VOL. III, No. 1 JANUARY 1959

THE WASHINGTON ARCHAEOLOGIST

NEXT MEETING: SEATTLE CHAPTER - January 14, 1959 - 8:00 P.M.

MEETING PLACE: Room 122 - 1915 Terry

The January meeting of the Seattle Chapter will be a symposium at which the various artifacts brought by members from their personal collections will be discussed. The types of artifacts to be considered at this meeting are: gaming pieces, pipes, and smaller stone bowls. We are particularly interested in gaming pieces since size and shape may be significantly diagnostic.

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At the December meeting of the Seattle Chapter DR. FREDERICK THIEME predicted that there would be a major breakthrough in the field of archaeology as a result of adapting and applying the new disciplines which have been developed and are being developed in other sciences. In this connection Dr. Thieme described the research program at the University of Michigan which he initiated and is now continuing in the fields of radio-active assay and protein analysis.

As a result of the basic research done to measure all the values of radio-active emission for the many radio-active isotopes, instruments have been developed which will measure alpha, beta and gamma radiation in varying degrees of accuracy making it possible to detect minute differences of radiation levels. The approach of the research group at Michigan was to perform gross radioactive assays of archaeological materials. Older materials were found to contain a greater amount of radioactive materials. Further, the difference in radiation levels between components of a stratigraphic column demonstrate a definite time-level relationship. The concentrations of uranium oxide are greater in older deposits. The difference in radiation counts can therefore establish a relative time relationship. This type of radio-active assay requires little time and only a moderate degree of skill to perform whereas a carbon 14 analysis requires a relatively long period of time and a high degree of skill. The work which is being done at the University of Michigan will develop the procedures which will give a new tool to the archaeologist.

The application of paper chromatography to archaeological materials will open -- has opened -- an entirely new technique of dating. The research at Michigan has established that archaeological organic remains are basically proteins. The rate of decomposition of proteins is relatively constant. The organic material

remaining is a group of amino acids. The initial research with archaeological and vertebrate paleontological materials has demonstrated a dating range of over 1,000,000 years. Recently a group of amino acids were found associated with an invertebrate fossil which indicates that this technique may apply to a large section of the geologic time column--in other words here is a dating technique that may extend beyond 500,000,000 years. A quotation from "A Manual of Paper Chromatography and Paper Electrophoresis," by Block, Durrum & Zweig, 1955: "The great advantages of paper chromatography lie in the simplicity of the operations and, in many cases, the relatively small expense of the equipment. Even the amateur can assemble a home-made piece of equipment to demonstrate the separation of organic compounds or plants pigments (Ingalls, 1953)." Chromatography is an analytical method for the separation of both organic and inorganic substances. Paper chromatography is the separation of substances from a mixture by the passage of solvent in a definite direction and selective fixation. Two-dimensional paper chromatography is the successive development of the chromatogram with two different solvents whose advancing fronts are at right angles to each other. The general procedure of this method is to first prepare the sample, i.e. reduce the material to the organic substances being analyzed; apply the sample to the filter paper; develop the chromatogram in the chromatograph chamber, one solvent for one direction and another solvent for the separation at right angles; spray the developed chromatogram with reagent to produce a colored spot or amino acid spot; and last, make a quantitative estimation of colored spots with a photoelectric densitometer.

The new techniques being developed in the physical sciences make it possible to use very minute quantities of material for analysis. The challange is being able to describe the archaeological problems in terms of these new techniques. The immediate challange Dr. Thieme presented to the Society is to include as many of these new techniques as possible in our future research programs.

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COLUMBIA BASIN CHAPTER ACTIVITIES: Reported by Nat Washington

The chief activity of the Columbia Basin Chapter for the past two months has been the excavation of a large cave on the east side of Lake Lenore. It is one of seven caves in the immediate vicinity and located on Federal land. Because arrow shaft fragments have been the most common artifact recovered we have called it "Arrow Shaft Cave" and the designation of the site is 45GR90.

Dr. Daugherty surveyed the cave, established levels and laid out the plan of excavation for the members of the Society. The day Dr. Daugherty worked with the group the following material was uncovered: (1) A mountain goat horn that had been boiled and flattened preparatory to being made into a tool, however nothing had been done to turn it into a tool. (2) The rib cage of a fish with hardened flesh adhering. The small stick that had been used to hold the ribs apart during drying was still imbedded. (3) Fragments of an arrow shaft (cedar). (4) Much matting and cordage. (4) Only one stone artifact, a fragment of a projectile point. On December 14th a party worked the site and recovered additional material of the same nature.

Election of 1959 officers of Columbia Basin Chapter will be held January 7, 1959.

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PALUS CHAPTER NEWS

Reported by Pat Allured

The December 17th meeting of the Palus Chapter was held in Todd Hall, Room 444, Washington State College, Pullman, Washington.

DR. ALLAN SMITH, Chairman, Department of Anthropology at W.S.C., gave a very interesting illustrated talk on the Ethnographic and Historical studies of the Kalispell Indians of northeastern Washington.

In 1936, Dr. Smith decided to study the Kalispell Indians because the area in which these Indians resided had been relatively free from infiltration of other cultures and outside influences such as gold miners. These factors made for an ideal study and he spent the following summers of 1937 and 1938 doing ethnographic studies. He related that there were no maps available other than the service station variety and he had to rely on historical data from the writings of David Thompson, which were found to be most accurate, for location of the sites which were to be studied.

From his ethnographic studies he has compiled a list of 153 sites that include winter and summer dwellings, weirs, hunting and red ochre sites, and they all have some historical, ethnographical, or archaeological material.

One of Dr. Smith's more interesting finds has been evidence of subterranean pit houses where none had been previously reported. He also related that there had been very little change in the aboriginal culture of the Kalispell Indians prior to 1850.

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1959 OFFICERS OF PALUS CHAPTER:

Executive Secretary	Dr. Richard Daugherty
President	Victor Moore
Vice-President	James Cottrell
Recording Secretary	Roberta Moore
Treasurer	Jean Cramer
Board Member I	John Cramer
Board Member II	Virgil Reynolds
Board Member III	Steve Allured

1959 COMMITTEE CHAIRMEN:

Laboratory Committee	Audrey Drake
Publication Committee	Steve Allured
Membership Committee	Louia Cottrell
Publicity Committee	Pat Allured

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ANNUAL REPORT -- 1958 WASHINGTON ARCHAEOLOGICAL SOCIETY

C. G. Nelson

The annual report is meant to be more an appraisal of the past year rather than a prognosis of the future. The standard technique is to compare the current year with the preceeding year. The 1957 report established various units of measure some of which are obviously more significant than others. A review of the membership roles shows a growth from 80 to 142 paid members. The major portion of this increase comes from the addition of the Palus Chapter at Pullman. The dates recorded in the Washington Archaeologist shows the Society being organized July 19, 1956, the Columbia Basin Chapter October 10, 1957, and the Palus Chapter April 23, 1958. The significance of this growth lies in the fact that there is not only an active interest in archaeology but an acceptance of the principle of conservation as it is related to archaeology. While this sort of accomplishment is not recorded in the journals, it is none the less an important contribution to the science, the fruits of which could be unlimited. To continue with the comparison, the meeting man-hours show an increase from 1,000 to 1,980. The Washington Archaeologist increased its output from seventy-four pages to ninety-three pages. In reference to activities: work was completed at 45KT6, a 64 page preliminary report on the 1957 work at 45KT6 was submitted to the Department of Interior; work was started at Brown's Ranch House Pit Site; survey and report written describing the caves of the Lower Grand Coulee; work was started at 45WT-18; testing and report written about 45WW61. During the year there were three public exhibits, two in Seattle and one at the Sun Lakes State Park. These exhibits are in addition to the regular exhibit at the Washington State Museum. The Society was represented at the Eleventh Northwest Anthropological Conference by Dr. Massey who presented a paper "45KT6, An Archaeological Site on the Middle Columbia." The Society presented the Washington State Museum with a group of thirty artifacts collected by Boris Malkin from the Karaja Tribe in Brazil. A carved bone pendant was recovered by a group of members from a site on Orcas Island and presented to the Washington State Museum (Wash. Arch. p 5, May '58). The comparison of statistics for the years 1957 and 1958 shows some progress and the conclusion offered in the 1957 report still holds -- "The statistics indicate a moderate degree of success for the group as a whole." The implication is the same for this year--a moderate degree means that there is room for improvement.

The most significant meeting of the year was held at Ephrata, November 1, 1958, at which time members of the Columbia Basin, Palus and Seattle Chapters framed a constitution and by-laws which formalized the chapter organization already in effect and created a State Council of Regents and the office of State Director, in order to realize the full effectiveness of a state-wide organization. Each Chapter has subsequently voted, making the new constitution and by-laws effective January 1, 1959.

There is an opportunity for the State of Washington to become a leading center in the field of anthropology. However, to accomplish this, all the interested groups will have to coordinate their efforts. Some group will have to assume the leadership in this respect. This is the challange which faces the Washington Archaeological Society!

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SEATTLE CHAPTER JANUARY MEETING PLACE: Room 122 - 1915 Terry

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PICTOGRAPHS OF WHISKEY DICK

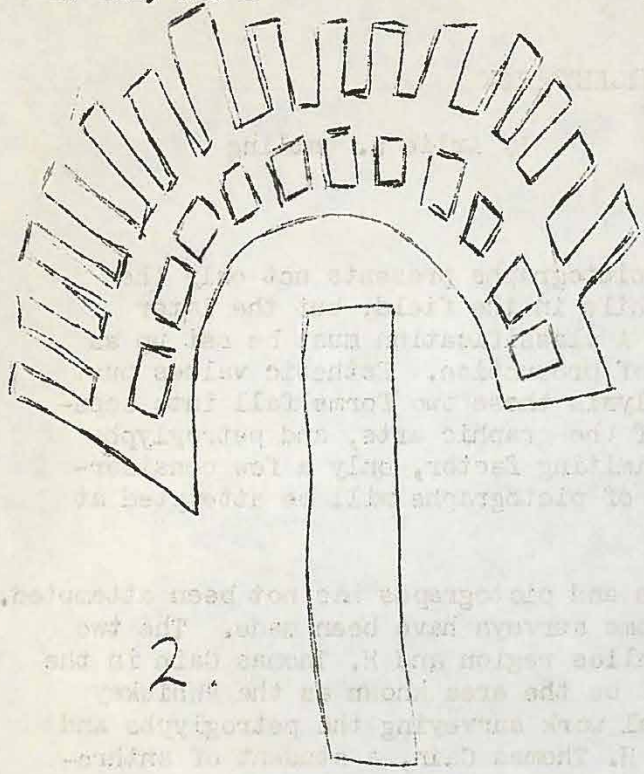
By Arlie G. Ostling

The work of documenting petroglyphs and pictographs presents not only the actual problem of recording techniques while in the field, but the later exacting work of analyzing each design. A classification must be set up as well as a study of the actual mechanics of production. Esthetic values must also be considered. In terms of art analysis these two forms fall into separate categories. Pictographs are part of the graphic arts, and petroglyphs of the plastic. With space and time a limiting factor, only a few considerations regarding mechanics in production of pictographs will be attempted at this time.

An analytic classification of petroglyphs and pictographs has not been attempted. Small localities have been studied and some surveys have been made. The two major works done by Mark Hedden in The Dalles region and H. Thomas Cain in the Columbia Basin. Type site for study will be the area known as the "Whiskey Dick Site" in the Columbia Basin. Initial work surveying the petroglyphs and pictographs of Whiskey Dick were done by H. Thomas Cain, a student of anthropology with funds provided by the University of Washington. This survey started in the Beverly, Washington, area (near Vantage) and extended as far north as Oroville. Noting and sketching the majority of designs he saw, it was the first work done in the area. Whiskey Dick located on the west bank of the Columbia River, actually begins up river from Skookum Chuck Canyon which lies between the site and Whiskey Dick Canyon proper. It may be reached by road by driving to the Clarence Scammon ranch and walking about a mile north along the river. Best approach however, is by boat with adequate landing directly below the carvings themselves. It must be emphasized at this time that Mr. Cain's time as well as funds were limited. Through subsequent work several minor errors in his report have been corrected.

Petroglyphs and pictographs in general tend to be found in separate locales. When the two are found in close association, the design elements tend to be somewhat unrelated. Much greater license is allowed the painter of pictographs, whereas the method of application of petroglyphs demands simplicity of line and form. High degrees of specialization have developed in the stylized designs of petroglyphs while variations are always possible with little effort and elaborations can develop without advanced planning in pictographs. It is altogether possible that the development of pictographs may have once been found to exist in many areas, but due to their poor lasting qualities are now gone. Thus it is possible that areas affected by yearly inundations may have had such paintings that now only reveal petroglyphs when they are exposed at low water. Present locales for pictographs appear to be in caves, and rock shelters or overhangs, or on columnar basalt not directly affected by weather.

The Whiskey Dick pictographs are not subject to inundation by the spring runoffs, unless such an occurrence reaching flood conditions should happen. The high water levels do reach directly below the lowest petroglyphs and pictographs. Basalt columns in this immediate area are subjected to year round seepage over them from higher levels. This seepage is the cause of breaking



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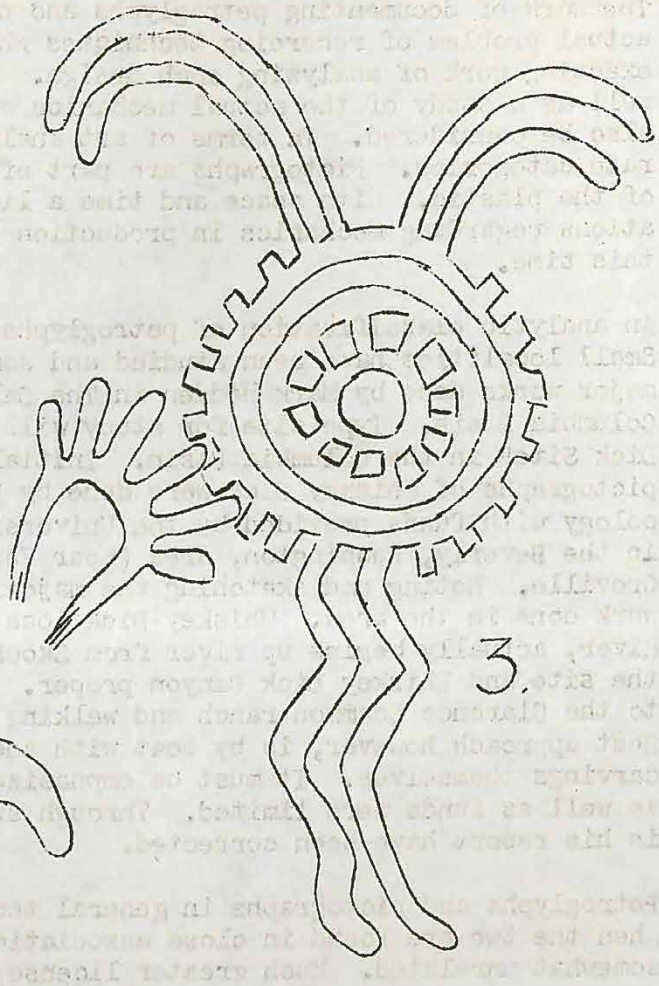

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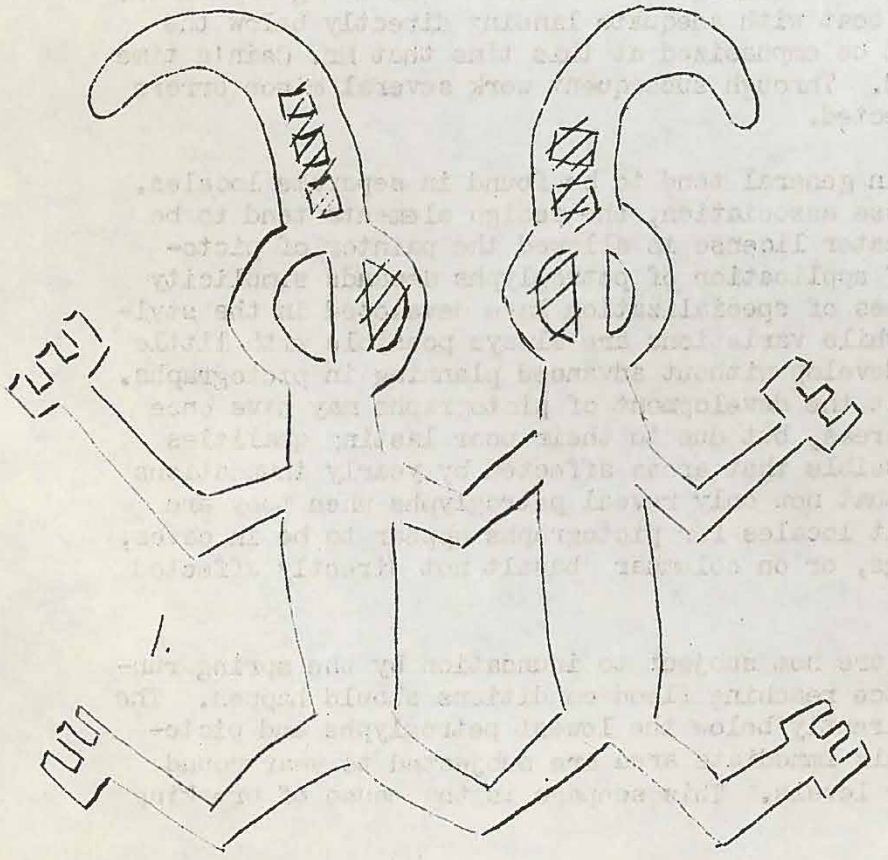

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and crumbling away of the basalt during the spring as the ice formed in the cracks of the basalt during winter months tends to push the rock away from the main columns and is released during the thawing period. This may account for the disappearance of some petroglyphs reported to be in the area.

After separating the two art forms - plastic and graphic - the next considerations regarding pictographs should be materials used and methods of application. Design element distribution must be considered also. Only three pictographs are now discernable at the Whiskey Dick Site, the first done in reddish ochre is the fairly well recognized "twins" figure common at the petroglyph and pictograph sites near Vantage. The unusual feature about this pictograph is its combination with a second "twins" design directly to the right and pecked to same dimensions joined together at the hands. This second design is a petroglyph. The second pictograph is located high on the basalt and can be reached only with assistance. In all probability the original footing has fallen away into the river leaving it now inaccessible. Two concentric arcs held together with bisecting lines that extend to form rays on the upper side of the arc, are mounted over a wide perpendicular band of ochre 10 inches high and 2 inches wide. This design has been thought to represent a headdress. Other localities do show in better detail similar design with stick figure like bodies sans head but adding appendages to the major stick body for arms and legs. This restricting of detail in pictograph design would give some basis to the opinion that in many cases pictographs along the Columbia River may be copies of petroglyphs. The third and last pictograph, and by far the most detailed of the three, is a much faded design of red and white on rough basalt surface of a double circle with rays. Two pairs of double appendages extend from and above the circles forming a "feeler-like" design. A single double appendage hangs directly down from the circles in a wavy "beard-like" design. A smaller circle with rays sets above and between the upper feelers. (See sketch) This design is by far one of the most detailed and interesting pictograph designs to be found in this area. There is evidence of over-painting of an unclosed ovoid in white to the lower left of the design. This ovoid has added a number of rays which appear to fit into the circle rays like cogs in two wheels. Whether it was part of the original design is questionable, but intensity of color in the ovoid would lead one to believe that it had been added at a later date. Cain in his report on this particular pictograph shows it to have a face with "feeler-like" appendages extending from the head, and a two strand beard. Due to fading of this particular design the general outline did not show up until photographed with infrared film.

The red color and its variants is the dominant color used in the Columbia River area. Black and white, also used, could be made from materials found directly within the villages, but red and its various degrees of brightness were derived from a material commonly known as ochre. This material is derived from native earths colored by hydrated iron oxide. Found in two types, one had a clayey basis and the other is a chalky earth. The former is in general the richer and purer in color of the two. Ochre is generally distributed in small beds or pockets, and rarely as extensive deposits. Some of the material required only pounding or grinding while the other requires calcination, that is, it must be subjected to heat. This latter process modifies the original color. The associated earth and its components markedly influence the color of ochre. While not seen here in pictograph work in its purest forms, ochre is known as pure hydrated ferric oxide, a bright yellow, called in commercial uses as Mars Yellow. In one area not too far from Baker, Oregon, at the old mining locales near Sumpter, it flows free in one of the small streams and slowly settles to

the bottom thickly coating the entire stream bed. Adhering instantly to anything it touches, though still soluble enough to streak or run when water is applied to the same surface, the early artists soon learned that to keep design outlines they must add some other ingredient to keep ochre stable. As the net result, it has been found that such materials as sheep or goat tallow and bear fat as well as fish slime were added, which not only kept designs more permanent, but also added a certain amount of gloss to the ochre.

The adherent qualities of ochre may account for development of containers for the medium. Beyond a doubt naturally hollow-top rocks were utilized in immediate vicinities, still it has been noted that paint pots were manufactured. In some instances as many as four sections to a single container have been observed. One such container from The Dalles region is now in the possession of Charles Hall of Yakima. Container depth may be from a fraction of an inch to about two inches. Pots may be plain or decorated with bands and figures. Sandstone and basalt are two of the materials used. Sandstone was much easier to work, but did not have the lasting qualities of basalt. Not all such dishes found are necessarily paint pots. It is quite reasonable to assume that these small dishes served multiple purposes to a people whose economy kept them semi-nomadic and household articles at a minimum. Besides red ochre with its variant shades, black and white, there has been noted some use of blue. It is not common, however; the most found in evidence along the Columbia River was in the vicinity of Wakemap Mound.

Various forms of application developed among the early artists. Archaeological investigations show that rock paintings have been applied to surfaces in a number of ways and methods vary in different areas. Cave sites along the Snake River in Idaho and in protected sites in canyons and rock-shelters of the Columbia Basin have pictographs which apparently are "finger-painted." Controlling texture by use of the finger is difficult, the overall design tends to be a series of short strokes as the pad of the finger becomes devoid of color more rapidly than the edge. Use of fingers on a rough surface leaves a design that fades, as fingers do not push the paint into the porous rock as thoroughly as a brush and the paint will slough away. Control is much greater when a brush is used, the fiber ends penetrate the rougher rocks and better control the medium. While no real evidence of brushes has been found in the Columbia area, by the lasting qualities of these pictographs it appears that such a usage had developed.

Both pictographs and petroglyphs, like any manufactured article, have probably developed over a long period of time and by many different groups with more or less varying cultures. Not all pictographs had originally religious connotations, and not all are trail or ownership marks. Some that were simple marks of identification may have taken on mystic or religious significance by people who entered the area many years after the original artists had left. At present one should not attempt to place single designs or design elements to any single group. People moving into the Columbia Basin where such designs were present either accepted or rejected what they found for their own culture. The Guardian Spirit belief that was known to exist in the area may be represented in some of these paintings or perhaps it may have undergone some change itself by the very fact that these paintings were present. The Columbia River area, rich in prehistory of people that used its resources for their way of life, has yet much to divulge to the person doing archaeology along its banks. Slow extensive work, and careful accounting of each site and its surroundings should be the aim of all people whose interests are to preserve such a prehistory.

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TIPI RINGS

Carling Malouf
Montana State University

(Abstract of paper read at Eleventh Northwest Anthropological Conference)

Stones arranged in circles are common throughout the northern and northwestern Plains region and other parts of the West. Almost everywhere they are called "tipi rings," although no serious studies heretofore have been made by archaeologists to ascertain their real use or purpose. Amateurs have speculated widely on their origin and use, while archaeologists have up to now given them little study.

Only two professional papers to date have offered descriptions of individual rings and cluster arrangements. Two summers' work on a pipeline project between Green River, Wyoming, and Denver, Colorado, provided an opportunity to obtain more detailed data on tipi rings which may, it is felt, provide solutions to the problem of the rings and their origin.

Tipi rings were found as far west as Rock Springs, Wyoming. The clusters were small, however, and consisted usually of two or three circles of stones arranged within a few yards of each other. Moreover, the rings themselves were relatively small, ranging from 12 to 15 feet in diameter. The clusters themselves were several miles apart. Throughout this region occupation sites were considerably more common.

Eastward across the Wyoming Basin and over the Laramie Mountains more and more tipi ring clusters were noted. Furthermore, the clusters contained more rings and the circles themselves were larger and more numerous. Instead of a simple line of stones around the periphery there were more complex arrangements. Some clusters contained as many as 85 rings, and one had 135. Between Cheyenne, Wyoming, and Greeley, Colorado, en route toward Denver, the ring clusters continued to be abundant. South of Greeley, however, none were found. Intensive cultivation in this area doubtless accounted for the destruction of thousands of these remains.

Certain conclusions were made after the survey was completed. In high elevations, as atop the Laramie Mountains, the rings were on ridges and crests. Springs, however, were always located below. In lower elevations, as along streams in the Plains, the ring clusters were in bottomlands or on low terraces alongside creeks. In all instances they were reasonably close to fuel and water supplies. Where water and timber were lacking along the stream beds the rings were also missing. In several clusters artifacts were found, mostly scrapers, knives and other domestic tools. Occasionally a corner-notched point was found, too. In no case, however, were fire hearths found in or among the rings. Dozers were used to uncover wide areas around ring clusters in an effort to locate possible hearths but none were found. Many rings showed special internal features such as rock piles or alignments of various kinds. Not all rings were circular; some were ovoid or even somewhat square in outline. It is possible that some rings with internal features are the remains of domestic structures converted to a special religious lodge. This is known ethnographically to have been a not uncommon practice.

It was also learned that different types of structures can leave similar residue. Rings over 20 feet in diameter, for example, may be a part of a former corral-like structure which had five or six sides of logs cribbed. After the log sides deteriorated the rocks remained in a circular pattern on the ground. Such structures may still be observed near Billings, Montana.

Thus, circles of stones in other parts of the West, such as those reported in western Colorado or in the Great Basin, do not seem to have been the remains of tipi lodges.

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THE METHOW RIVER SURVEY and FORT OKANOGAN, 1957

Earl H. Swanson
Idaho State College

(Abstract of paper read at Eleventh Northwest Anthropological Conference)

Under sponsorship of the State Parks and Recreation Commission of Washington, the newly created State Archaeology Division, and the State College of Washington, an archaeological survey of the Methow River was made and excavations conducted at the Astor Post, the first Fort Okanogan, during the summer of 1957.

The Fort Okanogan materials are not yet analyzed, and a considerable amount remains to be done. Still, it is possible to note that rebuilding took place at the Astor site, that adobe was used in house walls, and that the palisades utilized upright posts with the space between them faced with cedar planks. The dimensions and proportions approximate the map made by Ross Cox, though there are some curious deviations. For example, one of the bastions could not be found.

The Methow Valley contains housepits in its upper reaches with a terminus post quem of about 1600 A.D. Both circular and square house depressions were located and some tested. One site near the river mouth could be correlated with the Cayuse II-III phases (post-1300 A.D.) of the Vantage region. Pictographs of Northwest Coast style were found at one site, and "Jadite" celts and clubs were present in the upper valley also. Talus pits were excavated, but all proved to have had a different use than storage or burial. The latter uses characterize most of the Plateau, but these of the Methow appear to have been a type of earth oven, and, as such, radically different from earth ovens elsewhere in the Plateau. Notable also was the great depth of house depressions in the upper reaches, where the center is as much as four feet below the rim.

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Additional abstracts of papers presented at the Eleventh Northwest Anthropological Conference will be printed in the ARCHAEOLOGIST from time to time as space permits.

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