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ART EDITOR . . . . . Everett Clark

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Cover: Nezperce Baby, from the files of the Idaho Historical Library

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ETHNO HISTORY AND TIMBER BUTTE OBSIDIAN

By
Merle Wells
Idaho Historical Society
1980

In the summer of 1963, an expedition in search of Eagle Eye's grave came upon a spectacular source for obsidian that served generations of Indians in southwestern Idaho. Organized by Professor Sven Liljeblad of Idaho State University in response to a request from Josephine Thorpe, this group included a number of Eagle Eye's descendants: his great-grandson (and Mrs. Thorpe's son) Frank, as well as some great-great-grandchildren. Mrs. Thorpe, who had attended Eagle Eye's funeral on top of Timber Butte, wished to return to her grandfather's grave, and I promised to find them a practical route to the site. On the way, we toured Dry Buck basin (see map), where Eagle Eye and his people had worked in a sawmill when Mrs. Thorpe was a child. There we found some of Eagle Eye's apple trees (or their descendants) that Mrs. Thorpe remembered.

An interesting basin west of Banks, Dry Buck had provided a secluded home for the last of Idaho's non-reservation Indian bands. Eagle Eye had led a prominent group of mountain Northern Shoshoni—known to the whites as Sheepeaters—from at least the time of the Snake war of 1866-1868 through the rest of the nineteenth century. Identified as a Weiser band, Eagle Eye's group had evaded disaster during General George Crook's Snake war campaigns. Eagle Eye also eluded army operations during the Sheepeater campaign of 1879, which apparently never connected with Idaho's western Sheepeater band.

Eagle Eye's crew managed to stay out of sight of white prospectors during 1880, although A. F. Parker searched their country quite thoroughly that year. Then during the following spring, a trapper in lower Long Valley noticed their success in avoiding army scouts and in maintaining their aboriginal homeland free from reservation problems. Norman B. Willey reported that "a ripple of Indian excitement" followed this unexpected discovery of

> . . . a couple of Indian boys near by. He was not himself observed, and he watched their motions; they were endeavoring to catch birds along the river, and when out of sight, he made a bee line for the settlement in Little Salmon, some 25 miles distant[.] The family were gathered in the most central place, and the next day the able bodied men of the neighborhood, who had sufficient arms, returned to the scene. They found the camp, but the Indians had left, taking the old Indian trail across the divide that separates Long Valley from Indian Valley, in the direction of the latter settlement. Their intentions were evidently friendly. The party appeared to consist of three bucks, two squaws, the two boys and a child. A visit to their camp indicated that they are entirely destitute of ammunition. They had peeled bark from a great many trees, and had been scraping, and apparently living on the soft portions of it, but there was not a bone or feather to be found, although game was plenty thereabouts. They are supposed to be a well known Indian named Andy Johnson, whose whereabout had not been before satisfactorily accounted for, who with his family and friends are seeking the white settlement through starvation. News of their reception and treatment in Indian Valley is awaited with some interest. (Willey, 1881)

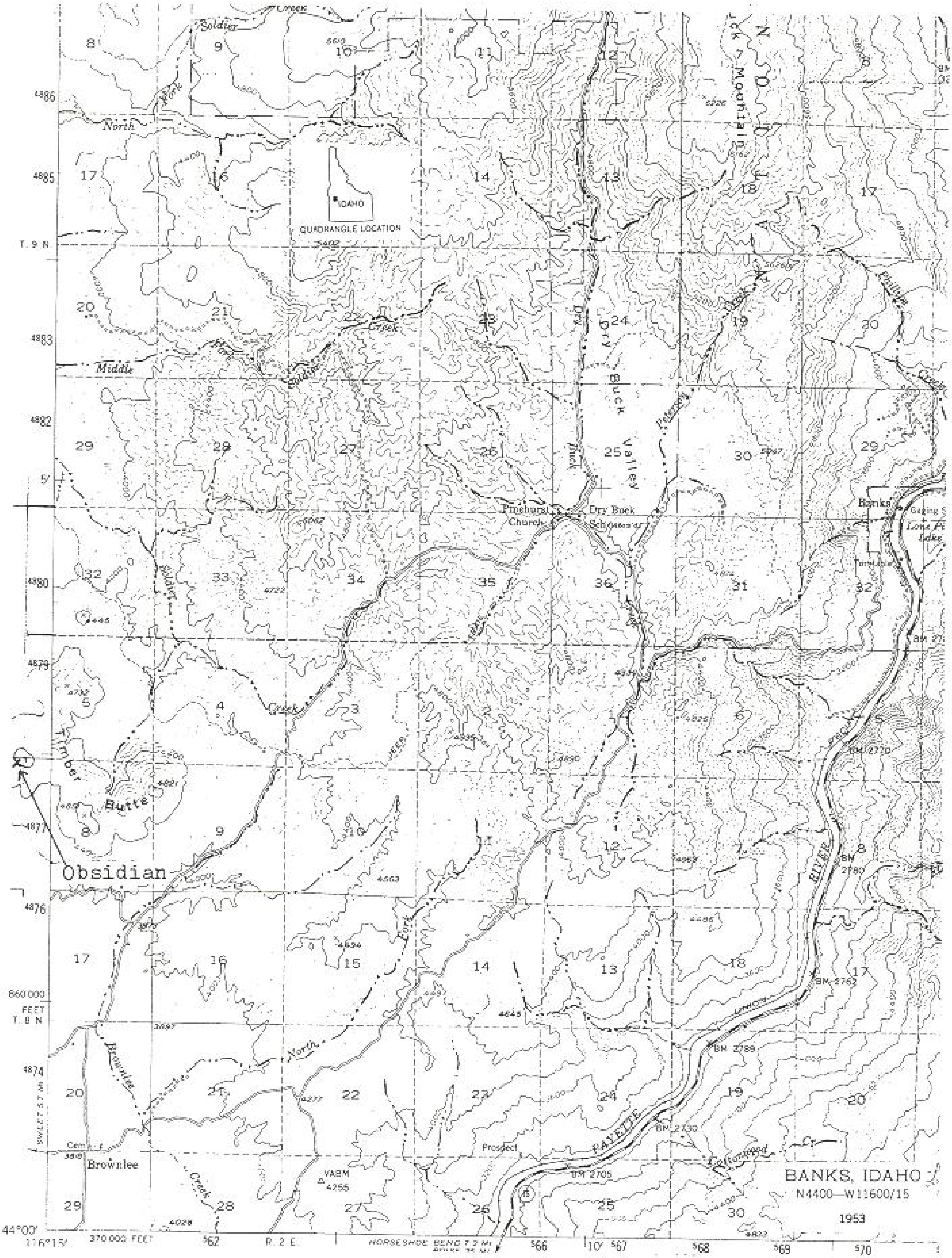
Parker identified Andy Johnson as Eagle Eye's brother-in-law in an unflattering note appended to Willey's account:

> Andy Johnson has the credit of having stampeded Bill Monday's horses in Indian Valley, which resulted in the ambuscade and massacre of Monday, Hailey and Grosclose, while pursuing these Indians, at the Falls of the Payette, Aug[.] 20, '78; Three-fingered Smith, the only man of that party wh[o] escaped, and whose mule was killed under him and himself shot through the right shoulder and left hip at the same time, told us at Little Salmon, three days after the killing, that he distinguished the sound of Andy Johnson's rifle in that terrible affair, hence we shall await with interest tidings of his reception in Indian Valley and shall be sadly disappointed if Weiser friends fail to make a sensational item out of the return of this treacherous skunk.

By 1888, Eagle Eye had settled with his people at Dry Buck, where his small band finally attracted favorable notice in the *Idaho Daily Statesman:*

> In Dry Buck Valley, between upper Squaw Creek and High Valley in Boise County, in this territory, live the last relics of several different tribes of the aborigines of the once famous tribes of Idaho. There are seventeen women and children and three bucks. One of the latter claims the age of Methuselah and from his facial features one would admit him to be an antediluvian [sic]. They cultivate a small piece of land and raise all the vegetables they require and wheat enough for flour. The country in that vicinity abounds in game and fish, which they live on in part but so make it their main dependence. They came from no man knows where and were occupants of that valley for some time before the nearest white settler knew of their presence. Only of late has the inborn hatred of the red man for the white been overcome. They are employed by the sawmill company in that vicinity in gently tilting the monster sawlogs cut at the mill. Quite a number of Emmettsville philanthropists have contributed to the material comfort and welfare of these poor depraved people. Great and glorious old party now dominant to exercise that professed charity they always claim. The noble red man has always been considered the nation's ward and it is the duty of some great democratic smooth bore to call the attention of the great mugwump I am to this particular case of inoccusious [sic] destitute. *(Idaho Daily Statesman,* 1888)

Although such a small band hardly could have represented very many different tribes, Andy Johnson reported that some Nez Perce Salmon River Indians had joined his people. An occasional white mountaineer, including James Hay until his death, June 20, 1897, also formed part of that interesting Dry Buck colony. A number of white farmers had gardens and orchards there when Abraham L. Rinearson surveyed that area May 3, 1892. Rinearson mentioned that "Indian Charley and his family are living in good log houses in sec. 5 (see map), and have several acres under cultivation." Another Indian had a garden next to Indian Charley's on lower Dry Buck adjacent to the Payette, an area to which Eagle Eye's group had expanded. W. J. McConnell, in a slightly confused account, provided to the *Idaho Daily Statesman,* identified Indian Charley as Nez Perce and regarded only two as Shoshoni (or Snake River) people.



QUADRANGLE LOCATION
IDAHO
Timber Butte
Obsidian
Dry Buck Valley
Pinehurst Church
Dry Buck School
Banks
Brownlee
Prospect
Cottonwood Cr
BANKS, IDAHO
N4400—W11600/15
1953
T. 9 N.
T. 8 N.
R. 2 E.

Although somewhat tangled, McConnell's report contains useful information concerning Eagle Eye's enterprise:

INDIANS ON DRY BUCK

Little Settlement in an Isolated Spot in Boise County

HAVE ENTERED LAND

Only Case of the Kind in the State—Some Mystery About the Settlement

Ex-Governor McConnell, United States Indian inspector, has recently returned from a trip to the Payette to look up a small band of Indians living near the mouth of Dry Buck. He tells an interesting story about them.

It appears there are 20 Indians living at that point. They have been there 12 or 14 years. Two of them are Snake River Indians and the rest are supposed to be Nez Perces. Just why they located at that isolated point is not known. The Indians themselves will not explain the matter, but the supposition is that their settling there was a result of some feud. Two of them named Charlie, father and son, each had an eye punched out by the tribe, supposedly for refusing to go on the warpath at the time of the Joseph outbreak. The elder Charlie died last winter and the son is the head of the settlement. There are several families, numbering all told about 20.

These Indians have entered land, the only case of the kind in the state. Their holdings are in section 5, township 8 north, range 3 east. They have several lots in the canyon, less than a section altogether. The land was entered by Charlie. The Indians cultivated their property, raising grain and other crops. They have set out fruit trees, and they have considerable stock, including horses, cattle and chickens. Mr. McConnell says he will ask the government to purchase for them a small tract in the canyon that they failed to secure. They are better off there, he says, than they would be if they were with the tribe, being the most comfortably fixed band of Indians that he knows of.

George F. Cook of Sweet has looked after the interests of the Indians, endeavoring to protect their rights for them and get them on a self-supporting basis. He has a mine near there and the Indians often work for him. They also work placer ground along the stream and get some money that way. The settlement is inaccessible excepting by trail. (*Idaho Daily Statesman*, 1898).

Eventually a casualty of a placer mining accident, Eagle Eye concluded a long career as an exceptionally able Shoshoni leader who commanded respect of white settlers as well as of his own people. After his funeral, his band retired to Fort Hall, where his granddaughter became a successful rancher on Lincoln Creek.

Sixty years or more had gone by before Mrs. Thorpe returned to her childhood home during our 1963 expedition. Searching for Eagle Eye's grave created some interesting problems.

Leaving Dry Buck for Timber Butte, I had to take ten additional passengers in a station wagon along a road which scarcely could be seen along the side of Timber Butte. Finally we started up a trail to the top. There we began to notice obsidian. Based upon some interesting geological information which he had received from professional sources (which best might remain unidentified), Sven Liljeblad concluded that these fabricated cores and flakes had come from Glass Buttes—a prominent Oregon obsidian intrusion located 60 miles or so west of Burns.

As we ascended Eagle Eye's trail, however, we came across so much obsidian that we decided that a considerable army of Northern Paiute would have had to have operated a major freight line hauling rock for more than 240 miles from Glass Buttes to Timber Butte in order to account for so much archaeological material. After we reached Eagle Eye's point (see map), we found a major obsidian outcrop adequate to meet industrial needs for all the Indians of this region and some other regions as well. More than 20 feet wide, and extending at least 60 feet along a fracture, this dike struck generally north and south close to a zone of contact between Idaho's batholith and basalt formation which extended farther west—a feature to which our obsidian deposit appeared to be structurally related. Obsidian was scattered all over Eagle Eye's hill, which represented such an interesting deposit that I mentioned that location to many archaeologists from that time on. Recent studies have identified Timber Butte obsidian artifacts recovered from a broad interior northwestern area. Eagle Eye's point, on that account, represents one of Idaho's major sites for early industrial archaeology.

REFERENCES CITED

Willey, Norman B.
1881 By-line article, *Nez Perce News*, June 9, Lewiston, Idaho Territory.

Article, no author
1888 *Idaho Daily Statesman*, January 26, Boise, Idaho Territory.

Article, no author
1898 *Idaho Daily Statesman*, April 5, Boise, Idaho.

EDITOR'S NOTE

The following paper, written by Mr. Clark in 1966 primarily for his own record and information, has had very limited distribution. One copy was given to Mr. Kelly Murphey several years ago and was subsequently referenced by him in *"Cultural Resources Overview"* for the BLM, Vale District, Oregon, Vol. I, 1979. Since it appears that it is perhaps the only written record accompanying a surface collection from southwestern Malheur County, Oregon, we are taking this opportunity of placing it into the literature.

It should be here noted that B. Robert Butler analyzed a collection made at Coyote Flat at about the same time as that of Mr. Clark. This study was published in *Tebiwa* 13(1):34-57.

INDIAN ARTIFACTS OF COYOTE BASIN

By
Everett Clark

1966 Marsing, Idaho

Coyote Lake lies, for the most part, in Township 34 South, Range 37 East, Willamette Meridian, Malheur County, Oregon. It occupies the northeast end of a long kidney-shaped basin that extends in a semi-circle to the southwest for more than twenty miles. It is bounded on the east by a low ridge, running roughly north and south, that is the direct boundary between the Great Basin to the west and the Snake River drainage to the east. On the north it is bounded by a gentle slope that rises to the Sheepshead Mountains; on the west by rims that separate it from the Alvord Desert; and on the south by a long narrow valley that terminates in the Trout Creek Mountains.

Although there are many intermittent streams emptying into Coyote Lake, the most predominate streams are Twelve Mile Creek and Antelope Creek to the east, and Whitehorse Creek and Willow Creek to the west. All four streams rise in the Trout Creek Mountain system and flow generally parallel to each other in a northerly direction toward Coyote Lake and a chain of playa lakes lying to the west. South of the Whitehorse Ranch, both Whitehorse and Willow Creeks are living streams. Willow Creek is the largest and supports some fishing. Both streams, however, run through the Whitehorse Ranch, a large, sprawling affair, with considerable meadow land, and their waters are completely absorbed by the irrigation system of the ranch. Only for short periods in the later winter and early spring does any water escape to Coyote Lake.

This is an arid country with an annual precipitation of less than nine inches. Although most winters are relatively mild, summers are hot and dry. As would be expected, vegetation here is very sparse, consisting of scrubby salt brush, some sagebrush, and a few desert grasses. Some antelope were observed, as were coyotes, jack rabbits, rodents, lizards and some raptorial birds.

For purposes of clarification, I shall refer to the Basin as Coyote Basin, and to the lake itself, if indeed it can be called a lake, as Coyote Lake.

The road entering Coyote Basin runs roughly parallel to, and at the base of, the ridge that separates the Great Basin from the Snake River drainage. As one enters Coyote Basin from the south, the first feature observed is a fenced-in grass seeding experimental area. Although this is one half mile square, one hundred sixty acres, it looks extremely small in comparison to the whole of the basin, which is about three and one half townships. This grass seeded area is about four miles almost due south of Coyote Lake and to us, served as a reference point when we wanted to plot a given area.

One of the most outstanding physical features of the entire area is the almost universally distributed sand dunes. Most are large enough to hide a car. One of the most outstanding climatic features of the area is the wind which prevails from the north and northwest, less from the west and south and rarely from the east.

The dunes at present seem to be almost completely stabilized and are windrowed in a northwest-southeast direction. The areas between the dunes are hard, bare, smooth and sun cracked. Most are too hard to blow, but under the right circumstances there is still some drifting and blowing.

If one could imagine how hard it would be to find your direction in a large city of look-alike unnamed streets, and look-alike unnumbered houses, then you would understand how hard it would be to relocate a site in look-alike sand dunes. Once a site was abandoned it would have had to have been flagged before one could again return to it.

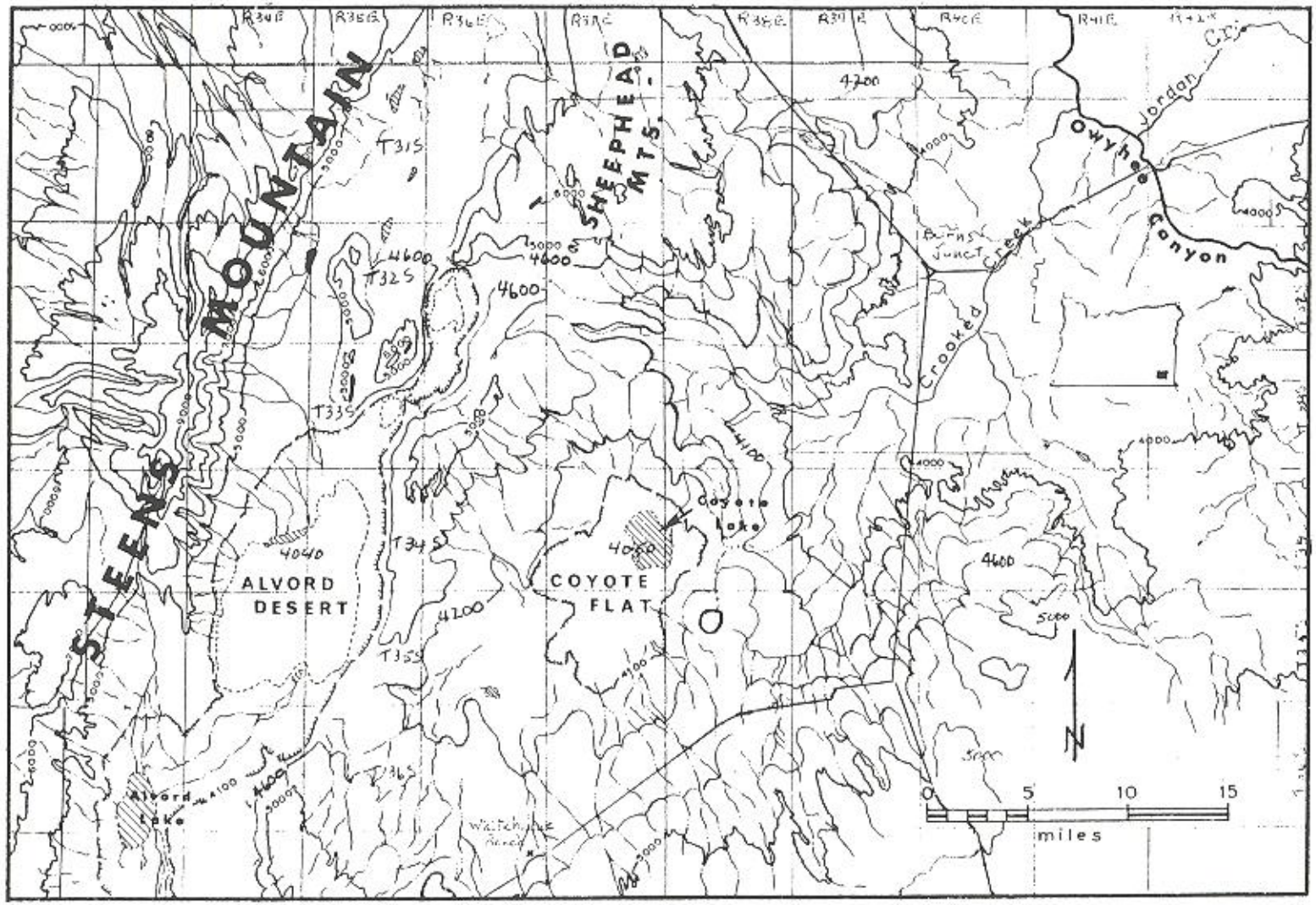
Coyote Lake, the lowest point in the basin, with an elevation of a little more than four thousand feet and an area of three miles long by two miles wide, is a playa lake whose bottom is flat, smooth and completely devoid of vegetation. Only during early spring run-off or from flash floods does a few inches of water impond there, and then only briefly.

Immeditely adjoining the flat bottom is a narrow beach, from a few feet to a few yards in width, profusely strewn with cobbles. Projectile points and like material was scarce but milling stones were to be found by the dozen lying among the cobbles. These consisted mostly of irregularly shaped basaltic stones, with at least one flat face that could be utilized as a grinding surface. Some were ground on barely enough to show and few had a sizable ground-out depression. Occasionally one would be found that had been intentionally shaped to what could be called an ovate metate. We followed the shoreline for more than a half mile and they seemed to be continuous. We could have picked up a truck load. To us, this suggested that some sort of root or seed had been processed here.

Rising from this beach, to a height of about fifteen feet, was a kind of bluff, the top of which extended back a mile or so to a second raise. I would estimate the second raise to be more than ten or twelve feet. We recognized these as lake terrnces; in other words, there would have been at least two distinct water levels. That there were many advances and retreats in the water level we do not doubt, but two seemed to be quite distinct.

If one were to designate the present bottom of Coyote Lake as level three, then the next terrace would be level two, and the top terrace, level one. I would like to designate these terraces as such in order to plot the distribution of artifacts found in Coyote Basin.

My purpose in writing this report is twofold. First, I wanted some kind of reference that was as accurate and reliable as I could possibly write and, second, I wanted to



Scale: 1:500.000

Contour map of the Coyote Flat locality.

get it on paper while it was still fresh in my memory.

In the early autumn of 1965, the late Karl Smith, my wife Edythe, and I, drove into Coyote Basin. We had not finished the day when we recognized we had come upon an area that could be of very special interest. From the tracks that crisscrossed each other, we knew we were late, very late. Many other collectors had preceded us, and others, in ever increasing numbers, would soon follow.

Funds, time and our professional friends are very often programmed in advance to other sites, and not always readily available. Taking these things into consideration, we felt it might be a long time before a detailed study could be made of the area. We knew then that if an assemblage was to be salvaged, with any semblance of a record kept, it had to be done now. In this we were certainly right, for before we left people were coming in with cars, pickups, campers and hondas; even two aeroplanes landed on the lake.

In an area as large as this it's difficult to plot a site without the benefit of a surveyed and measured grid. If one were to stand at the seed plot, facing due north, holding a clock, then north would be at twelve o'clock, west at nine o'clock, east at three o'clock etc.

Upon entering the basin for the first time, we hunted to the west and slightly north of the seed-plot. It was here I found my first Scottsbluff point. The find of a single point on the surface, to me, is not sufficient evidence that Scottsbluff man was even present. It could have been carried there centuries later by an entirely different people. However, not too long later, I found a second, and an acquaintance of mine found a third a few yards south. This Scottsbluff site would be between nine and ten o'clock, on level one. Mr. Smith had one or two in his collection, but he didn't recognize them as such, until he had forgotten where he found them. That these were Scottsbluff points was confirmed by Dr. Jesse Jennings of the University of Utah during a visit there by Mr. Smith.

I made another unusual find. In one small area I found a dozen or more proximal ends of large, thin, concave based lanceolate points. I failed to find a complete specimen. Some were edge ground, some were not. Most were made of a silica material of one kind or another. Few were made of obsidian. Most of these are now at the Idaho State University Museum.

I also found a few complete crescents as well as many broken halves. Of course, one must consider the possibility that someone else had preceded me and gathered up everything that was whole. What might have been taken before we arrived and after we left, no one will ever know. We can only account for what we have.

We also found on level one, a representation of about every point type in our collection. This would be understandable. The peoples of every culture in the entire time span must have wandered over the entire area. They left their mark.

Mrs. Smith joined us later and the four of us hunted in the blow-outs between the dunes. That they were blow-outs was demonstrated by the fact that many of the artifacts, especially large things like milling stones, would be perched up on a little pedestal. Most open spaces were quite sterile, some had a few specimans while others had a rather high concentration of artifacts. Generally these sites contained several point types, suggesting that several cultures were represented.

By far, the most of the sites were on level two. The types here included stemmed indented based, side notched, McKean (Humboldt), Pinto Basin and Elko Eared.

Ovate metates were present, and many milling stones that appeared to be intentionally smashed to bits no larger than a baseball. Manos were generally oval shaped with two slightly convex grinding surfaces. Occasionally one would be found about the size of a bath-sized bar of soap, but with a triangular or wedge shaped cross section. It then would present three slightly convex grinding surfaces. This is a type common in the Juniper Lake, Tudor Lake, base-of-the-Steens Mountain area.

Crescents would be picked up occasionally in any sector, but were concentrated mainly in about three areas: one at ten o'clock on level one, one at eleven o'clock on level two, and one at twelve o'clock on level two. We found so many at eleven o'clock on level two, I nicknamed it "Crescent Cove". Large side notched points also seemed to be little more predominate there.

Most of the beak-nosed gravers and steep-end scrapers were found at twelve o'clock on level two. A small area nearby yielded seventy-five short, thick-bodied Elko eared points, the highest concentration of any points I have ever found. Pinto Basin type points were also common there, as were the small, indented base lanceolate of McKean (Humboldt) type points.

At one or two places at twelve o'clock and one o'clock on level two, we found areas that the artifacts consisted almost entirely of stones we assumed were milling stones, shattered into small pieces as though they had for some reason been purposely broken.

I believe the most outstanding cultural features, or perhaps I should say the lack thereof, was the complete and total absence of anything made of bone or shell. It is unbelievable that these things did not, at some time, exist here. At most sites we have observed at least the remains of butchered animals may be seen. Here we found absolutely nothing in the way of bone or shell; nor did we find any charcoal, fire pits or fire-blackened earth. It appears as though the whole of the area has been so churned by the wind that nothing less durable than stone remains.

There is also an apparent lack of any stratification. Simply because we did not find it does not necessarily mean it does not exist, but we did not find it.

About one half mile north of the buildings of the White Horse Ranch and perched atop a low mesa-like hill, is the remains of some sort of military installation. All that now remains are the outlines of the buildings. I did not count the buildings, but there were several, covering, I would guess, about five acres. There is a small cemetery there with at least one burial, that of a young man. Now all this is of historical interest, but what brings it into focus is that, across the road and fence to the east, I found a great many obsidian nodules scattered about, some of which had flakes struck from them. In short, they were at least one source of the raw material utilized in the tool making industry. The obsidian is opaque, black and somewhat granular in structure. It is a type common to this section and to the northwestern Nevada area. Occasionally a nodule would be found that was gray-green in color. Many of the artifacts of the Coyote Basin were made of this material. Many

others, of course, were made of silica materials. On the southwest end of Coyote Basin and on the east edge of Red Mountain there is an abundance of silicified bog. It occurs in most colors as well as almost colorless and transparent. This, then, may have been the source of the silica material used in the manufacture of the crescents and other tools. Some specimens were made of a silt stone which must have been brought in from some other area.

As one studies the artifacts from Coyote Basin, dozens of questions enter one's mind. Who were the crescent makers? Who made the large lanceolate points? Were they the same people that made the beak-nosed gravers and steep-end scrapers? Most were made of the same material, maybe they were made by the same people.

If some place a stratified area could be found and studied by someone who was trained to do so, perhaps it would reveal the secrets of Coyote Basin.

METAL CLEANING FOR WHOM: ARCHAEOLOGIST, CURATOR, OR DESCENDANTS?

By
Roderick Sprague

ABSTRACT

The cleaning of metal artifacts has been directed primarily toward one of two objectives. The archaeologist is concerned with only enough cleaning to observe the artifact, record trademarks, and perhaps take photographs for publication. This objective results in incomplete cleaning with no concern with preservation. The curator or preparator is concerned with the aesthetics of an artifact. Since the overriding issue is the pleasing appearance of the object, the question of long-range preservation becomes secondary. A system of cleaning and preservation is proposed whereby all three needs are taken into consideration; the observations of the archaeologist, aesthetic appearance of the object, and the ideal preservation of the object for future generations.

University of Idaho
July, 1980

The historical archaeologist, upon returning from the field, normally first views metal artifacts as basic data sources to be mined for information concerning basic descriptions plus the place and time of manufacture, if possible. This objective usually results in a superficial cleaning to reveal accurate size and shape and hopefully trademarks, patent date, manufacturer's name, or place of manufacture. Oftentimes this preliminary cleaning results in an increased deterioration of the object rather than moving toward preservation.

Archaeologists with a concern for the future will often attempt to finish the cleaning and preservation as best they know how. The knowledge of metal preservation is usually applied zealously with the major concern being a complete preservation of the object, hopefully for all time.

For over 15 years I have experimented with several metal cleaning techniques in an attempt to find the most economical and practical method. Since virtually all historic sites in the Pacific Northwest date from the nineteenth and twentieth centuries, metal cleaning essentially means iron cleaning. The small quantitites of copper, brass, lead, pewter, zinc, tin, and even aluminum can be readily cleaned through the use of Plenderlieth's (1969) chemical formulas or electrolysis. It is the iron and steel objects that make up the vast bulk of the metals to be cleaned and preserved. Iron cleaning chemicals such as manganesed phospholene (MP-7), Freemont 254, Turco W.O. 1, etc., all fall into one of two classes. They are either so strong, as with manganesed phospholene, that they are difficult to control and leave a very artifical and crystalline appearance to the iron surface; or, as is the case with most pickling cleaners, they simply do not attack the severe corrosion typical of archaeological materials. Manganesed phospholene is occasionally useful in conjunction with other cleaning techniques to bring out examples of forge welding of two slightly different types of iron or steel for photographic purposes. Glycolic acid is useful in the field for occasional iron objects and as an aid in laboratory cleaning, but it is far too slow and costly for large scale operations.

The second technique, and the one with a long and impressive literature, is electrolytic cleaning of iron. Techniques utilizing zinc in an electro-chemical cleaning process, are too time-consuming and dangerous (especially with boiling lye) to be considered worthy competition to direct current electrolysis. A direct current power supply must be well designed for the intended use– a battery charger as suggested by some sources will not do. The use of stainless steel tanks serving as both the electrolyte container and the electrode seems to be an example of independent invention. The use of this technique by John Combes in 1964 is the first occurrence, to my knowledge, of this major advancement in electrolytic metal cleaning. It is a technique that I strongly recommend for difficult cleaning of nonferrous metals and also in the case of some complex alloys or plated combinations, such as tinned brass shell casings.

On the other hand, electrolytic cleaning of iron and steel is a very slow and laborious process. The ability of the object being cleaned to transmit electrical current is directly proportional to the speed to which the object will be cleaned. Thus, gold, silver, and copper can be cleaned very quickly and thoroughly by electrolysis. On the other hand, iron– especially when badly corroded and not containing a great deal of actual metallic iron–will be processed very slowly, especially when the voltage and amperage are kept within the limits we have found to be safe for artifacts (12 v. 15

amp.). Not only is electrolysis of iron artifacts extremely slow, but also the mechanical cleaning that must be conducted along with the electrolysis is very time consuming. Furthermore, the objects become coated with a black residue which must be also removed by hand labor after the electrolysis is completed.

The heating in a muffle furnace and then quenching of iron objects we have not experimented with because of the costs involved in setting up a large muffle furnace. Also, the technique of immersion in fused sodium hydride maintained at a temperature of 370°C is not only costly but has serious safety problems. Other techniques such as ultrasonic cleaners and boiling in microcrystalline wax were found to be of little or no use.

The third major technique for iron cleaning is abrasive particle cleaning. This can be used on iron and steel as well as cast brass and bronze if a matte finish is acceptable. The technique of sand blasting was suggested originally to me in a brief article by Stanley South. South (1962) suggested the use of "your local sand blasting facility" for this type of cleaning. The concept of a "local sand blasting facility" may be appropriate on the Eastern Seaboard, but is somewhat humorous when setting up a system in a small university town. I established a sand blast facility at the University of Idaho in 1967 utilizing a Ruemelin Utility Blast Cabinet in conjunction with a Ruemelin fifty-pound Midget Sand Blast Generator. The Utility Cabinet has its own low pressure nozzle on a recycling system. This blast is sufficient for only very delicate cleaning. For more heavy duty cleaning or rapid work, the Midget Generator is utilized inside the Utility Cabinet. The disadvantage of the Midget is that the sand has to be removed from the Utility Cabinet, put through a screen and zigzag abrasive separator and replaced in the generator after approximately an hour's work. The abrasive utilized is garnet sand, mesh No. 36, available from Idaho Garnet Abrasive Company, Kellogg, Idaho. Garnet is approximately three times more expensive than silica sand but lasts from five to seven times longer in use. It also has the additional advantage of not causing silicosis.

The Ruemelin Utility Cabinet does require an exhaust outlet. We have also installed a small exhaust fan to create enough of a negative atmosphere to keep any random dust out of the rest of the laboratory. The cabinet has been modified with an additional light, switches on top of the cabinet, and surplus rubber conveyer belt lining the cabinet to reduce wear to the cabinet walls. The compressed air system has a complex system of filters, regulators, and bypasses to prevent water from getting into the Midget generator. These are modifications that will vary with each installation.

Sand blasting as a technique for cleaning iron can be utilized by the archaeologist to find trademarks and other identifying marks very quickly and easily in comparison to electrolysis or chemical cleaning. It is also possible to take corrosion casts of what were once iron objects and lightly clean them to the point where the original shape can be observed. This technique is obviously impossible through electrolysis or chemical cleaning. Thus, from the point of view of the field archaeologist, sand blasting is by far the preferred system for the initial phase of cleaning.

Under contract with the National Park Service, the University of Idaho began a metal cleaning project of older collections excavated at several Northwest historic sites. Through a cost analysis study, it was found that the sand blast technique was by far the most economical technique for iron cleaning. One of the major advantages of the technique is that the laborious boiling in distilled water to remove the residual salts is not necessary as in electrolysis because the sand blast technique does not involve a liquid, and thus the salts are removed from the surface and not carried into the porous iron surface.

The appearance of an artifact is of supreme importance to a curator or preparator when they want to display the object in a museum or interpretative center. The sand blast technique as initially carried out was found to be objectionable to the then superintendent of Fort Vancourver National Historical Site. After sand blasting, iron objects have a dull grey appearance and after being coated with preservative they were described by the superintendent as looking as if they had been painted with grey paint.

A series of experiments was carried out to overcome this shortcoming of the sand blast technique. I finally derived a formula based on an ancient gun browning recipe that gave a pleasing rusty brown appearance to the metal, yet left no destructive salts on the surface of the iron. In essence, what we are doing is cleaning the iron down to the bare metal and then making it look rusty again for the sake of the museum personnel. This browning solution consists of one gallon of distilled water to which is added 28 gm of finely crushed copper (cupric) sulfate ($CuSo_4$) and 12 ml of ethyl nitrite (spirits of nitrous ether 90% - 92% [$C_2H_5NO_2$]). The objects are removed from the sand blast operation, dusted with compressed air to remove all of the sand blast dust, dipped in a browning solution from 5 to 15 seconds, air dried with compressed air, and then dipped in a silicone resin (Dow Corning R-4-3117). The silicone resin forms a secure bond with the surface of the iron and has effectively resisted any evidence of corrosion under coastal climatic conditions for a period thus far of ten years. This includes objects as small as nails to as large as a four-pound cannon.

It is our hope that through the judicious use of sand blasting we can satisfy the archaeologist with his desire for precise information on the artifacts recovered, provide a pleasing appearance for the use of the museum personnel, and most importantly preserve historic objects for the knowledge and enjoyment of future generations.

REFERENCES CITED

Plenderleith, H. J.
1969 *The Conservation of Antiquities and Works of Art.* London: Oxford University Press.

South, Stanley A.
1962 A Method of Cleaning Iron Artifacts. In "Papers Presented at the Ist and 2nd Conferences on Historic Site Archaeology," pp. 17-18. *Southeastern Archaeological Conference Newsletter,* Vol. 9, No. 1.

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EDITOR'S NOTE

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SURFACE HUNTING: IS IT BAD OR GOOD?

By
Gregory Perino

There is controversy in some quarters as to the merits of surface hunting for Indian relics. Some equate it to pot hunting while others believe that it serves a useful purpose. I have heard surface hunters criticized by young lower echelon archaeologists, never by the top brass. Perhaps the older archaeologists remember when they began their careers by surface hunting sites near their homes. In this way, they began their training early in life, have more understanding of people, and are more useful to the study of archaeology. The archaeologist who decided on his career when he was in college generally doesn't seem to have the same insight in the field or with people, as the early starter.

Surface hunting has many compensations. It rests the mind while exercising the body. It helps to conserve artifacts that would have been destroyed by the plow, frost, or cattle walking on them. It saves pieces of Indian art for the future. It keeps collectors busy so that they do not dig for artifacts which have an association with other features. (Surface finds, of course, are already out of their original context.)

Surface hunters often find evidence needed to show the distribution of projectile point types, other artifacts, and cultural units. They have discovered most of the archaeological sites recorded.

Surface hunting a group of sites in a localized area can make the hunter more knowledgeable about the cultures which inhabited his area than the professional archaeologist who depends largely on an overall view of the culture he is studying. Surface hunters are an important and very necessary group for they are interested and are the ones who aid archaeologists in finding sites to excavate, and aid in acquiring legislation to conserve archaeological sites.

There are some desirable things the surface hunter can do that would make his collection more useful not only to himself, but to others. He can catalog or label each piece as to provenience so that the locus of the find will be recorded. Many archaeologists insist on having a catalog system, but we have found that this is not enough, for if a collector dies, the catalog is either misplaced or lost by the heirs and all one has is a group of artifacts with numbers on them. *Basic information should be permanently inked on each item,* after which, a catalog may be made for recording additional information. A good idea is to photograph each year's finds and send the prints, along with the information, to the department of archaeology of your state university or the state archaeologist. Locations will be kept in strict confidence, and no one will overrun your sites thereafter. In fact, they will probably consult you if they are interested in studying them. Remember, you are the expert on those sites. Location of sites should be recorded because it is an aid in learning of the former distribution of culture groups. Locations will also be on record in case some sites are removed or destroyed.

Almost all states have counties in which no sites have been reported. Oklahoma has several along the Kansas border; the sites are hunted primarily by Kansans who do not report them to Oklahoma authorities.

Unfortunately, there are a few collectors who jealously guard the locations of sites they have found; neither will they let anyone study the artifacts they have recovered from them. It is difficult for me to understand people who feel that if they permitted the collection to be studied, it would somehow depreciate; when in reality they will learn a great deal about it. In fact, the collections should take on new importance in the eyes of the owners for they have become useful as well as personally gratifying. Cooperation has led to lifelong alliances between some collectors and archaeologists. This has benefited both.

Treasure hunters cannot be regarded as amateur archaeologists because most of them use metal detectors and are interested in loot, not information. In states that have antiquities laws, the metal detector is tantamount to carrying a gun in a game preserve. State antiquities laws usually do not, and should not, prohibit surface hunting, but they do ban digging. A metal detector would be illegal to use in a search for antiquities in Oklahoma because the law does not permit excavation of antiquities by unauthorized persons. It could only be used in locating pipelines or other modern objects.

Excerpts of the Federal Antiquities law issued June 8, 1906, read as follows: Section 432—Permits for the examination of ruins, the excavation of archaeological sites, and the gathering of objects of antiquity upon lands under their respective jurisdiction may be granted by the Secretaries of the Interior, Agriculture, and Army to institutions which they deem properly qualified to conduct such examination, excavation, or gathering subject to such rules and regulations as they may prescribe; provided, that the examinations, excavations, and gatherings are undertaken for the benefit of reputable museums, universities, colleges, and other recognized scientific or educational institutions, with a view to increasing the knowledge of such objects, and that the gatherings shall be made for permanent preservation in public museums.

Section 443 read: Any persons who shall appropriate, excavate, injure, or destroy any historic or prehistoric ruin or monument, or any other object of antiquity, situated on lands owned or controlled by the government of the United States, without the permission of the secretary of the Department of the Government having jurisdiciton over lands on which said antiquities are situated, shall, upon conviction, be fined in a sum of not more than $500 or be imprisioned for a period of not more than ninety days, or shall suffer both fine and imprisionment, in the discretion of the court.

The above-mentioned fine of $500 in 1906 would probably be equivalent to $5,000 today, a steep price when caught looting antiquities on federal property.

Believe it or not, many collectors think they have the right to anything they want on federal lands. Some get hostile when they are restrained by officers from looting public owned sites. There are many instances in which individuals

have flagrantly violated the law. In Utah, several years ago, a collector used a bulldozer to uncover a site on a federal highway project and destoyed much of it before the university representative, who was scheduled to salvage it, could have him removed by force. In Oklahoma, a "farmer" plowed up a large section of a site on Corps of Engineers' property so that he could hunt for arrowheads. Unfortunately, the above types of collectors do exist and give a bad reputation to cooperative amateurs. Instead, they should be regarded for what they are—vandals, and should be prosecuted accordingly.

The interested and cooperative amateur should be encouraged to report his sites and finds because he probes in nooks and cranies for sites that would require an army of archaeologists to locate. There is no doubt that amateur archaeologists have contributed a great deal to the discipline of archaeology in the past, and they will continue to do so in the future.

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