

1999
44-167

Handprints in Montana Rock Art

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plains
ANTHROPOLOGIST
Journal of the Plains Anthropological Society

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ABSTRACT

Human hands are portrayed in rock art in much of Montana, but are most frequent in the central part of the state where they are the only kind of figure at five sites. Production categories in Montana include impressed hands, stylized hands, and negative hands. Of the hands currently recorded in Montana, the impressed and negative categories are actual physical representations of hands and are therefore important for suggestions on the age and gender of the painters or participants themselves. Positive hand impressions outnumber other categories 6:1. In central Montana these occur mostly on open bluffs that probably functioned as public markers relaying information to people passing the site. Freehand paintings of hands ("stylized") occur mostly in cave sites that appear to have a ceremonial function.

Keywords: *Montana; Northern Plains; rock art; pictographs; petroglyphs.*

INTRODUCTION

Hand portrayals occur in rock art world-wide (Anati 1994; Bahn 1998), but relatively few articles on North American rock art deal intensively with hands, and those are usually concerned with specific attributes such as extra or missing digits rather than distribution of the motif (Barnes 1994; Davidson 1975; Freers 1995; Wellmann 1972). Like other motifs, handprints can provide information on site function and age. In addition, because many pictograph hands are actual handprints, and not just drawings, they can also suggest information about the age and sex of the painter or the participant in the painting. This paper presents current knowledge about hand portrayals in Montana. Hand counts and distributions are based on fieldwork and file and literature searches completed through August 1998 (Table 1). In this discussion we are concerned with hands as discrete individual figures and not as attached to anthropomorphs. Because handprints in the Smith River drainage, in the central Montana counties of Meagher (ME) and Cascade (CA), have been recorded and analyzed in more detail than others in the state (Greer 1995), information from those sites is used for specific examples.

OCCURRENCE AND DISTRIBUTION

Of 708 rock art sites recorded statewide as of August 1998, handprints are reported from only 67 sites, or less than 10% (Figure 1a). It has long been recognized (though with a limited data base) that there are more handprints in central Montana sites than in surrounding areas (Conner 1962a; Keyser 1979:159). Our site count confirms that of the 67 sites with hands, 49 (73%) are in central Montana.

Central Montana is defined for this paper as that area bordered on the west by the Continental Divide, on the east by the north-south portion of the Musselshell River, on the north by the Teton River and east-west portion of the Missouri River, and on the south by the three forks of the Missouri and the east-west portion of the Musselshell (Figure 2). The Central Montana portion of the north-western Plains is characterized by a plains environment interrupted by several island mountain ranges. A foothills transitional area of hills and ridges separate the plains and island mountain ranges and contain plants and animals of both environments. Rock art sites occur in all three environments (plains, mountains, and foothills), while hand portrayals appear on boulders and sandstone bluffs in the plains; on limestone outcroppings in the foothills

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Plains Anthropologist, Vol. 44, No. 167, pp. 59-71, 1999

Table 1. Summary of site and figure counts mentioned in the text.

| | Montana | Central MT | Smith River |
|--------------------------|--------------------|--------------------|---------------------|
| Total rock art sites | 708 sites | 230 sites | 68 sites/1687 figs. |
| Total hands | 67 sites/413 hands | 49 sites/331 hands | 20 sites/122 hands |
| Hands only | 5 sites/62 hands | 5 sites/62 hands | 4 sites/60 hands |
| Hands with other figs. | 62 sites/351 hands | 44 sites/269 hands | 16 sites/62 hands |
| Hands dominate panel | 6 sites/119 hands | 4 sites/96 hands | 1 site/18 hands |
| Impressed hands | 49 sites/358 hands | 37 sites/292 hands | 15 sites/102 hands |
| Negative hands | 2 sites/5 hands | 1 site/2 hands | 0 sites/0 hands |
| Stylized hands | 23 sites/47 hands | 17 sites/38 hands | 8 sites/20 hands |
| Six fingers | 3 sites/3 hands | 3 sites/3 hands | 1 site/1 hand |
| Handedness identifiable: | | | |
| right | 36 sites/154 hands | 29 sites/124 hands | 14 sites/39 hands |
| left | 23 sites/56 hands | 18 sites/34 hands | 11 sites/22 hands |
| Context: | | | |
| bluff face | | | 8 sites/75 hands |
| rockshelter | | | 5 sites/30 hands |
| cave | | | 7 sites/17 hands |

transitional area; and in caves, rockshelters, and on bluffs in mountainous areas.

Of the 413 individual hands inventoried statewide, 331 (80%) are in the central counties, indicating there was a cultural bias in the central part of the state, over surrounding areas, for portraying hands (Figure 1b). Although the numbers may change with additional survey, it seems unlikely that the distributional pattern, with the heavy concentration in central Montana, will change appreciably. The number of rock art sites recorded in this area is not unduly high compared with other parts of the state (Figure 1a).

In spite of the large concentration of hands in this area, even in central Montana this is not a common motif relative to other kinds of figures. In the Smith River drainage (Figure 2), for example, handprints occur at only 20 (29%) of 68 known pictograph sites. Although these sites contain 122 handprints, hands constitute only 7% of the total pictographs recorded in the drainage. Fingerlines, smears, geometric figures, and anthropomorphs outnumber handprints. However, handprints project a prominence and appear more numerous than they actually are because multiple prints

usually occur at a site, and handprints are the exclusive motif at four sites in this Smith River area.

CATEGORIES

This analysis is concerned with three production categories for the handprint motif: *Impressed Hands*, or actual hand impressions (Figure 3); *Stylized Hands*, either as pictographs or petroglyphs (Figure 4); and *Negative Hands* (Figure 5), or hand stencils as they are referred to by some researchers, particularly in Australia (Anati 1994, Wright 1985). The majority of recorded Montana handprints (358 or 87%) are impressions, while only 47 (11%) are stylized. To date, negative hands have been reported from only two sites (or 3% of the total handprints in the state). The Cabin Creek Rockshelters site (24BE1766), in southwestern Montana, has three separate negative hands. The other two negative hands are at the entrance of Hand Stencil Sink (24BW1053), a large cave with several interior rooms in the Big Belt Mountains of central Montana. Negative hands are an outline of an actual hand but not necessarily an identical replica, as the hand can be portrayed differently by simply bending a finger or by holding a finger or part of the

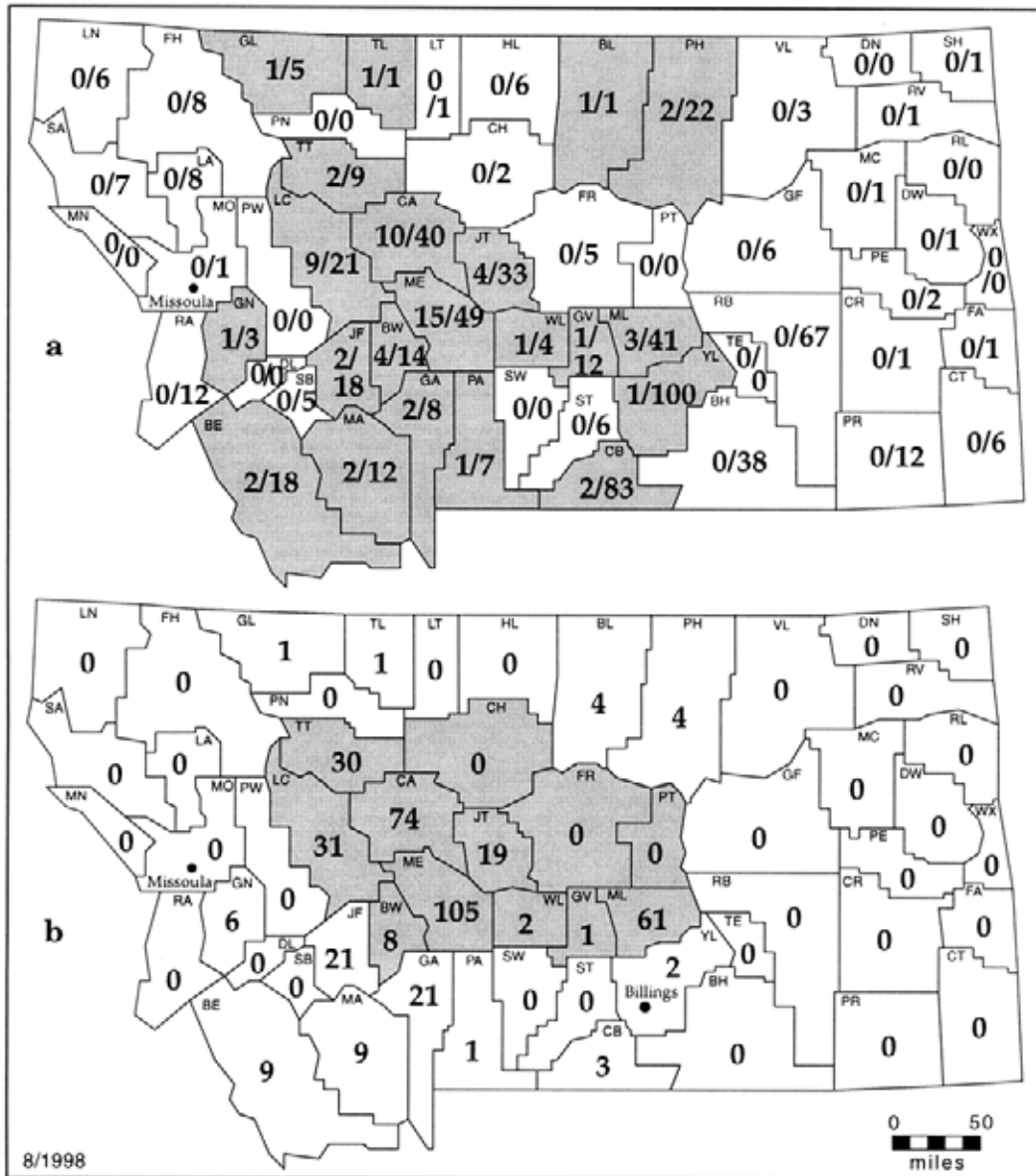


Figure 1. Distribution of Montana handprints by county, as of 8/1998. (a) Number of sites. First number is sites with handprints; second number is total number of recorded rock art sites. Counties with handprint sites are shaded. (b) Counts of individual handprints: central Montana counties are shaded.

hand up slightly away from the wall. Also the hand may be portrayed differently depending on whether the palm is pressed downward against the rock or is reversed facing outward away from the wall. Results also can differ depending on whether both the hand and forearm are placed flat against the

rock, or if only the hand is flat and the arm extends outward (in which case paint also covers the area beneath the palm and across the wrist). All five Montana hand stencils are complete hands with all digits (Figure 5) and appear to have been made with liquid paint evenly spattered around the hand

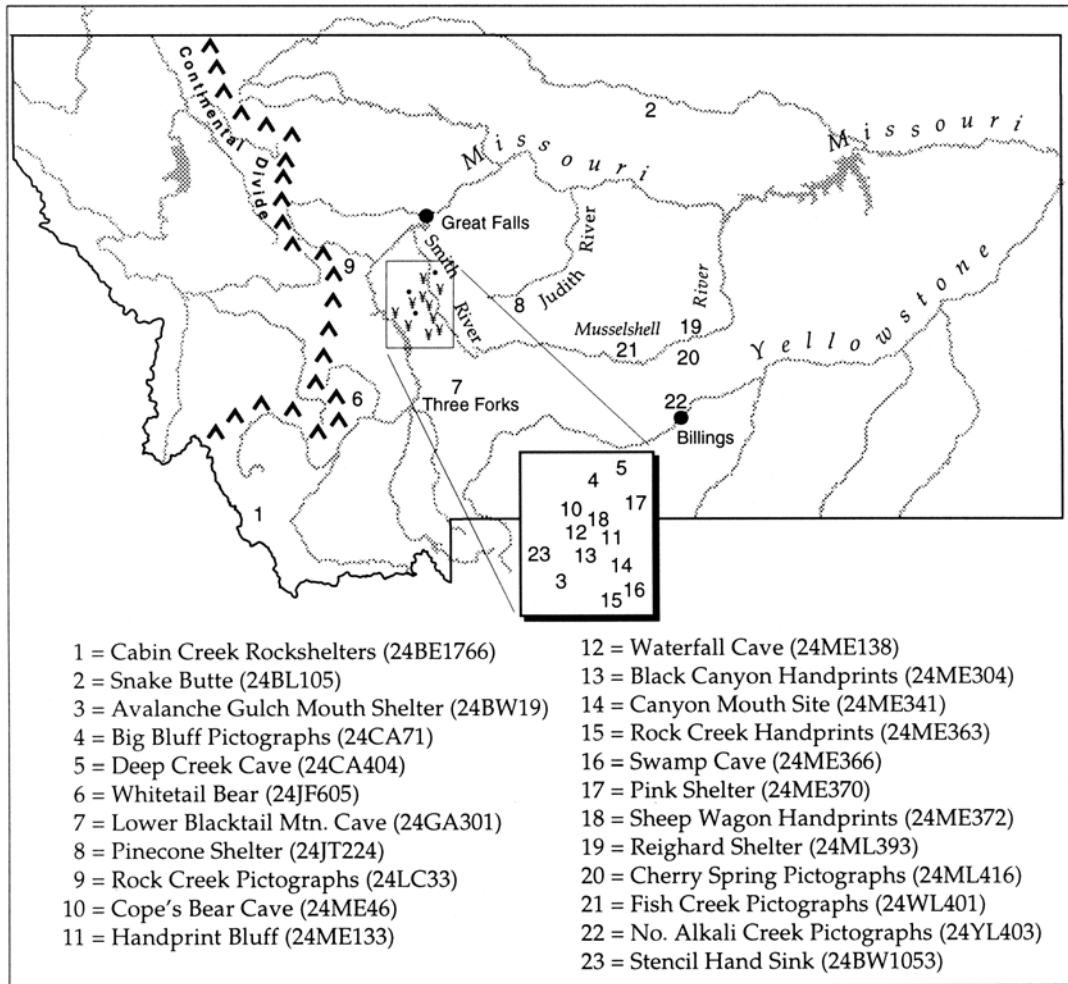


Figure 2. Map of Montana showing drainages and sites discussed.

and wrist (and forearm at 24BE1766), with the arm placed flat against the rock with the palm downward against the rock face.

Impressed hands were made by placing the palm in paint and then pressing the hand against the rock. Impressions always leave gaps in the paint, both along the fingers and in areas of the palm, as seen in Figure 3. In some cases, the impressed hand was apparently retouched to fill such gaps and make it more homogeneous and complete. An example of this is at the Big Bluff Pictographs (24CA71) on the Smith River, where additional paint of the same color and kind was applied to make a hand impression as solid as possible (Figure 6).

Positive stylized hands are recognized by at least a palm and some fingers. Free-painted handprint portrayals, as well as petroglyphs, often do not conform to the size and proportions of actual hands. In the Smith River drainage stylized hands are often larger than reality, as exemplified by a very large solid-painted hand at Deep Creek Cave (24CA404), and another at Black Canyon Handprints (24ME304) (Figure 7a) with characteristics also of a bear paw (see below). Stylized hands vary in size and shape, and a stylized hand at Cope's Bear Cave (24ME46), only a few miles south of Deep Creek Cave, has extra long straight lines for fingers and a proportionally small outlined palm; fingers



Figure 3. Impressed hand at Pinecone Shelter (24JT224).

are all the same length, but the short thumb indicates it is a right hand (Figure 7b). An adult-sized stylized hand at Black Canyon Handprints (24ME304), also in the Smith River drainage, is identified as stylized because the fingers all come together in a point near the top of the solid red palm



Figure 4. Stylized hand petroglyph at Snake Butte (24BL105).

(Figure 8). Another adult hand with similarly converging fingers is at Lower Blacktail Mountain Cave (24GA301), about 70 miles south of Black Canyon Handprints. All digits come together in a point at the center of the palm.

Another kind of handprint in Montana is the depiction of six digits or polydactyly, a motif somewhat commonly recorded in the Southwest (Barnes 1994; Wellmann 1972). Only three examples of this have been recorded in Montana, with the best example at Waterfall Cave (24ME138). Although the three examples are included here with stylized hands because they are painted and not impressions, it is possible that actual hand impressions of this kind may exist since polydactyly is reported among American Indian populations (Barnes 1994).

Stylized hands, and also feet, are occasionally confused with bear paws, and sometimes the figure cannot be conclusively assigned to one class or the other (Figures 7a and 9). It is possible that



Figure 5. Negative hand at Cabin Creek Rockshelters (24BE1766).

the confusion was intentional and that they were meant to represent combined human-bear interaction. Bears have long been recognized as an important part of North American Indian myths and rituals, and the interactions between humans and bears



Figure 6. Retouched hand impression at Big Bluff Pictographs (24CA71) compared with an actual female hand.

have been the subject of many North American studies (for example see Hallowell 1926, Rockwell 1991). Six examples of hand-paw confusion in Montana could not be conclusively classified as either and are not considered in the hand counts presented here.

Right and left hands can be identified for all categories if the palm is at least partially present and either the finger arrangement or the thumb can be seen. However, there are many hands for which left or right cannot be determined. Of the 210 hands identifiable to side, regardless of their manner of application, by far the majority are right hands, with 154 prints (73%), while only 56 (27%) are left. Among

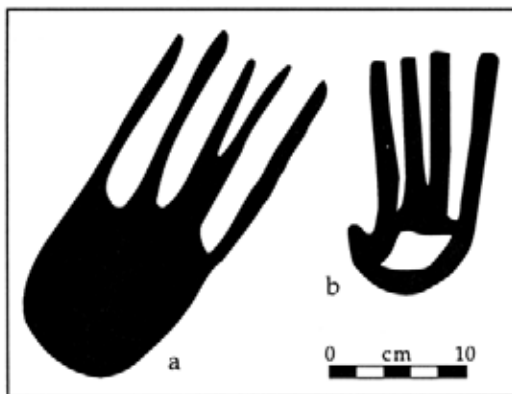


Figure 7. Stylized hands. (a) Black Canyon Handprints, 24ME304. (b) Cope's Bear Cave, 24ME46.

impressed hands in the Smith River area, handedness can only be determined for 50%. Of that 50%, two-thirds are right hands, and one-third are left hands. The same breakdown is found among stylized hands.

HANDPRINT SITES

As with all archaeological sites, the cultural contents, context, and physical location are important in determining site function. Across the state



Figure 8. Stylized hand at Black Canyon Handprints (24ME304).

most hands are found at sites that also have other kinds of rock art figures. Of the 67 sites with hands, 62 (93%) also have other figures, while only five sites have nothing but hands. Of the 413 total hands recorded statewide, 351 (85%) are at sites with other figures. At most sites, hands are simply one kind of figure among a variety of figures on the panel, and their intended association or interaction with other figures is not readily apparent, if there was any. However, at some sites hands play an integral part of a planned scene, as exemplified by the following two sites.

Rock Creek Pictographs (24LC33) Panel 5 is designated the "Shield Panel" because it is dominated by two large complex circular designs, each about 3 feet across and situated high on the verti-



Figure 9. Example of hand/bear paw confusion at Lower Blacktail Mountain Cave (24GA301).

cal cliff face, which resemble shields (but do not necessarily represent that motif). Coming off the top of the slightly higher right-hand circle is a zig-

zag line, at the end of which is a solid stylized hand with four fingers and no thumb (Figure 10). Just to the left of this hand is another zigzag line with an arrowhead pointing downward toward a vertical column of at least seven, nearly horizontal impressed hands between the two large circles. The seven identifiable handprints in the column alternate right-left from top to bottom and appear to occur mostly as pairs (the single right hand at the bottom may once have been paired also). Some overlap of the circles onto the impressed hands suggests the hands were painted before the circles.

A second example of hands integrated into a planned scene is at Whitetail Bear (24JF605), a small rockshelter in the granite boulder mountains east of Butte. One panel at this complex site is dominated by a large grizzly bear, an open-bodied figure outlined in red liquid paint. Immediately at the rear of the large bear, and apparently painted at the same time, is a very small animal that may be a big horn sheep (Merrell and Turner 1997). After the animals



Figure 10. "Shield Panel" (Panel 5) at Rock Creek Pictographs (24LC33) showing stylized hand above the right circle and the impressed hands between the two circles. The largest circle is about 3 ft across; handprints are adult size.

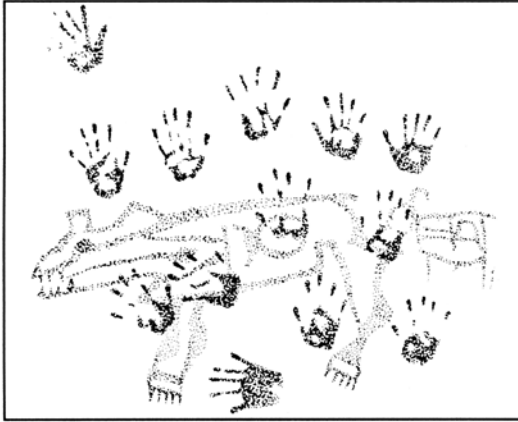


Figure 11. Copy of panel at Whitetail Bear site (24JF605) showing impressed handprints overlying a large red grizzly bear and small animal. (Drawing by James Keyser).

were painted, a thin crystalline layer formed over the panel, and subsequently red handprints were impressed around and on top of them (Figure 11). Although there was a time lapse between the two painting episodes as evidenced by the crystalline layer, the handprints were obviously placed in a manner to interact with the animals.

In a few cases where a number of different kinds of figures occur at a site, handprints may be in a separate area from the other figures. When this occurs the hands are placed at one end of the paintings, or perhaps considerably beyond the other paintings or at the edge of the site. Examples occur at the Canyon Mouth Site (24ME341) and Pink Shelter (24ME370), in the Smith River area, where single hand impressions are placed on the far left side of each shelter (as one faces the site).

Handprints dominate at six sites in which they occur on panels with other figures, rather than on separate panels. At the Black Canyon Handprints (24ME304) in the Smith River area a hand panel with two rows of 14 impressed hands dominates the bluff (Figure 12). Other figures include fingerlines, anthropomorphs, circles, smears, and rows of parallel crayon lines; but the large layout of hand impressions overwhelms the other figures. At Reighard Shelter (24ML393) along the Musselshell River are five panels of pictographs along the long back wall. Panel A has 22 impressed hands, all right. Panel B has 12 right-hand impressions, and Panel C has 23 impressed hands (22 right, 1 left) arranged in five rows. The 57 hands at this site



Figure 12. Impressed hand panel at Black Canyon Handprints (24ME304). Another right handprint is isolated 90 cm to the lower right.



Figure 13. Arrangement of handprints at Handprint Bluff (24ME133).

dominate the other figures, which include several anthropomorphs (some of which are shield bearers). Many of the Reighard handprints are unusual in that after the impressed hands were placed on the wall many had the palms (and sometimes the fingers) pecked out by a small sharp object.

HANDPRINTS-ONLY SITES

The following four sites in the Smith River area contain only handprints. The only other handprints-only site is a cave with negative handprints in the Big Belt Mountains, about 50 miles to the southwest. These five sites represent only 7% of Montana handprint sites, but the 62 prints account for 15% of the 413 hands recorded in the state.

Swamp Cave (24ME366). This small, room-like rockshelter on a Smith River tributary contains 25 handprints in medium to light red paint. High on the wall and upper ledges are 16 impressions and 9 stylized hands, some of which are in deteriorated condition. Of the five handprints-only sites, this is the only one with stylized hands.

Rock Creek Handprints (24ME363). A slightly overhanging limestone bluff about 30 feet high is on a major tributary of the Smith River. On a naturally yellowish surface of a small alcove 3 feet wide, 2 feet tall, and 4-5 feet above the present ground surface, is a cluster of seven impressed hands in reddish-orange paint. Five prints are still in good condition.

Handprint Bluff (24ME133). On an exposed bluff that rises directly from the Smith River are 19 impressed handprints visible only from the water. The bottom row is about 12 feet above normal water level and cannot be reached by a person standing in the water. The prints are arranged in five



Figure 14. Comparison of an impressed handprint at Whitetail Bear (24JF605) with an actual female hand.

rows plus an isolated print somewhat below the others (Figure 13). All are stamped in medium to light red paint and include 14 right hands, 3 left hands, and 2 unassignable.

Sheep Wagon Handprints (24ME372). A small, alcove-like shelter is in an open bluff separated from the Smith River by a narrow terrace. A horizontal cluster of nine impressed handprints is about 15 feet above the present ground level, too high to reach today, much like Handprint Bluff. The prints are of medium to light red paint and include three right hands, one left hand, and five unassignable.

IDENTITY OF THE PAINTERS

Impressed positive handprints account for 84% of the 122 hands in the Smith River drainage and occur at 15 sites. These impressions have the potential to tell us something about the age and sex of the painters. In the Smith drainage all hand impressions are in the size range of adult hands (about 15-20 cm long from the bottom of the palm to the fingertips). These prints make only a generalized age division, separating older juveniles and adults from young children. It is unlikely that anyone under the age of about 12 made any of the impressions. Of all the impressed handprints recorded in Montana, only four are reportedly smaller than adult hands. Two are at Avalanche Gulch Mouth Shelter (24BW19) in the central part of the state and, although not in good condition, appear to be the hands of a small child probably about five years old (Greer and Greer 1992). The other two prints are in east-central Montana at Fish Creek Pictographs (24WL401) and appear to be from a child about 8 to 10 years old (Conner 1962b:18).

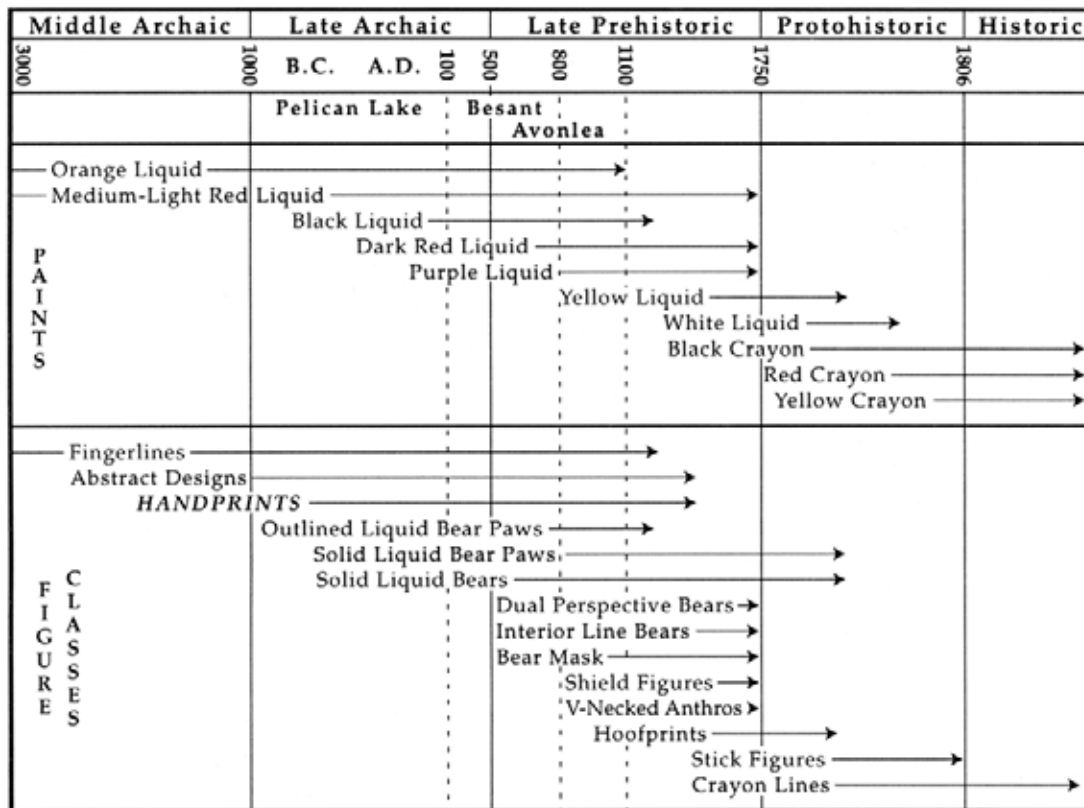


Figure 15. Rock art chronology in central Montana. Upper half shows distributions of paint attributes. Lower half shows handprints relative to other figures in the area (after M. Greer 1995).

Gender suggestions must be evaluated separately and placed in overall context with other lines of evidence, such as associated figures or panel scene composition. For example, handprints placed over a large adult bear and another smaller animal at the Whitetail Bear site (24JF605) in southwestern Montana may have been associated with female fertility rites (as suggested by Keyser, personal communication 1994). The size and shape of those prints suggest they are from adult females (Figure 14).

Previous studies suggest relative finger extension, though not necessarily relative finger length, may be sex-linked and could indicate sex at least part of the time (Garrett 1971:121; Czaja 1984:1.17). The suggestion is that there is a presently unmeasured statistical preference for women's index fingers to extend farther than the

third finger, and for men to be the opposite. Since details of the occurrence, most importantly the error, presently appear to be unavailable, the distinction is not applied here to the Montana handprint sample, but the method has potential for future rock art research.

FUNCTIONS OF HANDPRINTS IN MONTANA

Explanations for handprint meaning range from secular signatures to ceremonial abstractions (for example see Conner and Conner 1971:18; Davidson 1975:158-160; Keyser 1979:173; Mallery 1972:711-715 [1893]; Patterson 1992:107-108). The physical and cultural context of handprints relative to contents and aspects of the panels in which they occur is especially important to their functional explanation. This relationship is exemplified

by the Whitetail Bear site (24JF605) in southwestern Montana (discussed above). In central Montana, of the 122 handprints at Smith River area sites, unlike anthropomorphs and zoomorphs, most (75 hands, or 61%) occur on bluff faces, with only 30 hands (25%) in rockshelters and 17 (14%) in caves. In the Smith River area, the majority of all impressions occur on bluffs, while most stylized hands occur in rockshelters.

Also in the Smith River area, functional analysis based on site setting and rock art contents proposes explanatory models for ceremonial functions, marker functions, and event record functions (Greer 1995:206-252). Ceremonial functions include such activities as shamanism, vision quests, and fertility rites. Marker sites function as an announcement to those who see them. Announcements may have relayed information on trail routes, hunting grounds, or tribal identities. Hands are less frequently associated with ceremonial caves than they are with open bluff marker sites; none in this area was found associated with an event record function, such as an account of a battle. When hands occur in ceremonial sites, they are more frequently stylized, and when in marker sites they are usually impressions. Hands in this area occur in sites of different general functions, and hands were apparently produced for several different purposes.

AGES OF HANDPRINTS IN MONTANA

Dating of pictographs in the Smith River drainage has been attempted through a study of superposition and seriation, which indicates that kinds and colors of paint are temporally the most consistent and sensitive attributes for chronological change in that area (Greer 1995). Through seriation a relative time scale has been developed based on a combination of superpositioning and cross-dating of figures with similar figures that had been dated by other means including radiocarbon (Greer 1995:260-301). When information on the kinds of paints used to make impressed hands in the Smith River drainage was entered into the seriation time scale, hands formed a continuous temporal distribution, overlapping with fingerlines and abstracts on the early end of the scale, at least as early as the Middle Archaic, and overlapping with black crayon figures on the later end of the graph, with hand-

prints probably ending about A.D. 1400 (Figure 15). Handprints at the Whitetail Bear site (24JF605) of southwestern Montana are later than the large grizzly bear, although handprints throughout central Montana in general appear to be contemporary with many impressive bear representations (Greer and Greer 1997). Even though only impressions were used in the seriation analysis, all impressed and stylized hands in the Smith River drainage are made of orange or red liquid paints, and superpositioning indicates these are early colors in the drainage. Chronology has not been analyzed for other parts of the state, but it is expected that handprints were no longer a prominent rock art motif by the middle of the Late Prehistoric period.

This time estimate for handprints concurs with earlier ideas offered by Stuart Conner (1962b:8), who wrote that he had not seen handprints associated with European contact items. With the increased data base of the 35 years since Conner's observation, only two sites in southeastern Montana, 24ML416 and 24YL403, have been recorded with both horses and handprints listed among their motifs. At 24YL403 (North Alkali Creek Pictographs), the horses and hands are on different panels, are of different paints, and do not appear to be contemporary. The 24ML416 (Cherry Spring Pictographs) site form indicates the horse is on a separate panel from the handprint, and they are made of different paints, with the hand in an orange-red liquid paint and the horse in black (Moe 1972). Moe suggests the panel was painted during more than one episode, and we believe the horses and hands are not contemporary here either.

SUMMARY

Hands occur nearly exclusively as positive impressions or stylizations in Montana rock art, and they overwhelmingly occur in the central part of the state. Only two sites have negative prints. Prints appear to have been made from at least the Middle Archaic through the first part of the Late Prehistoric period. There is no evidence they were a common rock art motif during the Protohistoric and Historic periods, although they were used for other purposes such as horse, tipi, and body decoration during those times (Conner and Conner 1971:18; Mallery 1972:711-715 [1893]). In the Smith River drainage some evidence suggests they were

made mainly by adult males and apparently were associated with more than one site function. Impressed hands are more likely to be found on open bluff marker sites, and stylized hands are more likely to be in ceremonial cave sites.

ACKNOWLEDGMENTS

Thank you to our fellow rock art researchers in Montana, both amateur and professional, for filing site information with the records office of the SHPO. Distributional, morphological, and contextual studies are impossible without this kind of information, and our experiences gathering information in other parts of the country, such as for our New World dark zone project, have shown that not all researchers have this consideration for others. Therefore, we want to thank all those Northern Plains people who took the time to make their information available to other researchers, especially long-time contributors Stu Conner, Jim Keyser, Larry Loendorf, and the late Lynn Fredlund and John Taylor. Special thanks also go to Mark Sant, BLM Dillon Resource Area Archeologist, and Sandra Morris, Beaverhead-Deerlodge National Forest North Zone Archeologist, for telling us about new handprint sites as soon as they found them. Thank you to the 1998 Helena PIT project, under the direction of Carl Davis, for increasing our knowledge on negative handprints (and especially to the discoverer, George Poetschat). Thanks also go to all the landowners who allowed us to visit sites on their property, especially Bill Galt, Beth Curran Cummings, Ted Cope family, and Margaret Reighard and her sister, Shirley Clark. Our central Montana rock art studies have been greatly helped through the years by Doug Habermann, Montana Fish, Wildlife, and Parks, and Richard Newton and Kelly Keim, archeologists on the Lewis and Clark National Forest. Dr. Robert A. Benfer, Jr., University of Missouri, helped with information on sex-linked characteristics of hands. Thank you to Dr. Linea Sundstrom for her editorial comments, and to Dr. Julie Francis and Dr. James Keyser for their thoughtful, in-depth reviews. We also thank Jim for permission to use his drawing in Figure 11.

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