with them, using the vertical giant cactus as a target.

Constant practice in the athletic game of *mushka*—which was practically a feat in lance-throwing, allied to the *chunke* found under various forms in so many parts of the American continent—added strength and dexterity to the arms of the Apache warriors. I have known them to pierce a human victim through the body at one thrust, and to transfix a *saguara*, or giant cactus, when advancing toward it on a run, from a point thirty to forty paces distant.

Arrows.—The stone tips of the Apache arrows comprehended all the forms known to archæologists: tongue and diamond shaped, straight or curved edges, serrated and non-serrated, with and without tangs. The Apache arrow, it should be stated, was composed of three parts: the reed, the stem, and the barb; the last affixed to the stem and the stem inserted into the reed, and both firmly held in place by ligatures of sinew. The stem was made of a hard wood called *kiong*, the shaft of the *carrizo* or *klokā*. The use of sinew for securing the barb to the stem was believed to be based upon the fact that after the arrow had entered the body the warm blood flowing from the wound would soften and loosen the sinew, disengage the point, and increase the discomfort, pain, and danger of the victim.

Arrows intended simply for the killing of birds or small game were not always barbed, but were generally provided with a cross-piece about two inches below the tip.

Bows.—The bow was made almost always of the tough, elastic mountain mulberry, called, par excellence, *iltin* or bow-wood. Occasionally, the cedar was employed, but bows of horn, such as were to be seen among the Crows and other tribes of the Yellowstone region, were not to be found among the Apaches and their neighbors in Arizona.

The elasticity of the fiber was increased by liberal applications of bear or deer fat, and on rare occasions sinew was glued to the back for the same purpose.

The rule laid down by the Apaches for making their bows and arrows was the following: The length of the bow, or rather of the string, should be eight times the double span from thumb to little finger of the warrior using it. The curvature of the bow was determined almost entirely by individual strength or caprice. The shaft should equal in length the distance from the owner's armpit to the extremity of his thumbnail, measured on the inner side of his extended arm. The stem should project beyond the reed to a distance equal to the span covered by the thumb and index finger; this measurement included the barb, when made of sheet-iron. The iron barb itself should be as long as the thumb, from the end to the largest joint.

Stone arrow-heads were made preferably of obsidian (*dolguini*), next of chalcedony, lastly of pieces of beer bottles, but the process of manufacture was in each case the same, and consisted in chipping small fragments from the edges of suitable pieces of material, the chipping implement being a portion of hardened deer or elk horn, held in the right hand, the silicious stone being held in the left over a flap of buckskin to protect the fingers. Four or even five arrows could be discharged with a rapidity equal to or even greater than that of the firing of the same number of shots from the old-fashioned revolver.

I made it my business to determine exactly how many minutes were requisite for making a serviceable arrow-head. I singled out an Apache at random and stipulated that he should employ no tools of iron, but allowed him to gather from the ground such pieces of chalcedony as he pleased. He made a number of barbs, the time as recorded in my note-book being five, six, seven, and eight minutes. An expert would have completed the barbs in less time; but the problem was to determine how long it would take Apache Indians, whose village had been captured and destroyed by troops,

to provide themselves anew with weapons which would render them a menace to the scattered settlements of the frontier.

A good lance-head could not be perfected quite so soon. It could be made in a very short time, but in exactly how many minutes I am unable to say.

The Apaches have a myth which states that they overcame all the tribes in their path because the god, *To-va-dis-chinni* ("The Mist Rising from the Water"), placed them in a reed swamp and gave them pieces of obsidian as tips for their arrows. When read between the lines this myth relates an important truth: The Apaches did subdue or drive the other tribes before them on account of having better arrows, made as described.

Feathering.—At the lower end of the shaft were three half feathers of a hawk, fastened at each end with sinew, and in the direction of the axis. Each feather was as long as the inner seam of the second finger. No rule was found for placing the slot of the arrow, and in the same quiver I have found some in which the slot was in the same plane with the barb and in others perpendicular to it. These rules of measurement apply only to this particular class of arrows.

I am able, from my own recollection, to supply a number of illustrations of the great force with which the arrow was discharged, although a person for the first time observing an arrow coming towards him would be surprised at its apparent lethargy. In the summer of 1871 I was riding by the side of General Crook, on the summit of the elevated plateau known as the Mogollon Mountains, in Arizona. We were a short distance ahead of a large column of cavalry, and our immediate party was quite small. We ran into an Apache ambuscade; a number of arrows were discharged, two of them piercing pine trees to a depth of at least six inches. On another occasion a pine door, three-eighths of an inch thick, was penetrated. In July, 1870, a friend of mine, M. T. Kennedy, was mortally wounded by an Apache arrow which pierced his chest. The autopsy disclosed the fact that the arrow had no head.

The Apaches poisoned their arrows by rolling the stem in deer liver which an enraged rattlesnake had been made to bite. Their efficacy was more imaginary than real, because I have seen dogs, pigs, birds, horses, mules, and human beings wounded by such poisoned arrows and cannot recall the slightest increased danger or even the slightest additional inflammation from wounds made by them.

From their tenderest years Apache youth were trained with bow and arrow as with the lance, and, as a consequence, they attained a marvelous precision and rapidity in their use.

Slings.—In the use of the sling the Apaches were inferior to the Yumas, the reason being that the Yumas lived in the Colorado bottom which is filled with inexhaustible quantities of smooth, round, water-worn pebbles, admirably adapted for missiles.

The Apache were also expert in throwing stones, and often killed quail and turkeys with pebbles.

War-clubs.—The war-club of the Apache was an admirable weapon: a stone of suitable size and shape was sewed up in a cow's tail; then a space of four inches was left in the tail, and lastly, a round stick was sewed in to give strength and rigidity and to serve as a handle. The hair was left pendant, as it kept the hand from losing its hold when covered with human blood.

There was a radical difference between the Apache type of war-club and that of the *macan* of the Pimas, Maricopas, Yumas, Chemahuevis, Cocopahs, Opatas, and others. These *macanes*, or "potato-mashers," as the soldiers used to call them, are well described by their nickname. They were made, ordinarily, of the hard and close-grained wood of the mesquite and were a very effective weapon at close quarters.

By all these tribes the war-club was used in the same manner. Having located a *rancheria*, or village, of their enemies, they would surround it at night and when light first appeared in the east would raise a yell, shrill and unmistakable in its blood-curdling significance. The terror-stricken foe, rushing out pell-mell from their frail *jacales* were obliged to go down on their hands and knees to get out of the low openings. Crouched in this defenseless position, they would hardly have protruded their heads, when crack! would come the *macan* or war-club of the blood-thirsty assailants.

The Pimas and Maricopas used to be greatly addicted to plundering, in which they rivalled the Prussians. Almost the moment a hostile *rancheria* was attacked, pillaging began.

Blow-gun.—Inquiry was made among the Apaches in regard to another peculiar implement of war, the blow-gun of the tribes of the Orinoco and Essequibo, called "*cerbatana*" by the first Spanish explorers. It is not unlikely that the Apaches were once familiar with some form of the blow-gun, because their children occasionally make use of a toy constructed on the same principle; but nothing

definite on this head could be extracted from them. The blow-gun is still in use among the Cherokees of the mountains of North Carolina, from whom I obtained one last summer.

Boomerang.—By many, if not all the tribes surrounding the Apaches, the boomerang has been used from time immemorial in hunting the jack-rabbit and the field-rat. The Apache secures these toothsome viands by other means, and has no use for the boomerang. A form of the boomerang, studded with cruel teeth of obsidian, has been described by the early Spanish writers under the name of *maquahuiltl*. It is said to have been a formidable war implement of the tribes of Anahuac and of those living near the Rio Grande, who could cut off a man's head with it. Not the slightest knowledge of this weapon exists among the Apaches of our day, and there are no references to it in their traditions or myths. But I heard something of a former use of the *maquahuiltl* among the Rio Grande pueblos, and was assured by an old Indian, of Taos, New Mexico, that there was in that town at the time of my visit a weapon of this description, but the assertion was not verified. This old Indian insisted that a man's head could be cut off with this weapon, unconsciously corroborating the old Spanish story. Some of the bands of Siouan stock, on the Upper Missouri, retained a modification of the *maquahuiltl* until within very recent times. It was a sort of tomahawk with long, sharp teeth of steel.

SHIELDS.

Shields, made of the hide of the buffalo's neck, were still in general use. A hole was dug in the ground and filled with hot embers, over which was strewn a layer of earth. A piece of hide of the requisite size and shape, or rather of a little larger size than was strictly necessary, because shrinkage had to be allowed for, was next pegged down to the ground, covering the improvised oven; then came another layer of earth and a top layer of hot coals; the effect being that the hide was slowly and evenly baked and hardened without being burned or cracked, and was made capable of resisting the old-fashioned, round, leaden pistol or musket bullet. When ornamented with the owner's totem and gaily decked with eagle feathers which serve the triple purpose of decoration, of frightening the enemy's horses, and, as the savages thought, of resisting arrows, the shield was pretty to look upon and a good means of protection from the missiles of past eras.

MORTARS, &C.

There were various forms of metates, mortars, and mullers for grinding acorns, mesquite beans, grass seeds, and paint. Frequently rocks *in situ*, provided with suitable depressions on their surface, were so used. Such were the rocks in the Gila Cañon, at the Bâ-bi-tui or Coyote Springs, in Pinal Creek, and elsewhere.

Stone mortars of great size were once to be found in Green Valley, where they formed the mills of the Apaches for grinding acorns so abundant there. Whether or not these belonged originally to a people of Pueblo type whom the Apaches displaced, cannot now be determined. The mortars themselves have all disappeared, having been carried off by American miners in which to crush auriferous rock.

No time need be spent in describing the stones used in heating vessels of grass and palmilla—those for heating the *ta-a-chi* or sweat baths, or those for cooking *mescal*—except to say that they were always selected from silicious rock, which would not split under high temperatures.

BORING-TOOL.

With an ordinary arrow held between the hands and revolved vertically the Apaches bored holes in beads. A bead of *chalchihuitl* was made in my presence under circumstances of great disadvantage in a trifle less than twenty-six minutes.

FIRE-STICK.

In the butt of the lance-staff a hole was bored and to it was attached by a string, the essential fire-stick, because matches were as yet scarcely known. The time required for making fire by this method, according to my personal observation, ranged from eight to forty-seven seconds; but the Apaches assured me that they could make it, under the most favorable circumstances, by running their hands down the vertical stick only once, which would occupy not quite two seconds as recorded on the watch. A sprinkling of sand increased friction and hastened the process very much. Two things are worthy of mention while speaking of this subject: the great volume of smoke that issued from the point of contact of the sticks and the total absence of flame.

AMULETS.

All the American aborigines used stones as amulets. The most familiar examples are the arrow and lance heads which had once

killed enemies, or, in the hands of the enemy, had failed to kill the owner himself. Two or three arrow-heads were appended to the necklace of human fingers which I secured during a fight with the Cheyennes of northern Wyoming during the winter of 1876, and which has since been deposited in the National Museum. The information obtained in regard to these was always vague and far from satisfactory, but better fortune attended my investigations into the nature and uses of the "medicine arrows" worn by the women among the Apaches and Pueblos. I have the only one of these ever given into the keeping of a civilized man. It had been worn for years by *Tze-go-ju-ni* ("Pretty Mouth"), an Apache squaw who claimed great skill as a midwife, and was in the habit of administering a pinch of powdered arrow in water in cases of painful gestation and protracted labor. She explained that whenever lightning happened to fell a pine tree on the top of a high mountain, the medicine men would hunt around to see if there was any rock at the foot of the blasted trunk which would yield fire when struck. Such quartz veins are, of course, common enough, and the only thing that remains to be done is to shape a piece of the stone into a lance-head.

One of these "medicine arrows" was seen by me in the Pueblo of Acoma, New Mexico, in 1886. The woman who owned it acknowledged that its uses were identical with those of the same amulet among the Apaches, but absolutely refused to sell or trade upon any terms.

Just such amulets, endowed with the same virtues, have been employed all over the world, in Europe as well as in Asia, in early times as well as in our own day.

A chapter of references to this topic has been compiled from various authorities in the course of my studies and will soon be published. I wish only to add, at this time, that the "elf shots" of the European peasantry may fairly be placed in the same category.

Garcilasso de la Vega, in his "Commentarios Reales," made the curious statement that in Peru, whenever lightning struck a tree, the priests were careful to mark the spot to prevent the people from approaching and incurring the displeasure of supernatural powers.

In the new light thrown upon this matter by *Tze-go-ju-ni*, it is not at all unlikely that Garcilasso de la Vega, who was less than thirteen years of age when he left Peru, was entirely in error, and that what the priests really intended to do in such cases was to preserve the stricken trees for the manufacture of amulets and talismans.

The worship of stones was still further developed among the Apaches. I have been taken by these Indians to one of their sacred caves in the Tonto Basin in which was a stone phallus; in another the medicine men had danced and sung around stalactites and stalagmites which yielded musical resonance under the sturdy blows of their clubs. I did not see this dance, but the natives who conducted me to the cave, and whom I found to be perfectly reliable, showed me the stones and the places where the medicine men stood.

The sacred stone-heaps described in all other parts of the world are frequent in Arizona where the Apaches call them "*tze-nachie*." I have prayed, cast stones upon these heaps, spat upon grass, blown my breath, and made a little backward jump precisely as the Apaches instructed me to do; but as this article has already exceeded the limits originally intended, and as it is trenching upon the more strictly religious side of Apache life, I will reserve further information for treatment under that head.

