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La Pintura

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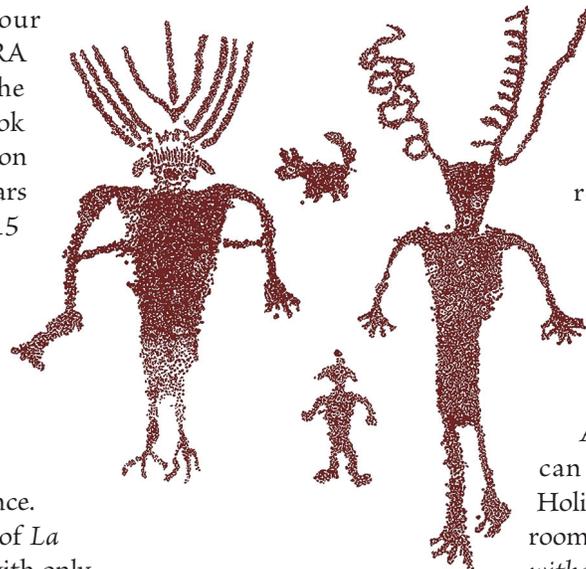
<http://www.arara.org>

Time to Submit Abstracts for ARARA 2014 Conference

By Mavis Greer, James D. Keyser, and Donna Gillette

IT is now time to submit an abstract for your presentation in Rock Springs, Wyoming, at ARARA 2014. The Call for Papers has been posted to the ARARA website (www.arara.org) and to our Facebook Page (2014 ARARA Conference). The presentation categories have not changed from the past few years and include Contributed Papers (maximum of 15 minutes), Reports (maximum of 10 minutes), and Posters. As has been our policy for several years now, your presentation must be in PowerPoint; no other presentation program can be used, and slides cannot be used. Please submit your abstract via email to: 2014AbstractsARARA@gmail.com. The deadline for abstracts is May 1, 2014.

The field trips are being prepared for the conference. Further details will be provided in the next issue of *La Pintura*. These trips are mostly easy to moderate, with only a couple in the difficult access range. They are on both public and private lands. If you are driving to and from the conference, we will be providing information on sites open to the public that can be visited when approaching Rock Springs from various directions. Every attendee should be able to have



both a Friday and Monday field trip, if their schedules permit.

Please make your reservations at the Holiday Inn located at 1675 Sunset Dr., Rock Springs, Wyoming, for July 4-7, 2014, as soon as possible.

As a reminder, you can either stay at the Holiday Inn (\$89) where rooms have been reserved *without* breakfast, or at

the Holiday Inn Express (\$99), which is immediately across the street from the conference venue, where breakfast *is* included. You can either reserve online at <http://www.holidayinn.com> or call them at 1-307-382-9200 or 1-800-315-2621. Be sure to mention ARARA for the conference discount. ☉

Earlier than Usual Deadline for AIRA Vol. 41, Rock Springs

IN case you missed this announcement in our 2013(4) Issue, presenters who wish to have their papers published in *American Indian Rock Art, Volume 41*, covering the ARARA 2014 conference in Rock Springs, Wyoming, should take note of the May 2, 2014, deadline for submittal of your paper. This atypically early deadline is due to editorial schedules and the July 4th weekend date for this upcoming ARARA Conference.

A copy of the Authors' Guideline for AIRA Volumes may be obtained from David Kaiser, albion2000@netzero.com.

Your final paper ready for peer review should be submitted no later than May 2, 2014, to: Jim Keyser, jkeysefs@comcast.net or 1815 SW DeWitt, Portland, OR 97239. If you do not submit in time for Volume 41, your paper can be considered for the subsequent AIRA Volume 42. ☉

38th Annual Rock Art Symposium—San Diego Museum of Man

By Jeff LaFave

ON November 2, 2013, the San Diego Museum of Man held “Rock Art 2013,” the 38th Annual Rock Art Symposium organized by Ken Hedges. As happened last year, the symposium was held at the Mingei International Museum auditorium in beautiful Balboa Park. The event was well-attended by 112 participants coming from all over the United States.

There were 13 different presentations this year, led off by Ken Hedges’ talk on “The Rocky Valley Labyrinth: An English Petroglyph Adventure.” Hedges’ talk examined the classical labyrinth motif and its wide distribution in the Mediterranean region from northwestern Spain to Syria. He discussed the Bronze Age roots of the motif and famous examples, including the so-called Cretan or Minoan labyrinth circa 300 B.C. pictured on coins from Knossos, Crete, which is symbolized in the story of the Minotaur. Hedges’ presentation also discussed that the labyrinth figures prominently in petroglyphs of Valcamonica in Italy from the 750 B.C. time period.

The ultimate focus of Hedges’ presentation was on a beautiful labyrinth petroglyph site known as the Rocky Valley Labyrinth located in the Cornwall region of England. First discovered in 1948, the carvings were initially thought to be Bronze Age, but recent historical research suggests that they likely were carved by the inhabitants of an 18th century Trewethet mill located at the site.

The second presentation, by Steve Freers, wrapped up some of his ongoing handprint research. The presentation was titled “Stature and Gender Projections from Pictograph Handprint Evidence in Southern California.” This talk followed up Freers’ excellent presentation at IFRAO earlier in the year at Albuquerque, New Mexico, and dealt with projecting stature and gender based on measurements of handprint pictographs.

Freers has been researching handprints in southern California for well over a decade, and has conducted a regional analysis of 480 handprints from 49 rock art loci where he was able to obtain accurate measurements. The goal of his investigation was to infer the physical stature and gender of the most likely Native American participants by applying four published stature and gender predictive equations, determine their field efficacy, and determine the predictive agreement level. Freers then analyzed the resulting data against the backdrop of current ethnographic understanding and contemporary assertions of regional rock art style and function.

In southern California, one of the primary ethnographic explanations for rock art is girls making paintings during puberty ceremonies. Freers has found that handprints at certain rock art sites is qualitatively consistent with ethnographic descriptions of pictographs made at the conclusion of the girls’ puberty ceremonies. They do, indeed, have impressions measuring in the stature range of neo-adolescent females. Conversely, rock art construed as being created in a more complex and measured manner (e.g., Rancho Bernardo style) contains handprints that analytically suggest it was made by males of older adolescent or adult stature.

The third presentation, “An Overview of the Rock Art in the Lower Drysdale Region of the Kimberly,” was given by Jeff LaFave. It initiated with an overview of rock art in the Kimberly, including the famous Wanjina and Bradshaw paintings, including a brief discussion of the contentious issues with regard to the term “Bradshaw” and alternatives such as Gwion Gwion. LaFave also contrasted Kimberly rock art with other well-known painted regions in northern Australia, including Arnhem Land, the Victoria River district, and the Cape York/Laura region. Then he discussed rock art in the lower Drysdale region based upon observations made during a recent trip with a group led by Joe Schmiechen, locating and recording sites.

A major aspect of LaFave’s talk compared historical photos by important researchers such as J.R.B. Love and Herbert Basedow with Bradshaw paintings. LaFave explained such comparisons had been pioneered by David Welch and then compared historical photos to sites he had visited on two prior trips. While he was clear to not take the position that Bradshaw art was made by current historical groups, comparisons of the historical photos with many Bradshaw sites indicate that the latter have apparent depictions of activities that are represented in the former, including ceremonial activities, items of material culture such as headdresses, the use of boomerangs, etc. The presentation also discussed that while focus is usually given to the elaborate anthropomorphs in Bradshaw art, a number of other motifs are often found, including handprints and various animals.

John Rafter gave an interesting presentation titled “Continuing the Search for More Sun-and-Net Designs.” Rafter’s presentation dealt with a comparison of historical literature from Constance DuBois and Philip Sparkman to certain motifs in southern California rock art. These ethnographers recorded that the Luiseño in the Riverside

area had a sacred ceremonial object, the *wanal wanawut*, described as a long net used in rabbit drives that specifically denoted the enigmatic Milky Way and its spirit. Ethnographic information indicates that the Milky Way was believed to be where the souls of the departed are to be tied in the sky. Rafter then focused on various rock art sites throughout the Southwest that include net-like designs, and he discussed the possibility that they may relate to this or a similar myth. Rafter concluded that the widespread prevalence of this rock art design seems to indicate that Uto-Aztec linguistic groups regarded the sun and the Milky Way connection as important not only in their seasonal living, but as necessary in their ceremonial and religious activities.

Jon Harman gave an excellent talk regarding painted sites in Baja California, titled “A Tale of Two Cañadas: The Most Northerly Great Mural Site Yet Discovered.” Harman has been doing extensive field work in Baja California for many years, and is especially interested in the peripheries of Great Mural rock art where it transitions with other styles, namely abstract paintings. This paper focused on sites near Rancho Viejo San Gregorio, where there are two cañadas perched as hanging valleys at the edge of a deep and steep-sided arroyo. The cañadas are separated by less than 300 yards and both have pictographs in rock shelters. In one, the painting is abstract and similar to other Northern Abstract sites found to the north. In the other, rock shelters contain classic Great Mural art—the most northerly occurrence of this style now known.

Harman was able to bring out the faded but beautiful paintings with his incomparable DStretch program to vividly portray images, including a line of what may be “dancing rabbits.” Harman went on to discuss that the abstract painted site was apparently in a much better location than the Great Mural site (better water source, better setting, etc.), and to consider whether or not that meant that the abstract sites were painted before the Great Mural site nearby was occupied in a less desirable location.

Steven Waller followed with another one of his interesting acoustic presentations, focusing this time on the flute player motif, titled “Flute Players and Pipers: Musings on Music and Rock Art and Megaliths.” Waller talked about how musical pipes have been found in Ice Age caves and ancient burials associated with megaliths. He further discussed how the flute player motif is typically found in echoing locations. Waller also discussed “piper’s stones” in Europe, a common term for megalithic structures in the British Isles, that suggests stone circles and megaliths with echo and acoustical properties. This emphasized the magical qualities of the flute, particularly its fertility associations, and Waller discussed how these phenomena interact with

the megaliths. Additionally, Waller discussed how megaliths can create acoustical interference patterns and that people can actually hear such patterns. Later in the day, Waller gave a demonstration of psycho-acoustic phenomena and a “virtual” Stonehenge.

Ken Hedges gave a second presentation titled “Mystery of the Standing Stones: Rock Types as Determiners of Petroglyph Site Location.” Hedges focused on CA-RIV-1383, a petroglyph site on the south side of the vast Chuckwalla Valley in eastern Riverside County. At this site, petroglyphs occur on patinated rhyolitic rock identified as quartz latite that occurs as eruptive dykes in an environment of quartz monzonite granite. Rock art to the west at Hayfield Canyon and to the east at McCoy Spring is found on basalt, while the petroglyphs at Corn Spring in the Chuckwalla Mountains are on quartz monzonite boulders.

As part of a survey of rock art sites in the region, Hedges visited a small, previously recorded petroglyph site located 15 kilometers west-northwest of RIV-1383, at the end of a distinctive landform on the north side of the valley. At that site, in quartz monzonite context, the Late Archaic petroglyphs occur only on very small outcrops of dark-colored rock visually similar to the quartz latite. A short distance to the east, the same landform had major outcrops of quartz latite, four that Hedges targeted as potential rock art locations. The first location had a very small petroglyph site (three elements along with an array of four standing stones with freshly flaked and broken rocks). Of the three remaining targets, one had a single standing stone but no rock art, another had two Late Archaic petroglyph panels, and the third had no archaeological resources. Thus, quartz latite is confirmed as a limited predictor for rock art; but the standing stones were unexpected. They did not appear to be Archaic, but lacking diagnostic artifacts, they could date anywhere from the Late prehistoric period to yesterday.

Alexander (Sandy) Rogers gave a presentation titled “The Coso Petroglyphs: Who Knew What and When?” Rogers is the archaeology curator at the Maturango Museum in Ridgecrest, California, and has been doing work on the Coso petroglyphs and the Ridgecrest region for many years. The focus of his paper was the historical records and account of Coso petroglyphs prior to the creation of the Naval Air Weapons Station at China Lake, which now encompasses most of the Coso rock art.

Visitors often ask whether the community, government, academics, etc., knew that the petroglyphs were there when the government “withdrew” the land from public use, and set it aside for the Navy, near the end of World War II. In his talk, Rogers covered the earliest-known Euro-American report of the Coso rock art from 1860, and subsequent

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reports from the early 20th century, including previously unpublished photographs from 1923 in the Maturango Museum collection. Rogers concluded that in 1943, when the lands were withdrawn, the informed public knew about the rock art and its associated archaeological sites, but it did not affect the terms or conditions of the decision. In contrast, prior claims on land, minerals, and water did influence the terms of the decision. Withdrawal of the land from public use has ultimately worked to benefit the rock art and archaeology by restricting access to the lands and thereby inhibiting vandalism to the sites.

Gregory Erickson gave a subsequent, very interesting presentation, "Newly Revealed Rancho Bernardo Style Rock Art at Water Tank Hill: DStretch Makes a Difference." It focused on the extensive fieldwork that Erickson has been doing in San Diego County. In recent years Erickson has been using DStretch to discover many previously unknown Rancho Bernardo style panels in northern San Diego County. This talk focused on how DStretch has been a significant advancement compared to when previous researchers first started to define the Rancho Bernardo style. The Water Tank Hill site (W-227) contains the largest concentration of Rancho Bernardo style pictographs in the region, and was first recorded by Malcolm Rogers with the San Diego Museum of Man. Erickson thoroughly covered all of the loci at Water Tank Hill, and showed multiple examples of "new" elements made apparent by DStretch, but not evident to Rogers or Hedges. Erickson's presentation is one more reminder of how important Jon Harman's invention of DStretch has been to rock art research and documentation.

Mavis and John Greer gave a very interesting paper on Great Plains rock art titled "Horses at Legend Rock, Northwestern Wyoming." Legend Rock is one of the best-known Dinwoody style sites, and this paper focused on the horse images. As the Greers explained, horses frequently occur in the rock art of Wyoming, which makes their limited presence at the large Legend Rock site intriguing. Their scarcity, limited stylistic variation, and non-association with most panel compositions indicate that horses are late additions, and were placed there by a different cultural or social group than makers of the Dinwoody Style rock art. Although horses are not integrated into other scenes, their presence shows that the function of Legend Rock was not uniform through time, although horses, like other figures, confirm that all aspects of the site have ties to other rock art sites in the Big Horn Basin of northwestern Wyoming.

Peter Merlin of Lancaster, California, gave a presentation titled "Through the Eyes of Ancient Artists: Visions of a Green Sahara," addressing Tassili rock art. The Tassili

n'Ajjer region in southeastern Algeria contains an extremely large and important concentration of prehistoric art. The Tassili plateau and adjoining plateaus in the central Sahara contain thousands of paintings and carvings dating from ca. 6000 B.C. into the earliest centuries of the modern era, and adorn the walls of rock shelters and boulders. Merlin discussed the variety and type of rock art, from paintings to petroglyphs, and from small, delicate figures to large, mural-type compositions. Merlin's focus was how Tassili rock art recorded a changing environment, as it transformed from verdant savannah into hyper-arid desert. Merlin opined that many of the images depicted people hunting wild game, warriors fighting, and herders tending cattle, representing climatic conditions that no longer exist. He concluded that the beautiful images are both a record of past times and a poignant reminder of the delicate and changing nature of our biosphere.

Anne Stoll of Claremont, California, gave a memorable talk on rock art in Botswana titled "Painted Past and Veiled Future at the Tsodilo Hills." Stoll's paper resulted from a recent visit to this UNESCO World Heritage Site, and the variety of paintings that she saw. Using local guides, Stoll was able to visit 26 sites. Her images of some panels included some using DStretch. Stoll also covered some changes in how the site has been managed over time. Some of her research is described in this issue of *La Pintura*.

Finally, Ken Hedges gave a short presentation titled "Internet Resources for Rock Art Research." Hedges explained that he often gets the question, "Where can I find information on rock art?." In his talk about rock art resources on the internet, he explained that it is easier and easier to find information on the internet, and identified some particularly excellent sources, including databases, libraries, and academic institutions. Of the many sources available, one outstanding source that he touted was Leigh Marymor's "Rock Art: A Bibliographic Database," which can be accessed through the Bancroft Library at U.C. Berkeley's website:

<http://bancroft.berkeley.edu/collections/rockart.html>.

With the variety of topics and speakers, the 38th Annual Rock Art Symposium was extremely successful. Ken Hedges is to be commended for his many years of work and for making the symposium such a success! 



DStretch at Nswatugi, Matobo National Park, Zimbabwe

By Anne Q. Stoll, photographs by George Stoll

PREHISTORIC painted sites abound in Africa—in fact, a solid case can be made that there is more painted rock art in sub-Saharan Africa than anywhere else in the world. The richness and variety of Africa’s parietal art have dazzled observers for centuries. But there can be a problem. Not only is much of it found in remote locales, the images themselves have often faded through the ages. Once brightly painted panels can be too faint to distinguish, or are smudged, or covered with dust or lichen, or sometimes, even defaced.

Enter DStretch digital enhancement to help solve the problem. Standing in leafy shade before a panel of faint red images, the intrepid rock art photographer pushes a button on a modest hand-held camera and soon figures emerge on the monitor, sometimes looking as fresh as if just painted. Our guide is amazed, dumbfounded, then, “Let me see that!” he exclaims. Details not seen for perhaps a thousand years become clear—much better than spraying rock art with water or Coke, he agrees. So it was this past June, 2013, when George and I traveled to Matobo National Park near Bulawayo, Zimbabwe, to photograph rock art. Matobo National Park, established in 1926, was designated a UNESCO World Heritage Site in 2003, and today it preserves well over 350 painted rock shelters in some 424 square kilometers (about 164 square miles) of distinctive landforms and high botanic diversity.

At some point all rock art researchers bemoan faintness of pigment; even those who claim to have risen above the “gaze and guess” stage. “It looks like a _____ (fill in the blank) but it’s just too faded to make out,” is the cry. Faintness must be especially painful to those for whom fine-grained analysis of the images is essential to their interpretation of the art’s symbolic meaning. Writing about the rock art of Cederberg in the western Cape province of South Africa, John Parkington complains that often images “are very difficult to see, partly because almost all of the paint has peeled off the rock surface, leaving little more than a ghost of the original images” (Parkington 2002:32). He then goes on to identify many subjects and themes with persuasive confidence. Likewise, David Lewis-Williams devotes an entire small book to an examination of a single panel of painted art, the so-called Linton panel (Lewis-Williams 2011). Writing with his trademark clarity and flair, Lewis-Williams analyzes the details of this panel within his now-famous interpretive structure for San rock art based, apparently, entirely on naked-eye examination. We can’t help but wonder: would these interpretations change if new images and details were

revealed? If faded paint could somehow be visually restored, obscured areas made bright? And if so, could it be done easily, inexpensively, repeatedly, without ever touching or impacting the art itself?

Hundreds, if not thousands, of rock walls and caves in the Matobo Hills of Zimbabwe contain paintings made by long-gone San foragers of the Later Stone Age. Ardent Zimbabwean researcher Peter Garlake asserts that the Matopos (interchangeable spelling, Matobos/Matopos) are “the world’s last and greatest undiscovered artistic and cultural treasure,” yet even he concedes that many of the images are “small, fragile, often faint and fragmentary” (Garlake 1995:7, 13). An accurate study of the rock art, he maintains, “can only be achieved through exact tracing of every detail of a large number of paintings, an arduous, uncomfortable and prolonged process” (Garlake 1995:44). We would counter that although careful copies have been produced this way, today’s preservation practice proscribes direct tracing. Elspeth Parry, who has studied the rock art of the Matopos for many years, wrote:

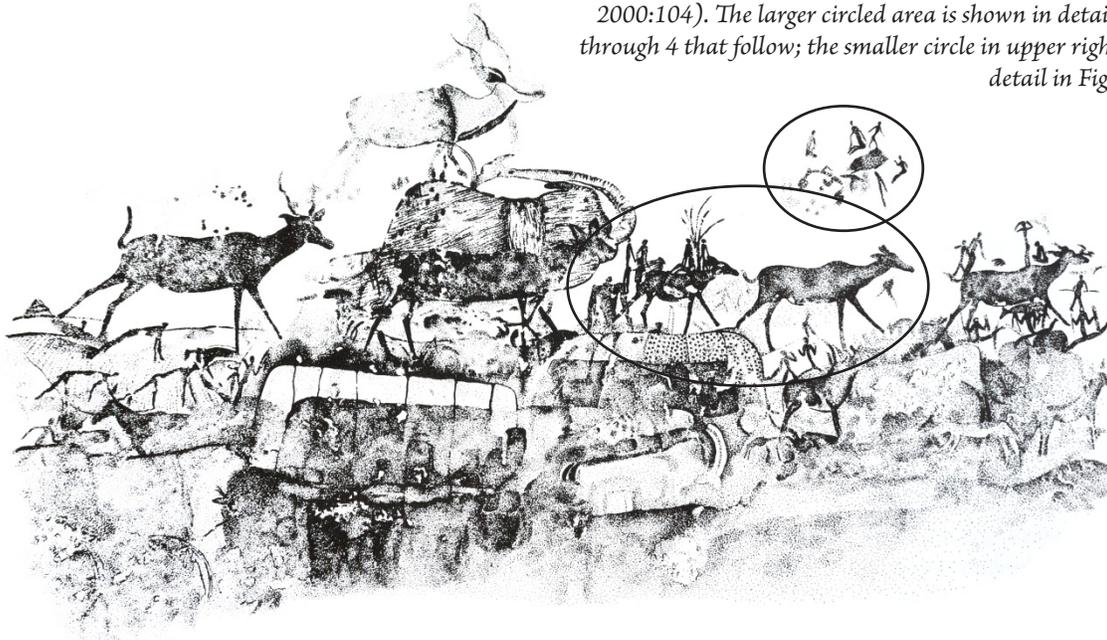
[t]ouching the paintings accelerates deterioration, especially as many are extremely friable, the paint visibly standing proud from the rock and crumbling to dust at the lightest touch. For this reason the author and artist never touch or trace the images. It can be argued that over the years inestimable damage has been done by researchers in the name of science. Pressing onto an electrostatic material (such as tracing film) with pens and pencils will energize the film, loosening flakes, and can only be regarded as damaging” (Parry 2000:1). For her analysis and interpretations, Parry relied on the drawings of the late Janet Duff, a scientific illustrator who was “trained to achieve absolute accuracy. [Parry 2000:x]

In our view the goal of “absolute” accuracy in rock art recording is unattainable, perhaps even hubristic. Striving for better data without impacting the art, however, is certainly valuable and achievable. Recent advances in computer-aided digital image enhancement have brought a higher level of veracity within reach, as we will demonstrate. Digital image manipulation is itself nothing new—useful programs have been readily available at least since the 1990s. Adobe Photoshop was created in 1988 and released in affordable form for Windows users in November, 1994. Photoshop today is reputedly the most popular photo enhancement tool in use worldwide (Schewe 2000:20), and we use it too.

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DStretch at Nswatugi... *continued from page 5*

Figure 1. A TIFF digital image of Janet Duff's drawing of part of the main panel in Nswatugi Cave (as published in Parry 2000:104). The larger circled area is shown in detail in Figures 2 through 4 that follow; the smaller circle in upper right is shown in detail in Figures 5 and 6.



Recently Photoshop was effectively employed to enhance and “renovate” digital images of damaged and vandalized rock art for publication (Werner 2012). Researchers attempting to resolve the visual tangle of pigment superimposition have also achieved some success using Photoshop by converting images to black, white, and gray layers (Brady 2006). Adobe’s target application, of course, is not specifically rock art research, and results vary greatly depending on the skill of the user.

Despite its large fan club, Photoshop no longer enjoys exclusive standing at the top of tools for rock art image enhancement. DStretch, short for decorrelation stretch, possesses several distinct advantages over Photoshop. For one, DStretch can be legally obtained free of charge (at www.dstretch.com, though contributions are welcomed)—no small bonus compared to the current retail cost of Photoshop. Further, results obtained with DStretch used at its basic level can easily be replicated. An enhancement made using any of the standard algorithm buttons on the DStretch bar can be consistently reproduced over time by different users without the steep learning curve that Photoshop proficiency requires. Sitting at your desk and working with images from the field using DStretch is a relatively user-friendly experience, often full of surprises, compared to manipulating the opaque symbols and commands of Photoshop, in my humble opinion.

Most importantly, DStretch recently became a truly portable field tool. Jon Harman has installed his DStretch plug-in into at least four off-the-shelf models of Canon digital cameras, thereby creating a remarkable tool for rock art detection, the DStretch camera. It was the operation

of this camera that so amazed our guide in the Matopos (and everywhere else we’ve taken it). The DStretch camera was introduced to the public at the American Rock Art Research Association annual conference in Del Rio, Texas, in 2010, and was an overnight sensation. We watched with rapt fascination as the SHUMLA ladies used it at a rock art site during a conference field trip. Instead of postponing enhancement or lugging a laptop to a remote site, the DStretch camera transformed digital rock art images on the spot in real time. At first sight I was amazed, dumbfounded, and exclaimed “Let me see that!” Archaeologists conducting rock art surveys in Australia and the American Southwest consider DStretch to be an indispensable field tool (Brady and Gunn 2012:632-633; Christensen et al. 2013:31) and others are joining in as its advantages become more widely recognized. It is now also possible to load ImageJ and DStretch onto a small, lightweight computer tablet equipped with Windows 8.1 and a 2-megapixel camera. The Canon DStretch cameras still produce the best optical results, but the tablet supports other useful software, can store and display stretches, connects to the internet (unless you are truly in the bush), and can repair your car while you’re eating lunch (just kidding). Doubtless more amazing developments are just around the corner.

Meanwhile, back in Zimbabwe, high-resolution digital photographs of the San rock art paintings in Nswatugi Cave, Matobo National Park, were taken by the authors on June 26, 2013, and DStretch was used to produce color digital enhancements. As is evident from the examples that

follow, faint, nearly invisible image details were observed, particularly on the periphery of the main panel. For the best black and white results we obtained, DStretch enhancements with the greatest contrast (primarily CRGB and RGB0) were converted to black and white using Photoshop.

Duff's illustration of a panel (Figure 1) compares to Figures 2 and 3, the same JPEG image (Stoll 3438) with different DStretch algorithms applied, with a particular area cropped and enlarged in Figure 4. By creating close-

ups of portions of this complex panel from Nswatugi Cave, additional previously unrecorded figures were revealed. In Figure 4, the arm of the figure on the right reaches up to touch the belly of the kudu cow. On the left, the figure has two arms, one bent back to touch his face. While in no way wishing to denigrate the excellent quality of Duff's drawings, these missed gestures could well contribute significantly to the panel's interpretive meaning.

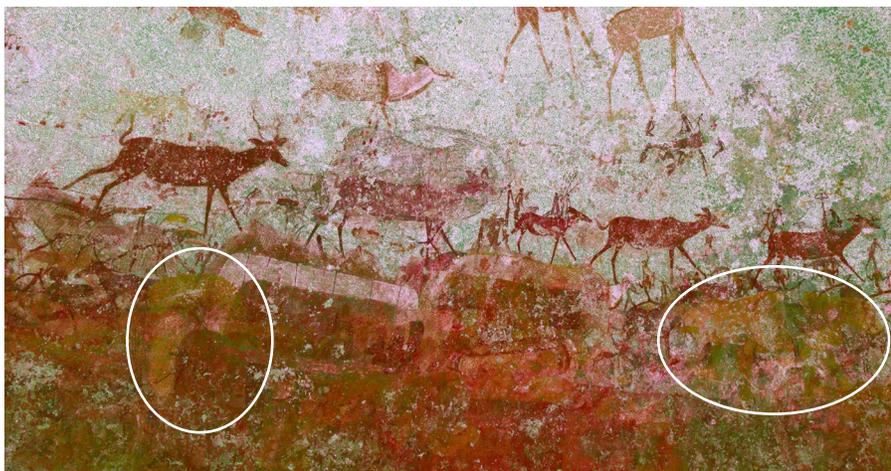


Figure 2. A JPEG digital image (Stoll 3438) of part of the main panel in Nswatugi Cave shown in Figure 1. This highly complex, over-painted rock art panel includes many enigmatic figures some of which have been identified by African researchers, such as the shape called a "formling" (circled above) which may represent a termite or bees' nest (Mguni 2005). This is the standard DStretch RGB0 algorithm without any enhancement using Photoshop.

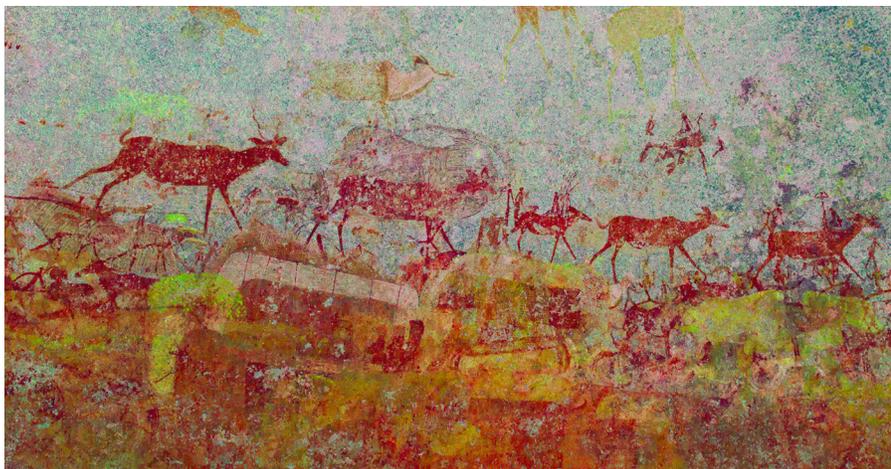


Figure 3. This is the same image as Figure 2 with DStretch LRD algorithm applied. With the yellow pigment highlighted, at least two yellow animals appear, a possible kudu cow with lowered head above the kudu bull on the left side, and a large four-legged composite animal on the right. Additionally, a hook-shaped form composed of yellow dots (possibly bees or termites?) is revealed below the kudu bull, as the outline of the formling (center right) emerges.

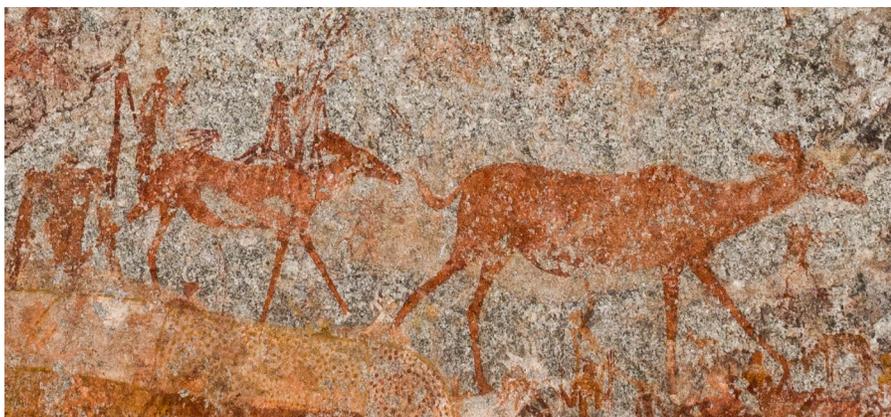


Figure 4. A close-up of the right center of the panel shown in Figure 2 with DStretch RGB0 algorithm applied.

DStretch at Nswatugi... *continued from page 7*

Figure 5. Detail from upper right of drawing of Nswatugi Cave by Janet Duff (see Figure 1, a TIFF digital image).



Figure 6. This is a JPEG digital image (Stoll 3467) of the same image as Figure 5, with DStretch LRD algorithm applied.

A second series of illustrations compares Duff's precision drawing of a small group of figures from this same main panel at Nswatugi Cave (Figure 5) to a digital image of the panel with DStretch LRD algorithm applied (Figure 6). Many possibly important new details emerge; the rectangular shape near the center of this group can now be more completely seen as four humans in some way connected, perhaps lying shoulder to shoulder or beneath a single blanket with their heads protruding. In the human figure above this quartet, details of feet and hair or a headdress are now visible. Formerly blurred pigment is resolved into staffs or arrow shafts, heads, limbs and additional human figures, several assuming the so-called trance posture. This added level of resolution must surely change the interpretation of this grouping.

The final set of illustrations compares Duff's drawing of "Nswatugi Cave duiker" from Parry 2000:26 (Figure 7) to a JPEG digital image of the same two animals in the panel with DStretch RGB0 algorithm applied (Figure 8). As with the previous examples, new details are visible. At least two additional standing figures can now be seen, and what seems

an amorphous mass below the right-hand duiker is resolved into a four-headed rectangle. The now-visible human figure directly above this and touching the rear legs of this duiker might be the source of the sprayed lines seen in both the drawing and the photo. A series of fine vertical lines appear between the duiker.

These enhanced images do not purport to resolve everything of interest in this panel. The intensely over-painted area or "dado" of red paint at Nswatugi (shown in part in Figure 3) which Walker describes as common on the lower walls of large rock shelters in the Matopos (Walker 1994:119), was not very successfully illuminated by DStretch. Duff's trained eye picked out shapes that DStretch failed to register due to a lack of differentiation within the red hue.

In their article on the role of digital technology in rock art research, Brady and Gunn reviewed DStretch along with Adobe Photoshop (Brady and Gunn in McDonald and Veth 2012). Following an explication of Lewis-Williams' argument that manual tracing of motifs is still crucial to rock art recording, the authors state that:

although subjectivity still exists in the use of image-enhancement techniques, we believe that these techniques can reduce the degree of subjectivity inherent in a drawing or sketch, as well as assisting in interpreting an image. Sketching and detailed on-site drawings remain an important part of a recording methodology, especially in the context of superimpositions and colors. However, we would advocate that rather than choosing one technique or another, researchers combine sketching/drawing with digital photography and computer enhancement as a mean of obtaining a more comprehensive understanding of an image or panel. [Brady and Gunn 2012:630–631]

We accept that combining techniques is an intelligent compromise when practical for those seeking to study or record rock art. When limited time or resources require the selection of one technique over others, however, (surely the case in the majority of situations), we assert that DStretch or some equally effective digital enhancement technique must be the first tool of choice. Our examples unequivocally show that DStretch does consistently reveal faint, nearly invisible details in digital images of painted rock art panels. Considering the ease with which the program can be obtained and used, and the possibility that newly-revealed details could well make an important difference in understanding the art, resistance to using enhancement tools appears irrational. Undoubtedly, programs and methods will improve in the future; but as of today, every serious rock art researcher looking at painted art should include digital image enhancement in their methodology.

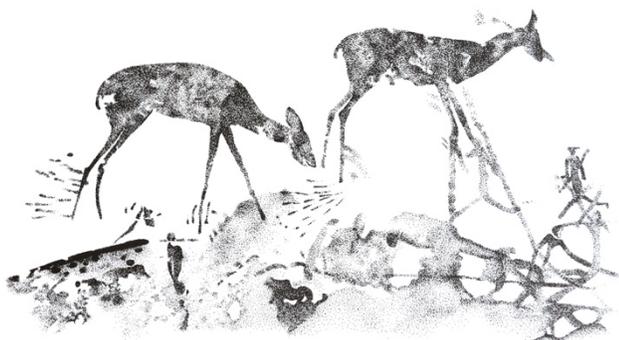


Figure 7. A TIFF digital image of Janet Duff's drawing of a portion of the panel in Nswatugi Cave depicting two duiker (published in Parry 2000:26).

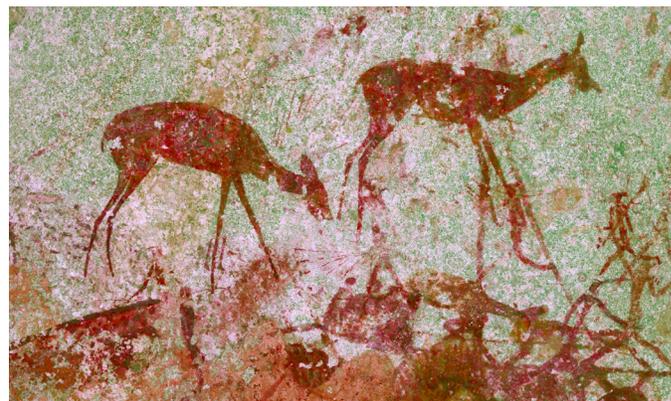


Figure 8. A JPEG digital image (Stoll 3434) of the same panel shown in Figure 7, with DStretch RGB0 algorithm applied. Several hidden figures appear beneath the right-hand duiker. Note the fine lines above and between the animals.

References Cited

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Rock Art Bookshelf

Images and Power: Rock Art and Ethics

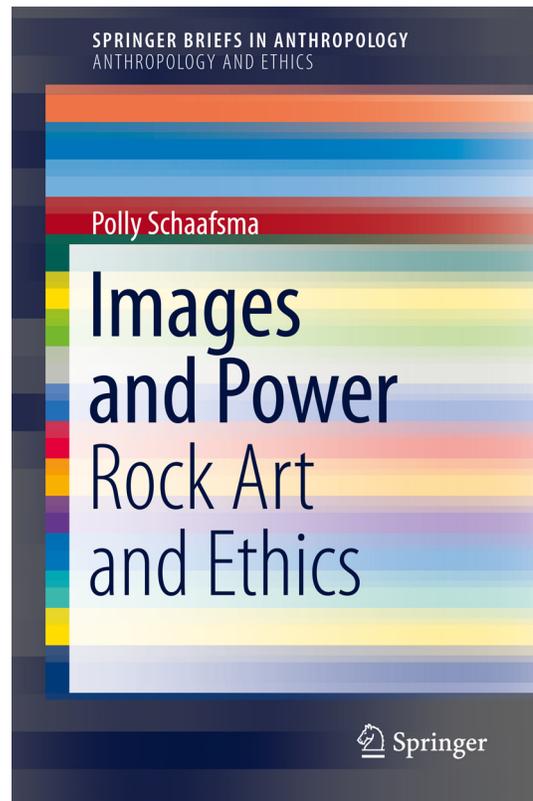
By Polly Schaafsma, 2013, Springer Science+Business Media, New York, 104 pages, 12 illustrations, Foreword, References, Index. E-book \$39.95; Softcover \$49.95.

Reviewed by Tessie Naranjo, Santa Clara Pueblo

IMAGES and Power: *Rock Art and Ethics* is a positional essay by Polly Schaafsma, and the first in a planned series on archaeology and ethics to be published by Springer in their Anthropology and Ethics series within the larger Springer Science+Business Media series. Major theoretical and ethical issues are raised in the context of others' and her own writings on the subject of indigenous "rock art": who made it? when? why? and for what purpose? who owns it? who can use it? can it be sold or purchased? under what conditions is rock art to be conserved or preserved? for whom? In the long run who has the right to give answers to these and other questions? As an enrolled Elder of Santa Clara Pueblo, answers to these questions have personal meaning for me.

Within my homeland (modern Santa Clara Pueblo and its prehistoric environments), I have the privilege of living among rocks, boulders, caves, and walls upon which old images are seen. With each passing day, week, or year, I wonder and speculate about their original meanings and my ancestors who made these images. Luckily, one of my sisters with whom I take deliberate observational walks across our land is as curious as I am about the images we see and the stories that we recall told by community elders. We have foundational conversations about them. But more to the point of this review: we do admit that we have also been influenced in our interpretations by the knowledge and experience given to us by archaeologists who specialize in studies of the American Southwest—including Polly Schaafsma and Curtis Schaafsma.

Polly Schaafsma has spent a near lifetime working in the field of rock art examining details of the various rock art periods in the American Southwest, publishing many papers and books that interrogate images left in the region by indigenous ancestral peoples. From my point of view, she has achieved broad recognition as an ultimate authority on the subject of origins and meanings of images carved, pecked, and painted, found on various base media such as boulders, walls in ruins, etc. From my point of view, she is the number one go-to archaeologist who leads the academic debates on the subject of rock art and ethics asking the questions "who made these, when, and why?" and, perhaps most importantly



for her ethical queries, "who owns it now?"

Considering the world heritage movements these days, indigenous artifacts appeared to some people to be part of the heritage of all humanity and, therefore, can be appropriated by anyone. Yet, the theft of icons, or rock imagery, by individuals who do not come from the community in which the images were created can lead to a series of legal actions, not just philosophical discussions. So, following Schaafsma's lead we might all ask: "at what point does rock art become the heritage of all of us?" (p. 67) or does it ever?

For interpretation of images, Schaafsma turns to the likely descendants of the image-makers. For example, in the summer 2013, my nephew and I along with Polly led a group of non-indigenous people to view wall panels and rock imagery at an ancestral Pueblo site south of Santa Fe, New Mexico. She was very interested in the indigenous interpretation of what we saw on the walls and on the rocks. She wanted to know the indigenous perspective. My nephew began singing a song that explained the "motion" of "dancers" seen on one of the panels. After the song all of us remained silent, there was no need for a western archaeological explanation. We were transported through time by his singing in Tewa. This is just one example of me observing Polly seeking an indigenous explanation at a site.

In her six chapters, Schaafsma examines the tensions that arise between archaeologists and indigenous people regarding

cultural, economic, aesthetic, and other values of the “rock art.” Some individuals within the communities where the “images” are located are determined to keep them as cultural artifacts, and do not want them to be tagged, marked and put away in a museum, filed away or lost in the name of “cultural preservation,” or copied onto t-shirts sold at local curio shops. The individuals want the images to remain on the landscape, and not be copied and sold to tourists. Some archaeologists and some members of indigenous communities want to understand the meanings and values of the images. Each group has a variety of ideas about the best ways to conserve, manage, preserve, or even stay away from image sites.

In Chapter 1, “Introduction,” Schaafsma gives a broad historical and philosophical background to the thinking of people who were influenced by Judeo-Christian beliefs. In that way of thinking, nature-based people happily living in the “outside” place were seen as dangerous in both the Old World and the New World. On the other hand, those who actually lived “close to nature” believed in the sacredness of the outside world. Still, indigenous people who believed in the outside world as sacred were condemned by religious colonists as satanic, as witches, and to be feared. She continues and expands these observations in Chapter 2, “Ethics and Worldviews,” pointing out that in the conflict between “insiders” and “outsiders” the differences lead to the outsider dominating the indigenous scene, and forcing a belief that the landscape is a dangerous place and thus to be exploited. Following the critical stance of Vine Deloria, she joins the conversation that colonialism emphasizes the “economic machine that is the guiding force to exploitations of the landscape” (p. 9). Furthermore, she cites his writings in *God is Red* as philosophical evidence of the importance of keeping the sacred. Those who are of the “outside” world believe that embracing a relationship with the landscape is a sacred privilege, not to be exploited.

In Chapter 3, “The Interpretation Game and Ways of Knowing the Past,” a number of ethical questions are asked, including, “If archaeological data are withheld, how then can one be ethically responsible to both the indigenous and archaeological communities simultaneously?” (p. 22). Furthermore, “What if current traditional knowledge and oral tradition contradict cultural and temporal data determined by archaeological investigations?” (p. 22). Schaafsma mentions various methods used during different periods of archaeological studies, principally the processual model which she says “reduces human beings to the status of seemingly non-thinking entities” (p. 24), calling the model a “one-sided and simple approach to the human past” (p. 24). She ends this critical analysis of the processual model noting that it is flawed in its exclusion of the indigenous voice.

Chapter 4, “Robbing and Reinventing the Nonmaterial Past,” provides in-depth discussion where both indigenous groups and archaeologists turned “social activists” recreate interpretations of the past and “rob[s] the past of meaning” (p. 38). Chapter 5, on the other hand, looks at issues involved in “The Use and Reuse of Imagery: Ownership, Banning, and Commodification.” Here is where we learn how she pursues the question: “Who owns rock art?,” and this really underscores the heart of the essay phrased in this challenging question: “at what point does rock art become the heritage of all of us?” (p. 67). This chapter is about “secrecy and intellectual property and imagery appropriation” (p. 67). The whole book is about “ethically driven interpretations” from both indigenous people and the scientific community.

The basic value of this book for me lies in a statement in the “Conclusion” where Schaafsma says, “In the final analysis, collaborations between archaeologists and American Indians and indigenous peoples elsewhere have the potential of mutually broadening perspectives while recognizing that the goals and kinds of knowledge held will differ” (p. 84). The overall value resides in her deliberate attention to the various ethical issues faced by archaeologists and the indigenous people with whom they work.

Archaeologists working in the United States have had several hundred years of experience working in occupied and unoccupied Native American homelands for the purposes of helping the academic or scientific worlds prove the amount of time and living circumstances that might be revealed in the artifactual worlds. The rock art images offer tempting clues as to the details of life and beliefs that have not been observed or written about by indigenous community members associated with those artifacts. Formerly, or in the early years of American Archaeology, the archaeologist would do the dig, interpret the findings, and maybe not even get permission to remove intellectual property from the sites to a museum, never mind asking indigenous scholars for their interpretations. In the past 25 years or so, archaeologists have increasingly asked indigenous people to give their meaning(s) of an artifact or rock art image or even a ceremonial dance.

There are very valuable and debatable issues raised in this positional essay, and they deserve full attention. Unfortunately, in the copy I was given to review, the many misspellings, missing words, and missing letters detract from the important messages that Dr. Schaafsma is conveying. I wish that her proofreader had been more careful in reading word for word the contents of the essay, catching mistakes that are painfully obvious to me. Even so, I recommend this book to all those seeking answers to ethical questions raised in regard to the study of images known as “rock art.” ❄️

Rock Art Bookshelf... *continued from page 11*

Bangudae: Petroglyph Panels in Ulsan, Korea, in the Context of World Rock Art

2013, *Bangudae Petroglyph Institute, University of Ulsan, Hollym International Corporation*. 231 pages. Hardcover \$29.50.

Reviewed by Paola Demattè, Professor, Chinese Art and Archaeology, Department of History of Art and Visual Culture, Rhode Island School of Design, Providence

THIS book is a welcome addition to rock art studies, a field in which the evidence from the East Asia and particularly Korea is still little known among Western researchers.

The volume is a collection of scholarly contributions by international experts on various aspects of Bangudae, a large petroglyph site on the banks of the Daegok River, near the city of Ulsan, in South Korea. It is covered with countless figures of large and small animals, the most prominent of which are whales.

The collection, which originated from a symposium on the same theme organized at Harvard University in 2012, includes seven thematic essays by Paul Bahn, Esther Jacobson-Tepfer, Henri Paul Francfort, Anne Salomon, Se-gweon Yim, Jun-hi Han, and Ho-tae Jeon. These are preceded by an introductory essay also by Ho-tae Jeon. This mix provides a multifaceted and well-rounded assessment of the site that takes into consideration local historical and archaeological circumstances as well as global connections and theoretical perspectives.

The first essay by Jeon introduces archaeological evidence of the Neolithic and Bronze age in Korea in order to assess the dates of Bangudae. From a thorough analysis of the panels, Jeon comes to the conclusion that the petroglyphs belong to four phases, which fall from the late Neolithic to the Bronze age.

Bahn's contribution is dedicated to the study of Bangudae's whale theme in a global comparative perspective. By examining the most important rock art sites of the world depicting cetaceans, this essay highlights the uniqueness of Bangudae, while at the same time providing an insightful analysis of sites far from Korea that explore the same theme.

In a different vein, Jacobson-Tepfer's essay centers on Siberian rock art and explores the possibility of connections between the Bangudae petroglyphs and the north Asian rock art tradition. Though she finds no evidence of direct links between Bangudae and Siberia, and the Altai specifically, she suggests that there are occasionally interesting parallels in terms of subject matter such as at the Angara sites where fish and seals are represented.

Francfort presents a structural analysis of the Bangudae site that focuses on the type of signs carved on the rock art panels and their relationship to other signs and to the whole. Based on this analysis he tentatively proposes that Bangudae may be a repository of mythic narratives relating to the relations between the animal and human world, hunting and whaling. Though the structuralist approach with its reliance on Levi-Straussian theories may appear old fashioned, Francfort's proposal is intriguing.

Yim's paper addresses the question of the role of shamanism in rock art and in particular at Bangudae. It also discusses the connection of Bangudae with the larger tradition of North and Inner Asian rock art, such as that of the Altai, which is described as spreading from Siberia and Mongolia in the north, to China and Korea to the south. I am skeptical of Yim's shamanistic interpretation of the Bangudae petroglyphs. For years shamanism has been used to explain just about anything in rock art the world over regardless of cultural affiliations. Furthermore, even though shamanism plays an important role in Korean culture, it is not very clear that there is evidence of shamanism in the imagery of the Bangudae rock panels.

Salomon's contribution centers on the question of finding meaning in the petroglyphs of Bangudae. Salomon approaches the problem from a theoretical and comparative perspective bringing in her expertise developed in the study of the rock art of southern Africa to draw attention to questions of visibility, forms, and the processes of making them.

Han's paper focuses on the qualities of the Bangudae petroglyph site in relation to the process of nomination to the UNESCO World Heritage List, and the challenges associated with the nomination process for rock art sites in general. From the available evidence and its thorough analysis by Han, there is no doubt that Bangudae has many of the qualities that characterize World Heritage Sites. The challenge is not only to make the site and its value known to the international community, but also to alert the wider public to the importance of prehistoric art to understanding the development of human culture. One of the strongest arguments for Bangudae enlistment is the site's focus on whales and whaling, and in particular the long history and tradition of the area with whaling practices.

Though this volume has many positive qualities, it also has some serious drawbacks. A major problem has to do with the poor editing of the contributions by non-native speakers of English. The essays translated from Korean are at best awkward, at worst incomprehensible. This is very unfortunate because they present data that are fundamental to understanding the site.

Another hindrance to full appreciation of the material is the lack of geographic maps that would indicate where the innumerable sites discussed in the various articles are. This is particularly problematic in relation to Jacobson-Tepfer's essay where a number of sites in various parts of Siberia are discussed, but this weakness is felt throughout the book. It is symptomatic that the book does not even have a map of Korea, showing where Bangudae is and where other prehistoric or historic sites are (particularly those discussed in Jeon's interesting essays).

Finally, considering all the comparisons being presented, it is unfortunate that no attempt has been made to discuss the rock art of neighboring China, which has several elements in common with Bangudae. Connections do exist between Bangudae and many petroglyph sites in northern China, both in the east and the central regions. This common tradition is evident in the representation of land animals at Bangudae, such as tigers, deer, and goats, that also populate the rock art of northern China. Faces also resemble those that appear at sites in Ningxia (Helankou) and Inner Mongolia (Yinshan). ❖

Handbook of the Kawaiisu

By Alan P. Garfinkel and Harold Williams, 2011, *Wa-hi Sina'avi Publications*, Bakersfield, California, 192 pages, 29 color and 3 black/white figures. Paperback \$32.50.

Reviewed by Bryn Barabas Potter

THE *Handbook of the Kawaiisu* is a compilation of everything you might expect in a book about a Native American tribe. Traditional Kawaiisu territory stretched from California's Tehachapi and southern Sierra Nevada mountains eastward to the Mojave Desert and southwestern Great Basin. Archaeologist Alan P. Garfinkel and Kawaiisu tribal member Harold Williams brought together specialists to examine various aspects of Kawaiisu life, such as Julie Turner's look at language, David Earle's examination of ethnohistory, Mary L. Claw's basketry presentation, Del Troy's history of *Tomo Kahni* State Park, and more.

Chapter Seven makes this book a must-have for your rock art library. This comprehensive chapter, "Prehistory and Rock Art," was a collaboration between Albert Knight, Jack Sprague, and Alan Garfinkel.

The chapter begins with a short discussion of the prehistory of traditional Kawaiisu territory, broken into two parts. First, the Southern Sierras and Tehachapi Mountains, where polychrome pictographs reign; second, the western Mojave and southwestern Great Basin, loaded with petroglyphs. Brief descriptions of sites and their tool assemblages are linked with rock art. For instance, at Newberry Cave in the northern Mojave Desert, pictographs, a cache of Elko and Gypsum points, split-twig figures, quartz crystals, painted stones and sheep dung pendants date from 2800 to 3300 B.P. (p. 102).

A look at the rock art begins with a more thorough description of the Kawaiisu territory covered in this book. This is followed by a history of study, starting with the slight mention of the Kawaiisu in Julian H. Steward's 1929 "Petroglyphs of California and Adjoining States" (p. 82; *University of California Publications in American Archaeology and Ethnology* 24:47–238). Contributions to the field by John J. Cawley, Robert Heizer, and C. William Clewlow, Jr., are recognized. Garfinkel's description of Coso Style Paintings, and a brief note of other written resources, add to the depth of material presented.

A description of sites includes familiar names in western Mountain Kawaiisu areas such as Cache Creek, Jawbone Canyon, Nettle Springs, Walker Pass, Sand Canyon, and Creation Cave. Further east, the descriptions of Desert Kawaiisu sites are shorter and include the El Paso Mountains, Coso Range, Death Valley, and Panamint Valley. The authors mention that the chapter is a short rock art survey, "meant to be a simple overview and not an authoritative study" (p. 123).

As noted on page 119, "rock art is one of the most visible aspects of the archaeological record." Part of the beauty of this chapter is the plethora of colored photographs—29 of them, plus another three black-and-whites. Some of them have been enhanced by DStretch, adding a brilliance that helps define faded pigments.

Not to be overlooked are the *Handbook's* "Resource Listing" (Chapter 10) assembled by Garfinkel, Knight, and Troy; and "References & Annotated Bibliography" (Chapter 11). The listing of people, agencies, and institutions is broad, and provides a wealth of data. Adding these chapters to the rich information and excellent illustrations in the "Prehistory and Rock Art" chapter makes the *Handbook of the Kawaiisu* a splendid treasure. ❖

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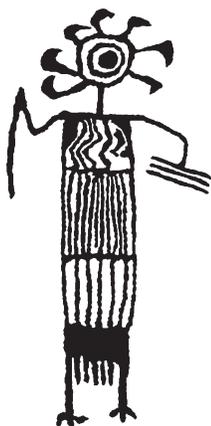
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