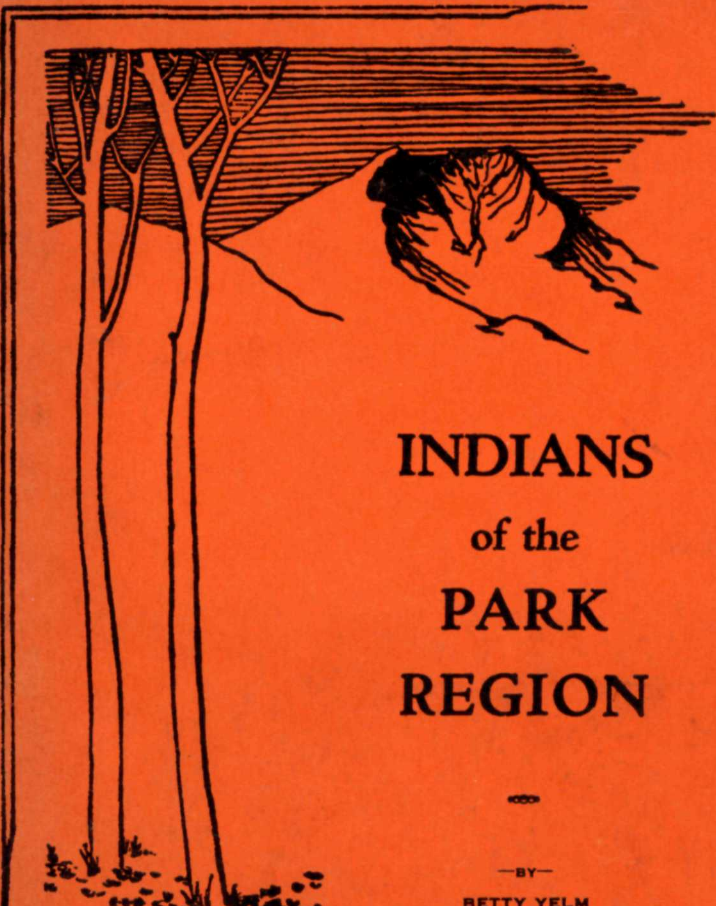

INDIANS
# of the
PARK
REGION

—BY—

BETTY YELM

DR. RALPH L. BEALS

ROCKY MOUNTAIN NATURE ASSOCIATION
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ERRATA

Page 2, line 5—for "which are well-timbered and well-watered," read "are without timber except when well-watered."

Page 4, line 23—for "quartz crystals, feldspar, and schist," read "quartz crystals and feldspar."

Page 5, line 3 — for "conglomerate," read "agglomerate."

Page 5, for paragraph 2 read: "In the foothills are inclined sedimentary rocks consisting of sandstone, limestone and shale. These materials, especially the red sandstones, were used largely for metates."

INTRODUCTION

No longer are Indians found in the region which is now Rocky Mountain National Park. This area, which once knew intimately the moccasined tread of Ute and Arapaho and whose waters reflected the tipis of war and hunting parties, is now the mecca for thousands of pleasure seekers. Splendid roads and trails follow forgotten routes used by the red men.

Few of the visitors to this national park realize that they are traveling over Indian country. They do not know that they are passing ancient camp sites and battle grounds.

There is much evidence that the area was frequented extensively by various tribes. It is with the hope that an interest will be aroused in the history of the region's earliest peoples that this little booklet is issued by the Rocky Mountain Nature Association.

Dorr G. Yeager,
Park Naturalist

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ANTHROPOLOGY

By Betty Yelm

INTRODUCTION

For many years residents and tourists of the district of the Rocky Mountain National Park have been collecting flaked stone artifacts and pottery. These were finally put into a large collection of the Rocky Mountain National Park Museum and studied for the culture of the ancient aborigines of this region. These people had a stone age culture which included a rough kind of pottery. They roamed the foothills and broad ''parks'' in search of game for food, clothing and dwelling.

They perhaps used wood for a great many things, but this had rotted away along with the other perishable materials, and all we have left are the stone artifacts and pottery to show the existence of these peoples.

Let us see how we can rebuild the ancient culture of these roaming aboriginal tribes from facts known about the topography, climate and resources of the country, and the archaeological data collected and kept in the Museum.

I—TOPOGRAPHY AND CLIMATE
FLORA AND FAUNA

Colorado has three well-marked sections. The Plains of its eastern half form the western extension of great prairie country reaching from the Mississippi River to the foothills of the Rocky Mountains, which are well-timbered and well-watered and have varying elevations from 6,500 to 8,000 ft. above sea level. West of these the altitude increases as one ascends up to the Rocky Mountains, the second section, which cover nearly the entire western half of the state. The third section is that of the broad park, or large elevated tracts of land, having rich, well-watered soil and undulating hills, very propitious for camping purposes.

As one can see, the climate would vary with the altitude, ranging from heat and dryness of the Plains to a coolness in the higher regions, in summer. In the winter the temperature is comparatively mild, with rather light snowfall except among the higher mountains, where there are heavy snows and severe cold prevailing. However, an eastern or southern slope is usually well protected from this condition.

The well-timbered mountains of Colorado have large areas containing growths of Douglas fir, yellow pine, Engelmann Spruce, and lodgepole pine. In addition, there are many species of bushes, and plants.

Animal life greatly varies with mountains and plains. Bison, antelope, coyote, and small game have existed and some of these species still exist in the Plains. In the mountains there are deer, elk, mountain lion, wildcat, mountain sheep and bear.

II—GEOLOGY

The Rocky Mountain National Park, with an area of approximately 405 square miles is situated among high mountains of the Front Range, often called the Snowy Range, due to its beautiful peaks, spangled or covered with snow most of the year. The western slopes of the mountains are more gentle and heavily forested at an altitude below timberline, so that very few good views can be obtained from the trails. On the east the descent from the top of the Continental Divide is precipitious and more rugged. In addition the forests have, in many places, been destroyed by fires and this usually gives a clear unobstructed view of the lofty sharpness of peaks. The Snowy Range mountains are very young as shown by their sharp relief, cut by steep-walled gorges and comparatively deep canyons. The moraines are conspicuous evidences of glaciation along with the high gorge lakes and the remnants of glaciers above, still "living," which also gives proof of the youth of the mountains of this district. Above timberline (11,500 feet), there are descendants of a great many arctic plants which have found the high altitude of sufficient frigidity to live. Others have followed the glaciers in their retreat northward. (See the "Geologic Story of Rocky Mountain National Park, Colorado" by Willis T. Lee).

All this gives a conception of dynamism of these apparently stable mountains. However, the change is so slow that it is safe to surmise that the living conditions of ancient man in this part of the country was about the same as at present, aside from a few variations as to severity of winters, etc.

A brief summary of the main geologic formations must be given attention. In the mountains the formation is mainly granite, which contains a variety of minerals, but is composed largely of quartz crystals, feldspar and schist. In addition, Specimen Mountain, in the west end of the Park, is a great rounded mass, seemingly out of place among the jagged peak outlines. It consists chiefly of rocks of eruptive origin, fragmental and arranged in thick irregular layers, steeply inclined and consisting of beds of light-colored volcanic ash, black obsidian, and conglomerate. Fragmental rock consists of mineralized rhyolite and andesite. Fine-grained layers consist of volcanic tuff and ash. (After Lee).

In the foothills there is the Morrison formation or red rock, Dakota sandstone, or hogback seen near Lyons, Colo., and the shale and limestone of the plains.

Out of all this variety of material the only types of stone that can be chipped are: (1) quartz—we find this material in small worked places and badly flaked arrowheads due to the flaws in it. (2) Obsidian—good for flaking but found only in smaller pieces here. (3) Felsite — chipped and shaped in small quantities. Sandstone and shale are found at only two campsites in the mountains in unworked pieces.

It will be noticed that this country was excessively poor in flakable matter having only these three mentioned above. All the material found worked was imported from the Plains and consisted mainly of chert and quartzite.

III—SITES

The three important river drainages of the Park are the Big Thompson in the east, the Cache la Poudre, flowing north, and the Upper Colorado River drainage (formerly the Grand River), which skirts the western edge of the Park. These drainages are important because they are usually natural passageways and travel routes for primitive peoples as well as the modern tourists. When we look upon the lower broad valleys and gentle southern and eastern slopes of the Park we conclude that these must be very good for camping, for they are near water and very accessible. For this reason various people have discovered many articles of stone industry in these locations indicating that someone with a very primitive culture had at one time existed here. On the upper ridges and skirting mountains one will pick up traces of old trails, worn very deep, which are commonly called the "Old Ute Trails." These have been traced westward from the "mouth" of the Big Thompson River (where it leaves its deep rocky canyon and goes east to join the South Platte River), to Grand Lake, in the southwest end of the Park. These trails are traced on the ridges because, in the broader valleys, roving peoples spread out and left no worn traces in passing through the broad flat country, while a trail situated on a ridge was used and re-used because it possessed qualities of a good lookout in order that game might be seen and secured, and a wary eye might be kept open for enemies. Thus we find that these are the trails which have been preserved for many years and they are still used by the pleasure-bent and "hunting" parties of tourists, either on horse or on foot.

At the present time only 27 sites have been established for the Rocky Mountain National Park proper, within or just outside its boundaries. The country will probably reveal more when further studied. The Upper Big Thompson with its tributaries is the most important, giving 21 sites. This drainage has been better known in comparison to the Cache la Poudre with four sites, flowing north in wild country, and the Colorado River with two sites flowing south, and still quite unknown as to the amount of archaeological material it contains, mainly because the material hasn't been surveyed. However, this drainage is exceptionally promising.

Of these 27 sites, the majority (18) are scattered finds in a definite locality, the finds not being the type or number to establish the site as a campsite. Six sites had enough of the type material as to be counted as campsites. Five sites were "lookouts," having a view of the surrounding country and enough material to show that ancient man had been on these high places. This totals 29, but two sites were combinations of campsites and lookouts making doubles, or total, 27.

The Eastern Foothill district following down the Lower Big Thompson shows larger and an increasing number of campsites. This indicates that the aborigines lived in these lower altitudes, and only made excursion trips into the higher districts either for war or hunting purposes. As one proceeds east to the Great Plains the finds are even more abundant as workshops and large campsites. ("Archaeological Survey of Eastern Colorado" by E. B. Renaud, first, second and third Reports).

The old trails increased to the east outside of the Park boundaries showing that there is not one great "Ute Trail," but several old trails which were used for mountain excursions. The two "Old Ute Trails" most interesting to everyone at present are: (1) That following Trail Ridge, crossing and recrossing the new road at various places on top of the 11,000 to 12,000 foot ridge. (2) The old trail over Flattop mountain from Bear Lake to Grand Lake.

IV—STONE INDUSTRY

As the geology of the country has shown (Page 3), there is little native material that can be chipped and made into useful implements. As we have stated before, there was only quartz, obsidian and felsite which were native to the Park, and we find very few artifacts made of these materials. What we do find are artifacts made of chert, quartzite, petrified wood, chalcedony, jaspar, agate, pitchstone, moss agate, slate and three pieces of flintlike material. These were given in the order of frequency, chert being the most frequent and so on down the list. Flint is seldom, almost never, found in this part of the country. So, surprisingly, the older peoples of this region undoubtedly imported their material from Eastern Colorado and Wyoming where it is found in abundance, as proved by the extensive "Spanish Diggings."

Let us now see what they made out of these imported materials which they obviously preferred for qualities of chipping facility, and pretty color, so that it could be "worked" more easily and shaped into useful and beautiful implements.

There are what are known as cores or nuclei from which flakes were obtained for use as scrapers or small knives, or shaped into points. The flakes were taken off from the nucleus by percussion, but the implements were shaped by pressure. By percussion we mean the striking off of a chip from the pebble or nucleus with the help of a hammerstone, which often is a river pebble. Pressure method consists of pushing off a small flake by application of the tip of an antler or pointed bone object against the edge of the piece to be shaped.

Of the principal tools or implements we find first, three kinds of scrapers: (1) side scrapers, (2) discoidal scrapers, (3) end scrapers and thumb scrapers. All of these were used flush with the surface to be scraped, either wood or hide, at an obtuse angle, whether made from the nuclei or from flakes taken from them. A knife differs from a scraper in that it has a blunted back and relatively thin blade, so that it may cut into an object, usually at right angles. Double-edged knives rather similar to long narrow spearheads were usually hafted, of which two or three have been found in the Park.

Next we find a variety of points. Some are weapon points: arrow and spearheads; others, tools such as thick points of doubtful purpose and points of bladelike flakes. There were also borers, mostly drills, of which about a half dozen have been found.

Further mention must be made at length on arrowheads, as they are conspicuous and picked up more often than the other artifacts. They may be found almost anywhere in this region and they vary in size from a half inch or smaller in length to about two inches. Longer points are too large to be shot with a bow, and so enter the spearhead class. They were hafted on a shaft more or less in the same manner as one sees in the modern arrows.

There are three classes of arrowheads: Stemless, stemmed, and notched, the latter having (1) lateral notches, or (2) lateral plus basal notches. A stemless arrowhead is a sub-triangular point. Stemmed arrowheads are shouldered points with a tang narrower than the body of the arrow. Notched points have a base broader than the arrow and lateral notches, one or more on each side, sometimes also a notch at the base.

It will be interesting to compare this proportion to the results of a survey of large collections from southern and northern Colorado which will be published in the Fourth Report of the "Archaeological Survey of Eastern Colorado," by E. B. Renaud.

	So. Colo.	No. Colo.	R.M.N. Park
Stemless	8.00%	11.34%	16.51%
Stemmed	83.60	78.62	70.64
Lateral Notches	6.35	8.44	9.17
Basal & Lateral Notches	1.52	1.58	3.66
	99.47%	99.98%	99.98%

The arrowheads were found to be mostly of the aforementioned material foreign to the Park in the following degree of frequency: quartzite, chert, petrified wood, other materials being found only in small numbers. The results of this table show how closely the percentages of the Rocky Mountain National Park follow the other two districts, especially northern Colorado. The slight variation of the figures may be due to the very large collections studied in the other two districts in comparison to the Park, tourists having carried away a great many points before systematic collecting was done.

At the campsites we find manos, or hand-stones, of quartzite, sandstone, and granite, which are used with one hand. They are described as " . . . . generally sub-rectangular, sometimes squarish or nearly round or oval and flattish. It is most often a river pebble selected for its size and shape. In a few cases it seems to have been pecked into a more regular shape, convenient for good grasp of hand. Many of these manos have been used also as pounders or hammer-stones, to break bones and nuts, to crush roots, dry meat and berries, to grind seeds, and like operations.'' (E. B. Renaud, Archaeological Survey of Eastern Colorado,'' First Report, page 23). Occasionally we have found metates, or large flat stones of all shapes and sizes, upon which the grinding and pounding was done. These usually had a pecked oval trough showing that a gyrating motion was used in the grinding of nuts, seeds, roots, etc. One seldom finds these metates in this part of the country, however. An explanation of this fact may be that the manos were used mainly in the rubbing processes of skin and hide dressing. (After Renaud). In Neolithic times the Egyptian women made use of similar implements for grinding wheat.

V—POTTERY

At eight sites studied we find pottery fragments or potsherds. This is quite unexpected as pottery is heavy, bulky, and breakable to carry around. Especially in mountainous country among nomadic peoples, as these people essentially had to be. The sherds were quite small in size and their color, which was the natural color of baked clay, an inconspicuous grey-brown to black, some with a reddish-tinge due to oxidation in firing. The outside surface was usually plain, probably smoothed with some object or the hand. Occasionally, on close examination, one can find a thumb or nail imprint on both the outer and inner surfaces, and in one instance there was evidence that a paddle wrapped with string was used to stamp the outer surface for decoration and ''non-skid'' purposes when handling. In two cases there were pieces of coiled necks also characteristic of the older types of pottery. To prevent the pottery from shrinking in drying and firing a temper of crushed rock or gravel, rarely sand, was used and shows frequently on the surfaces. The shape of the lip, when present, was round and undecorated. The average thickness of this pottery ranged from ten millimeters near the base to 8 millimeters at the rim and lip. The firing was fair, although the pieces are not consistently even in color or hardness. These pots were probably of a general globular shape with wide mouth and more or less round bottom, an evolution probably of the old buffalo paunches used for cooking by indirect firing. The plainness and scarcity of these potsherds indicates use only for cooking purposes.

The relatively low degree of development of the ceramics is probably due to the extreme western extension of a ceramic area which was centered in the lower valley of the Platte, Missouri, etc. rivers in the Mound region.

SUMMARY OF THE CULTURE

On the basis of the archaeological facts that have just been presented, and our knowledge of the modern tribes living somewhat under the same conditions we may be permitted a rapid reconstruction of their culture.

Food being an essential element of any culture complex, if not, in fact, the basic element, one cannot reasonably describe a culture without showing the influence of food on the type of material and social life. "Food forms a common and substantial basis upon which to build the culture complex of an area and to compare it with those of other regions. Nothing better than food has ever been found for that purpose as it exists at all times, everywhere, regardless of race, climate, altitude or degree of culture.'' (E. B. Renaud, ''Influence of Food on Indian Culture.'' Social Forces, Vol. X, No. 1, Oct. 1931. page 98).

We know that in the case of our Indians of the Plains the broad flat country which they occupied was inhabited by the bison or buffalo, which outnumbered all other species, and existed in large numbers furnishing the Plains Indians with not only abundant food supply, but also his clothing, and dwelling (skin tipi) from Texas to Canada and from the Rocky Mountains to the lower valleys of the western tributaries of the Mississippi and Missouri rivers. These Indians were essentially then nomadic hunters following their food supply and living in small bands. Their prayers and ceremonial dances were generally for obtaining food, protection and success in the hunt and war. Their dreams, visions, religion and mythology were peopled and influenced by animals, realistic or mythical. As a consequence their art was also affected in the same manner. The women were makers of fine bead-work on tanned skin preceded by very fine quilling. They also painted skins in geometric patterns using essentially the same designs. The men, preferring realism, decorated robes and tipis with hunting and war scenes. Fetishes and medicine bundles showed plainly the great influence of the animals eaten and worshipped.

To the west of this Plains area was the so-called Plateau Area (C. Wissler, "The American Indian"). Here the buffalo was not plentiful except in the lower foothill valleys. More prevalent were elk, deer, coyote, bear, cat, lion, etc., mentioned before in the list of fauna.

The people of the Park had some of the traits of culture of Plains Indians. They were nomadic but on a restricted scale because they were mostly trappers. They supplemented their meat supply with a variety of berries, grasses, seeds, nuts, and fish from the mountain streams. These prehistoric occupants of mountains and parks were the predecessors if not the ancestors of the modern Ute and Shoshoni while the Arapaho came very late in the Plains, and made incursions into the neighboring mountain districts, in fact, H. L. Scott says, "In 1806 Arapaho were still camped east of the Black Hills in South Dakota." (Early History and Names of the Arapaho." p. 549; 560).

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ETHNOLOGY

By Dr. Ralph L. Beals

INTRODUCTION

Colcrado was the home and the battle ground of two well known tribes, the Ute and the Arapaho. Occasionally the Shoshoni or Snakes from the north ventured into the region or the Cheyenne camped with their Arapaho friends but the known aboriginal history of the state centers about the two tribes first mentioned.

Because of their uncommunicativeness and unfriendly attitude the Utes have never been thoroughly studied. Neither is there any complete study of the Arapaho, although intensive studies of special features, notably myths, ceremonies, and designs, have been made. Consequently this account necessarily relies on the published studies of the Cheyenne, friends and allies of the Arapaho, for some phases of material culture.

The Arapaho are typical Plains Indians, horsemen, buffalo hunters, warriors. Yet there is evidence that they formerly lived in Canada near the Red River valley. There they were probably farmers. Drifting southwest in company with the Cheyenne, they met the village Indians of the Missouri, the Mandan and Hidatsa. From these they may have obtained many of their characteristic Plains traits. These contacts probably began before the Arapaho crossed the Missouri. After crossing the Missouri they gradually split into the northern and southern bands, beginning about 1800. In 1806 Arapaho still camped east of the Black Hills, but the southern band by this time had entered Colorado. What tribe they displaced is unknown.

The friendship of the Arapaho and Cheyenne was so close that they shared their ranges. Nevertheless the Arapaho were usually west of the Cheyenne. The joint territory was the eastern half of Colorado and southeastern Wyoming, including the high plains and the eastern portion of the Rocky Mountains.

The Arapaho originally consisted of five tribes with slightly different languages. Three tribes were absorbed by the Arapaho proper in their migration. The fifth is the Gros Ventré in the north. These tribes had nothing to do with the present division into the northern and southern Arapaho. Arapaho is an Algonkin language but differs considerably from Cheyenne which is also Algonkin.

There is no evidence that the Ute ever occupied any other region than that in which they were first found. The exact boundaries are unknown but they lived in all western Colorado and in eastern Utah south of the Uintah mountains. At least some of the time they held part of northern New Mexico and a corner of Arizona, attacking the Navaho and the Rio Grande Pueblos. The present division into northern and southern Ute is believed to be purely geographical.

Originally the Ute were a typical Great Basin people who received some Plains culture in relatively recent times. Their spectacular and typically Plains ceremony, the Sun Dance, may be as late as 1890. Linguistically the Ute speak a Shoshonean language. Tribes speaking related tongues occupy all the Great Basin and much of southern California.

The Ute and Arapaho today number about 2000 each. Probably they never amounted to more than 4000 each.

THE ARAPAHO

FOOD SUPPLY

As with other Plains tribes, the Arapaho practically lived from the buffalo. It supplied most of their food, clothing, housing, bedding, food containers, thread, weapons, and tools. Every part of the buffalo had some use and it would require pages to even list the things they made from the buffalo. Its hooves made glue, its bones provided tools and weapons, its beard and tail were ornaments, its horns shaped into spoons.

Buffalo and elk were driven over cliffs. Buffalo were also hunted on horseback, using a spear in preference to bows and arrows. In winter they were hunted on snowshoes. Mountain sheep were shot with bow and arrow and antelope were driven into pits or over cliffs. Eagles were caught by hunters hidden in pits to secure their feathers.

When possible other foods were used to vary the diet. Fish, caught in weirs, and turtles were eaten, although most Plains tribes spurned them. Women collected every conceivable plant food: roots, berries, and seeds. Most important was the pomme blanche, acorns, choke cherries, sarvis berries, plums, sand cherries, and grass seeds. Many were preserved for winter use.

Meat was often broiled but practically all foods were boiled. Acorns and grass seeds generally were made into mush. To store food it was usually dried, often pounded fine, and put in bags wrapped in raw hide enevelopes called parfleches. It was stored behind the beds or mattresses in the tipis. Food was usually cooked in rawhide containers into which hot rocks were dropped.

HOUSES AND HOUSE FURNISHINGS

The Arapaho tipi probably was very similar to that of the Cheyenne. New lodges were dedicated with ceremonies performed by specially qualified men. The two tribes often dedicated each others lodges. The tipi was nearly circular in ground plan and consisted of a carefully fitted cover of buffalo hides over a conical foundation of poles. More important people had their tipi covers carefully painted with designs and figures. Inside was tied a fitted lining to permit ventilation without drafts. The lower part of the lining formed a floor covering upon which people sat. Everything connected with the tipi was women's work. The Arapaho were unique in building woven fences as windbreaks near the tipi.

The most important piece of furniture was the bed and backrest. These were made of slender willows strung on cords running through holes at each end. The backrests, one at each end of the bed, tapered toward the top and fastened to a tripod of poles. The Arapaho again were unique in sometimes raising the bed on poles resting on forked posts set in the ground. The backrest was often elaborately decorated. Behind the bed were stored all the family possessions, including surplus food.

The Arapaho had ceased making pottery before their arrival in Colorado. Holes dug in the ground were lined with rawhide to make cooking vessels. Plates were made of rawhide and bowls were hollowed out of cottonwood knots. Spoons and cups were made of mountain sheep horns. Formerly basketry cups and trays were made but now only small coiled basketry trays for dice games are made. Stone mauls, wooden root diggers, and combs of porcupine tails or buffalo tongue, and numerous bags and rawhide parfleches were part of the furnishings of ever house.

DRESS AND ORNAMENT

Men's dress was a shirt, leggings reaching from the ankles to the hips, breech-cloth, moccasins, and a blanket of buffalo skin. Their hair was braided or tied together in front of the ears, or tied in masses over the ears with a scalp lock at the back. Very old men did not comb their hair but kept it in a bunch over the forehead.

Women wore an open-sleeved dress nearly to the ankles, moccasins to which were attached leggings reaching to the knee and a blanket. The skin blankets of both sexes were painted or embroidered. Women's hair was worn loose with paint upon it. Old women's hair usually was tangled. Women generally had their faces painted, while both sexes painted for all ceremonies except in case of mourning for the dead.

Almost on a par with a man's war exploits was the quilling of a buffalo robe by a woman unassisted. Among the Cheyenne women who had so embroidered a robe became members of a special woman's society and accorded high honors. Such robes were always given away, usually to a relative.

WEAPONS AND WARFARE

Bows were backed with sinew glued on one or both sides. Some bows were made of horn. The bowstring was twisted sinew. The Cheyenne made arrows of cherry, currant, or red willow shoots, cut to a careful measure. After drying they were straightened with bone or horn tools and rubbed down between grooved sandstone slabs. The shaft was grooved and pushed back and forth in a bone implement with a hole which rubbed the shafts down to uniform size. Three feathers split in half and carefully trimmed to the same size were glued to the shaft and wrapped with sinew. The point of bone, stone, horn, or sole of a buffalo hoof was fastened on with sinew. A nock for the string was made and the end roughened to give a firm grip. Some arrows had detachable foreshafts. All were painted with ownership marks.

Knives were made of stone or bone, particularly the bosse rib or dorsal spines of the buffalo. Stone axes were used as well as clubs of stone encased in skin and with flexible handles.

Lances were favorite weapons, usually a wooden shaft six to seven feet long with a chipped stone point bound to the shaft with rawhide or sinew. More elaborate forms were used ceremonially.

Shields were of great importance largely because they had magical and ceremonial properties. They were made of a circular piece of dried and toughened buffalo bull hide.

War was the way of achieving social distinction. With few exceptions, a man who had not accomplished certain actions in war could have no important social rank. These actions made war into something of a game. Touching an enemy alive or dead, stealing a horse from a camp, taking away an enemy's gun or his bow and arrow, were all more important deeds than slaying a warrior. The Arapaho were always friendly with the Cheyenne and much of the time with the Kiowa and Commanche but were enemies to all other tribes.

LEATHER WORK

To tan hides the blood, fat, and flesh were removed with a scraper made of slate or quartzite. The hides were thinned with a flesher, commonly a chisel-shaped instrument made from buffalo leg-bone, and roughened with a buffalo humerus cut off below the articulation. If the hair was removed, a bone implement like a spoke-shave was used. Pounded soaproot, brains, liver, and grease mixed together was rubbed into both sides and the hide wrapped up over night. It was then dried and softened by pulling back and forth over a rope or through a hole in a buffalo shoulder blade.

Leather was used for clothing, sewed with sinew thread, and leather or rawhide was used for shields, saddles, ropes, moccasins, and various bags and containers, particularly the parfleche, an envelope-like rawhide "trunk." In the decoration of these parfleches the most typical and best studied Plains Indian decoration appeared.

Cradles were skin covered and elaborately and symbolically decorated.

MISCELLANEOUS

There is little Arapaho data on minor manufactures. Cheyenne musical instruments include drums, rattles, whistles, and flageolets. Horse equipage is of Spanish derivation. Formerly the horse-travois was used, later the dog travois. Light willow cages were placed on these in which small children were carried. Of numerous games, dice and hoop and pole were possibly the most important.

SOCIAL ORGANIZATIONS

The unit of social organization was the family. The father is head of the household. More than one wife was fairly common and usually each wife had her own tipi. The most honorable form of marriage was by purchase and generally marriages were arranged with the consent and knowledge of the parents. Elopements occurred, however, but were usually forgiven. There was some courtship. Young men met girls outside the tipi, often in daylight, and talked to them. Upon marriage the young couple usually set up their own household, erecting their tipis near one or the other parents.

There were six men's societies which had not only social but ceremonial and religious functions with dances and elaborate costumes. As men grew older, they progressed from one society to another, advancing in a group by learning to perform the ceremony of the next highest society. Two societies of young men are sometimes placed in this category, making the total eight instead of six. Within each society are distinctive grades awarded for such qualities as bravery in war. Some societies policed the camp on certain occasions such as communal buffalo hunts; others had "no retreat" obligations in warfare; others performed special rituals for tribal welfare.

POLITICAL ORGANIZATIONS

The Arapaho were divided into four bands, each with a head chief. The four head chiefs ruled the whole tribe, but apparently there was no one head chief of more importance than the others. Only when all four bands camped together did these meet and the camp was arranged in a great circle in which each group had a regular place. New chiefs may have been elected but probably there was no formal machinery. Chiefs were chosen for bravery, wisdom, and generosity. Except on special occasions such as the communal hunt they had little authority. They determined the direction of travel on the march, the location of the camps, and arbitrated rather than settled disputes.

RELIGION AND CEREMONIES

The great ceremony of the Arapaho, as of most Plains tribes, was the Sun Dance. This is a great ceremony at which all the tribe meets together. It was held annually as a rule but was given by an individual who had taken a vow as a result of sickness or some other crisis in his life. Sometimes it was given twice in the same year if more than one person made a vow; some years it might not be given at all. It involved a number of ceremonies really, each with elaborate regalia, special paintings of the performers, and building special lodges and altars, all lending themselves to spectacular display. The center of the ceremonies was the great sun lodge, a round roofless structure with a great pole in the middle. Here took place the spectacular public ceremonies. In smaller lodges occurred special ceremonies connected with fetish bundles containing sacred objects which only the few specially qualified people might see. Some of these bundles have never yet been seen by whites and the contents are only vaguely known.

Another feature of the Sun Dance which has always aroused much comment is torture. This is undergone voluntarily in order to obtain spiritual rewards and possibly a vision. Men dance about the center pole pulling on connecting cords attached to skewers passed under their skin or drag buffalo skulls about camp by cords similarly attached. Despite its prominence in European eyes, self-torture is a secondary part of the performance which is primarily intended to secure the health and well-being of the whole tribe.

Other ceremonies of some importance are distinctly modern. One is the Ghost Dance, which reached the Arapaho about 1890. While still occasionally performed, it has lost much of the original fervor which contributed to the Sioux outbreak of 1890, for the promised return of the buffalo and of the dead have faded from imminent events to something to occur in the remote future. A portion of the Arapaho also follow the modern Peyote cult, a curious part-Christian cult which involves the use of a cactus narcotic (peyote) which causes visions. Many of the tribe do not believe in this, however.

Aside from the few elaborate ceremonies, the main feature of Arapaho religion is its individuality. Practically every man made one or more attempts to secure a vision by going to a lonely place, fasting, going without water, praying, and sometimes indulging in self-torture or mutilation by sacrificing a finger joint. If successful he saw in his vision some supernatural being, usually an animal, who became his guardian spirit and endowed him with supernatural power. Usually he was informed that he would be successful in war, would amass much wealth in horses, or become a great doctor. Generally he was taught special songs and instructed in individual ways of dress on certain occasions. No one else would use these songs or special modes of dress.

These visions were sought primarily to further personal desires for greatness in war, wealth, etc. All a man's success in life he attributed to the intervention of these supernatural agencies. Sometimes, but not often, he learned to cure people as a result of visions, generally by sucking out intrusive objects, saying prayers, giving herbs, or by bleeding the patient. There were various pieces of paraphernalia used by individuals such as amulets, medicine bags, and cupping instruments.

THE UTE

FOOD SUPPLY

The principal animal foods of the Ute were buffalo, elk, deer, and rabbits. Buffalo were chased on horses but were relatively unimportant. Instead of the Plains communal buffalo hunt, there was a communal rabbit drive. Instead of driving buffalo over cliffs, deer were driven between the wings of a sage brush fence into deep pits. Rabbits were relatively very important. The Uintah had rabbit nets of bark fiber; the White River did not. Jackrabbits were hunted on horseback. Sometimes the brush was burned in a circle and the rabbits killed when they ran out. Probably dogs were used in hunting. The

Uintah caught eagles for their feathers in Plains fashion, the hunter hiding in a pit.

Fish weirs were made of willow withes woven between stakes. The fish were caught with the hands as they became entagled in the weir. The Uintah shot fish with barbed arrows from a grass raft. Fish were eaten fresh, cut up and boiled in earthen vessels, or were split open, boned, dried on a frame, and stored in caches for fall and winter. Women did this.

Ute women gathered berries, grass seeds, sun flower seeds, and tule seeds, as well as various roots in burden baskets supported by a strap passing over the forehead. Berries and probably other foods were dried and placed in baskets stored in earthen covered pits. Chokecherries were mashed and dried in round lumps which were stored in bags. Sunflower seeds were ground, boiled, and then dried for storage in caches. An unidentified root, wici, was pounded up for food, while the seeds were used as soap.

The Utes used the flat grinding stone or metate and muller to grind seeds, a Basin rather than a Plains trait. They had both flat and trough-like metates.

As the Ute all had pottery, this must have been used for cooking purposes but there is little published information. On trips where pottery would be inconvenient, presumably they used skin vessels as in the Plains or basket boiling as in the Basin. In either case hot stones would be dropped into the container.

HOUSES AND HOUSE FURNISHINGS

The Ute use a small carelessly made Plains-type conical skin-covered tipi which recalls their tribal nickname of "bad lodges." On the rare occasions it was painted no pictures were made. Their tipi was always erected on a four pole foundation and usually had a total of eleven or twelve poles with two additional poles for regulating the smoke hole. Poles were only about 17 feet long, shorter than is common on the Plains. About ten elkskins or buffalo hides were used to make the cover, considerably fewer than for an Arapaho or Cheyenne lodge cover.

The Ute remember a brush or bark covered structure preceeding their use of the tipi. At Ouray as late as 1912 were observed tipi-like structures covered with brush which were said to be in the old style. The house was either abandoned or burned on the death of the owner. In summer a shade is used, a rectangular brush covered frame-work.

A special temporary structure made of brush is used for several purposes ,especially by women during the menstrual period. A sweat lodge of some sort was used also.

No data exist on the household equipment of the Ute. Pottery, baskets, and the metate and muller were undoubtedly included.

DRESS AND ORNAMENT

In fairly early times men wore elkhide moccasins, deerskin leggings, a cloth breechclout, a shirt, and rabbit skin, elk, or deerskin blankets, and probably buffalo robes. The Navaho blanket was adopted at an early date. Blankets or robes were made by women. Painted elkskin robes are illustrated for the Ute also.

Women's dress is unknown but fringed buckskin garments of Plains type were worn by both sexes in the middle 19th century. Women's hair formerly hung loose, parted in the middle. Men braided the hair, two braids hanging behind the ears. Men and women plucked the eyebrows and men plucked the facial hair. Women wore a hard-soled Plains type moccasin.

WEAPONS AND WARFARE

There is little data on Ute weapons. They had bows of cedar, pine, and other woods. Probably they were armed similarly to the Plains tribes they fought and practised similar war customs. They were a war-like people, a non-Basin characteristic. They fought the Navaho, Kiowa, Apache, Commanche, Shoshoni, and Arapaho. The Arapaho said they preferred to fight the Ute because they were the bravest of all their enemies.

BASKETRY

Biconical and pear shaped bottle and crude openwork gathering baskets are the only twined work made by the Ute. The distinctive conical burden basket and abundant twined basketry of the rest of the Basin is lacking. Ute burden baskets were coiled with a flattish or rounded bottom and are of a peculiar two-rod coiling which is the one distinctively Ute type of basketry. Shapes and designs suggest Apache affinities. Bowls, plaques, and possibly basketry hats were all made in coiled technique. Distinctive Basin twined seed beaters and trays were lacking.

WEAVING

There is no mention of any weaving among the Ute. As they used rabbit skin blankets, they must at least have woven these.

POTTERY

Pottery-making has long been forgotten. Only a few women are said to have ever known the technique. Pottery was crude and undecorated.

LEATHER WORKING

Skins were prepared for tanning by first removing the flesh with a serrate flesher, then scraping off the hair with a beaming tool made of deer shinbone. The hide was then wetted, stretched, and dried. Wet deer brains were applied and the hide was then smoked on both sides by fastening it over a tripod beneath which burned a smouldering fire of willow. Instead of smoking, the hide was sometimes smoothed and softened by rubbing with a stone.

MISCELLANEOUS MANUFACTURES

Porcupine quill embroidery was a non-Basin manufacture of the Ute.

String was made of deer sinew or sagebrush bark rolled on the thigh. Some string was three-ply, whereas most primitive string is only two-ply

The Uintah used a grass raft for fishing which held two to five men. When not in use, the raft was inverted and allowed to dry. These were evidently similar to the tule rafts of other regions.

Two types of cradle are employed, one of the California-Basin type made of basketry. The other is a distinctively Plains cradle of buckskin stretched over a wooden frame, rounded at the top, tapering toward the bottom, and with a sort of awning over the head.

The handgame, a guessing game in which an object is concealed, probably was the most important amusement, but there were numerous other games.

SOCIAL ORGANIZATION

The family was the important social unit among the Ute as among the Arapaho. A southern Ute man who wanted to marry would send a friend with a proposal to the girl's father. If the girl and the family in council approved, the man came to the house and stayed over night. After several days he took his wife to his own or his father's house. First cousins were not married. If a man were not a good hunter, he had difficulty getting married. Such a man might store up food against a time of famine; then some man would offer his daughter to keep the family from starving. Adultery was punished by the aggrieved party on the person of the paramour or his property. A wife might strip her husband's mistress even of her clothes and she had no redress.

Men were usually not present at births. The navel cord of a newborn child is buried in an ant hill or tied to the cradle in a buckskin wrapping; if thrown away, the child will be "foolish." The father cannot eat meat or drink cold water for four days, the mother for a month, after the birth of a child. The father should run around in the hills all day but must not hunt. Neither parent may rub his eyes or scratch himself except with a stick.

Names were given early in life and usually have some meaning, but nicknames acquired through some unusual action are generally used. Names of the dead must never be spoken.

The dead were usually buried at a distance from the camp. The tipi and personal property of the dead were burned and his dogs and horses killed.

POLITICAL ORGANIZATION

The southern Ute formerly had three chiefs and one or more heralds. The chief exercised some authority when buffalo were to be hunted but there was no sort of police society. The Uintah claim that once there was a single chief of all the Ute. After his death, the Ute split up into a large number of small bands as at present. Each had a chief but his authority was almost nil.

RELIGION AND CEREMONIES

Ute ceremonies were extremely simple. Ute religion, like that of the Plains, was primarily a personal affair, but the form was very different. Supernatural power came through dreams rather than through visions. These supernatural powers were usually obtained to become shamans or doctors, whereas the supernatural power sought by Plains people was primarily to further personal desires. Even the full routine of the Sun Dance was undergone primarily to become a shaman or doctor. Nevertheless there was a shading out of supernatural powers from those which made a man a doctor to powers which merely helped an individual to a successful life.

The Ute Sun Dance, as mentioned before, was borrowed very recently and is a pale reflection of the Plains ceremony. There seems little of the torture element. Whenever a dance was held, a few men would dance throughout the performance, as others would dance perhaps one day. Those who danced the entire performance were hoping to get power to become doctors. Not everyone succeeded.

The only ceremony clearly indigenous to the Ute was the Bear Dance. This has been widely borrowed by Basin people but did not spread into the Plains. The dance is supposed to be mimetic of actions being performed by the bears in the mountains at the same time, i. e., when the bears come out of hibernation in the spring. It is now largely a social dance. An interesting feature is that men and women dance together, the women choosing their partners.

Those who became shamans or doctors cured often by sucking objects from the sick. There is always singing by the doctor, sometimes helped by others. Sometimes the doctor says the sickness is caused by dreams; at other times it is attributed to the evil influence of some other doctor. If such a doctor is identified, he may be killed. Even a doctor curing a man may be killed if the patient dies and it is believed the doctor's intentions were not good. Some doctors were believed to have the power of invulnerability and could not be shot.

CONCLUSION

This bare enumeration of the more essential features of Arapaho and Ute culture fails to do justice to many aspects of their life. These Indians led a relatively free existence, unhampered by many direct restrictions upon their conduct. Individuals and families were in general free to come and go as their wishes and circumstances dictated. Yet life must have been fairly well patterned by the set of their institutions and beliefs. No one required an

Arapaho to believe in or seek visions. On the other hand the unbeliever would be accorded scant respect in tribal affairs because his tribesmen would find it impossible that one who was not aided by supernatural powers could have good judgment or be attended by success in his undertakings. Similarly, one who failed to follow the warpath in the traditional way could not achieve social eminence unless possessed of extraordinary spiritual gifts.

In Arapaho life the men were the hunters, warriors, and to a large degree the ceremonialists, performing the bulk of those rituals upon which tribal welfare depended. The women were well treated and a good woman was accorded great respect, but by the nature of the life, a woman was rather narrowly circumscribed in her activities to the routine of keeping house, gathering wild plant foods, procuring wood and water, and bearing children. Plains Indian culture was in the nature of things a man's culture.

In winter the Arapaho split into groups small enough to procure game and food from a relatively limited area. In summer the whole tribe usually came together for a time, staging the major ceremonies and engaging in group hunts of the buffalo. At other times in summer parties penetrated the Rockies seeking deer and mountain sheep or went on war expeditions. Thus there were marked seasonal contrasts in the mode of life.

The Ute probably followed a somewhat similar division of labor between men and women as well as a certain cyclical variation in the routine of life. The character of the environment, however, imposed certain limitations. The lack of large buffalo herds must have made general tribal assemblages more difficult, a condition expressed in the large number of indepedent bands without any permanent politic-cohesiveness. Due to the lesser part played by animal foods in the diet, no doubt the economic importance of women was slightly greater than among the Arapaho.

It is rather surprising that neither the Ute nor the Arapaho have been more thoroughly studied. The Arapaho are an excellent example of a tribe which has completely made over its culture within the brief span of between two and three centuries and which has become in this time one of the most typical of Plains tribes. Sadly disintegrated as their culture now is, much could be recovered by intensive effort among the older people.

The Ute are of very special interest for somewhat similar reasons. It is clear that formerly they were a Basin tribe with a civilization resembling that of the Paiute and other Basin tribes, a civilization reduced to its simplest possible terms yet admirably adapted to an extremely difficult environment and with a quite definite and individual character. In relatively recent times the Ute have learned and taken over from the Shoshoni to the north and the Arapaho to the east many elements of a culture once entirely foreign to them. Located on a cultural and geographical frontier, they afford an admirable opportunity to study the methods by which a primitive culture changes.

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