E.S.R.A.R.A. NEWSLETTER

Quarterly of the Eastern States Rock Art Research Association

30th member of IFRAO - International Federation of Rock Art Organizations

Volume 15, Number 3 **Summer/Fall 2010**

ESRAC 2011 Call for Papers

ESRARA members, please send your 300 word abstracts to Mark Wagner by March 8th, 2011. Please provide all abstracts in Microsoft Word *.doc format and email to mjwagner@siu.edu.

Alternatively, mail a copy to:

Mark J. Wagner
Center for Archaeological Investigations
3475 Faner Hall
Southern Illinois University
Carbondale, IL 62901-4502

In order to accommodate every presenter, all papers should be kept to maximum 20 minutes in length. All subjects related to rock-art, iconography, petroforms, geoglyphs, and other Indigenous stoneworks (piles, rows etc…) are welcome. Both digital and color 35mm slide projectors will be available in the conference room. Please let Mark Wagner know if you will need any special equipment for your presentation.

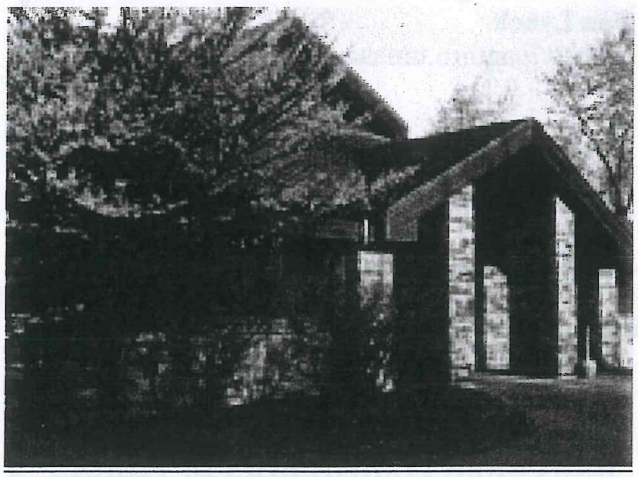
SAVE THE DATE

APRIL 8-10

ESRAC 2011 AT GIANT CITY STATE PARK

MAKANDA, IL 62958

Mark your calendars now! Located just 10 miles south of Carbondale, IL, Historic Giant City State Park will host the 2011 Eastern States Rock Art Conference (ESRAC 2011). Information about lodging, tours, and other information will arrive in a separate mailing in a few weeks. To learn more about this park, continue reading on page 21.



Giant City State Park Visitors Center

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INSIDE THIS ISSUE:

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Please note the status of your dues on the **mailing label** of this newsletter.

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President's Message…

Greetings to All ESRARA Members:

The 2011 ESRAC meetings are going to be held from April 8-10 at Giant City State Park outside of Carbondale, Illinois. This is a very scenic park in southern Illinois with numerous sandstone rock formations, rock shelters, and historic period rock art sites including Civil War and Civilian Conservation Corps (CCC) inscriptions. The park contains a CCC-built lodge built in the 1930s as well as rustic to modern cabins. We have set aside a block of rooms for April 7-10 (Thursday through Sunday) with people arriving on Thursday night and leaving on Sunday. A separate mailing with room prices, schedule, tours, directions, restaurant and hotel addresses, and other information will be sent out to all ESRARA members in the next few weeks.

As those of you who attended the 2002 meetings in Carbondale are aware, the region has a number of petroglyph and pictograph sites within easy driving distance that we can visit. In terms of social activities, a number of new wineries have opened in the Shawnee Hills surrounding Carbondale area over the past 10 years and we are going to try to have at least one meeting event held at one of these new facilities. We also are hoping to Dennis Stroughmatt, who is a nationally recognized fiddler and singer specializing in eighteenth century Mississippi River Valley French Creole music, provide part of the entertainment at our reception. The Southern Illinois Celtic Festival, which features musical entertainment and crafts, also will be taking place in Carbondale on that weekend. So make plans to attend if at all possible, it would be really great if we could have a large turnout for this meeting.

We also have just recently achieved our long-term goal of becoming a tax-exempt non-profit corporation registered in Illinois thanks to the efforts of ESRARA Corporation Affairs Officer Heather Carey who prepared and submitted the required paperwork for us to become a tax exempt 501(c)(3) organization. This is a major step that we had to complete in order to reach another one of ESRARA's long term goals, which is the establishment of a permanent ESRARA archives within the Special Collections Department of the University of Tennessee Knoxville Library. Although the ESRARA archives will be housed at the University of Tennessee Library, ownership of the materials in the archives as well as control of access to sensitive materials such as site locations will reside with ESRARA.

Best Regards,

Mark Wagner
ESRARA President

Meaningful places: Canadian Shield Rock Art in its Cultural Landscape Context

By **Dagmara Zawadzka**
Université du Québec à Montréal

The Canadian Shield, which extends from Québec to Saskatchewan, is dotted with hundreds of red ochre pictograph sites and a few petroglyph sites. Created by Algonquian-speaking peoples (*Anishinaabeg*/Ojibwa, Cree), these sites bear witness to a tradition that seems to extend at least as far as 2,000 years into the past. Rock art sites in the Canadian Shield follow a particular locational patterning as most often they are encountered near lakes and rivers, where the pictographs are painted on vertical cliffs and petroglyphs are incised on horizontal outcrops. Furthermore, certain natural features such as overhangs, quartz veins, white silica/ calcite deposits and cracks and fissures, have been often observed at rock art sites.

Ethnohistoric and ethnographic sources, as well as Indigenous oral traditions have demonstrated that Algonquian-speaking people envision a multilayered universe and perceive the landscape as sacred and filled with manitous which are associated with particular features on the landscape such as mountains, unusual rock formations, trees, lakes and rapids. Rock art sites along with other sacred places, such as effigy rock formations often envisioned as beings turned to stone, form an integral part of this sacred landscape.

Guided by a contextual and a phenomenological approach to landscape and rock art, where landscapes are envisioned as socially constructed by people and where one's experience shapes the understanding of the landscape, I set out to elucidate (1) why Canadian Shield rock art sites are placed in their particular locations and (2) why certain landscape attributes present at rock art sites might have influenced the choice of site location suitable for creation of rock art (Zawadzka 2008).

According to ethnographic evidence, rock art sites were places on the landscape where communication with manitous could take place, either during a vision fast or during a ritual for acquisition of medicine by a medicine man. Rock art sites are associated especially with the other-than-human persons known as *maymaygwayshiwuk*, which were said to sometimes paint the images (e.g. Dewdney and Kidd 1967). Thus, rock art sites are sacred locales that form an integral element of the wider sacred landscape.

The placement of rock art sites reflects spiritual and cosmological beliefs of Algonquian-speaking peoples. Rock art sites are believed to be placed at the junction of the Upperworld, Underworld/Underwater and the Earthly plane (Rajnovich 1994:35). As such, they are liminal places; cosmological maps that act as an *axis mundi* which facilitate communication with the spirits' realm, especially via the cracks and fissures present in the rock substrate. The images' frequent placement on cliffs or rocky outcrops at the edge of a water body also evokes the four primordial elements of fire (sun), water, earth (rock) and air (wind), which would have further heightened the spiritual experience of fasters and medicine men, since for Indigenous peoples,

experiencing all of the Creation during religious ceremonies is essential. Cliffs and mountains are significant for Algonquian-speaking peoples because they can act as cosmic mountains endowed with portals to other worlds in the form of caves and crevices. High mountains are also associated with Thunderbirds (e.g. Chamberlain 1890). Among Algonquian-speaking peoples, water, wind and sun are all considered spirits or manitous (Radin 1914:355) which are honoured.

However, it is not only their wider landscape setting, but also the landscape attributes present at the sites, such as cracks, precipitate deposits, quartz veins and echo-producing grottoes, which were decisive factors in rock art placement. The presence and incorporation of silica or calcite drips and of quartz veins at rock art sites can be explained in terms of Indigenous ideas about certain materials endowed with spiritual powers. According to George Hamell (1983), among North-eastern Woodland Indigenous peoples certain substances which can be characterized as shiny, translucent and light-coloured, such as native copper, shell and crystal, are metaphors for Light, Life and Knowledge. White shiny objects in Algonquian beliefs were endowed with special powers. For example, the white cowrie shell is the sacred symbol of the *Midewiwin* medicine society. Powerful spiritual entities, such as the Thunderbirds and the Underwater spirits were often perceived as white, and the culture hero *Nanabush* was known as the white rabbit (e.g. Jenness 1935:37). Thus white calcite/ silicate deposits might denote sacredness and spiritual powers. The importance of bright and translucent materials and their association with Light and Life can also possibly find expression in the presence of quartz veins.

Auditory qualities at rock art sites, such as the echo effect, and the amplification of sounds that can be achieved with overhangs, also are important. Spirits can manifest their presence audibly in the form of voices or the whistling of the wind (Radin 1914:352-353), thus unusual acoustics at rock art sites might have been interpreted as messages from the Manitous.

Algonquian-speaking peoples attach a great significance to cardinal directions and their beliefs might shed light on the ideology behind the cardinal orientations of rock art sites. Sites in the Canadian Shield seem to face especially from south-east to south-west and very few face north. This orientation bias towards the south-east to south-west exposure can be indicative of the generally positive associations with East and South. However of greater importance is that Algonquian-speaking peoples perform their ceremonies in relation to the sun, thus an orientation towards south-east, for example, would guarantee exposure to the sun. In contrast, north facing locations would receive much less light. The desire to communicate with various Manitous associated with the different cardinal directions might also explain the various orientations of rock art sites (e.g. West is associated with Thunderbirds [Chamberlain 1890:52]).

Finally, rock art sites might have served multiple functions simultaneously and might have expressed ideas of the spiritual and cosmological order, as well as more mundane ones, such as those of a navigation system. Rock art sites encountered within the landscape would, by the virtue of their water location, become a sort of a marker in a navigational system, as they would often mark locations of narrows, portages or falls. However, falls and narrows might be viewed in terms of liminal locations where Underwater and Underworld creatures such as the Great Lynx also known as *Michipeshu* dwell (e.g. Rogers 1962:D24, D42). Thus, rock art sites emerge as bearers of a complex set of information regarding spiritual, cosmological and secular ideas, and they can only be understood within their cultural landscape setting.

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Recent Damage Found at Mark Rock, Warwick, Rhode Island

by **Dan Lynch**
UMASS Amherst

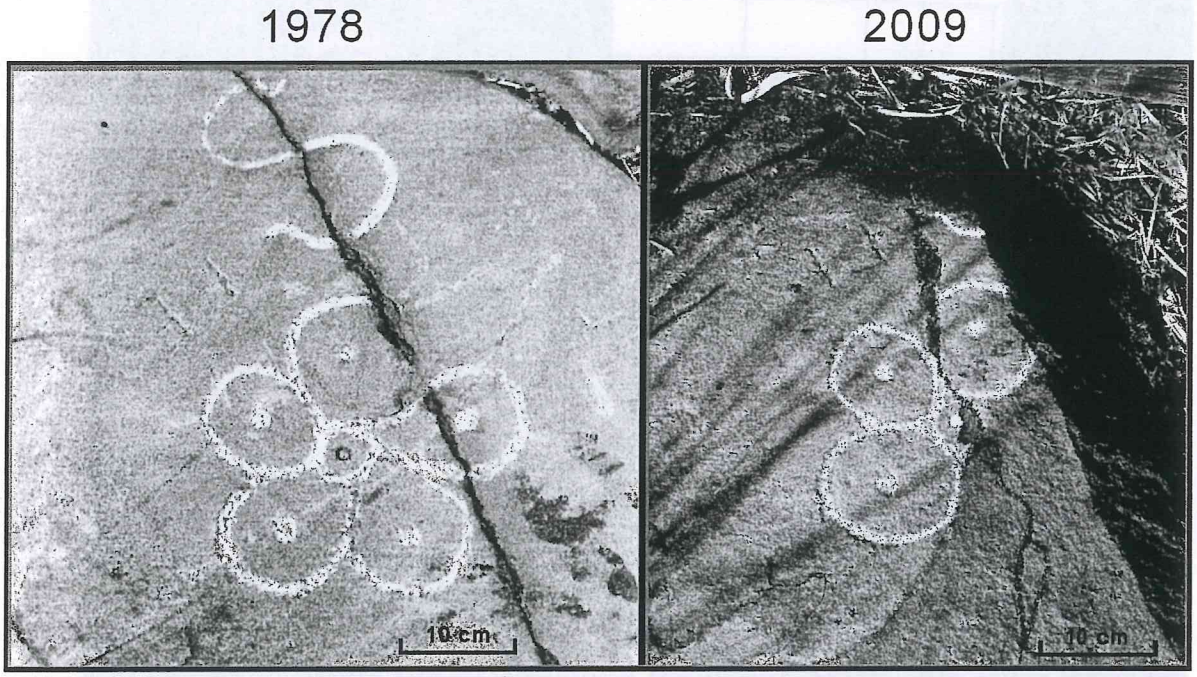

Figure 1. Petroglyph "k" at the Mark Rock Site. The left image is from 1978 and shows a crack in the ledge and a s-shaped scroll (courtesy of Ed Lenik), The right photo (2009) is digitally "chalked" and shows significant damage to both petroglyph "k" and the s-shaped scroll.

The Mark Rock petroglyph site is located on exposed ledge along the western shore of Narragansett Bay in Warwick, Rhode Island. Similar to other sites in this region, much of the Mark Rock site is located within the inter-tidal zone and covered with water at high tide. The Mark Rock area was a popular resort during the 19th century and hundreds of visitors carved their initials and signatures onto these ledges. During the early 20th century, Edmund Burke Delabarre was the first researcher to recognize Indigenous petroglyphs at the site (Delabarre 1928).

Most of the Mark Rock ledge is currently inaccessible due to being covered over with beach sand and/or salt marsh. Luckily, Delabarre (1928: 237-254) published a series of maps and photographs that are invaluable when visiting the site today. During a recent visitation, I was able to locate two of the petroglyphs that Delabarre designated "j" and "k" (Figure 1). I recorded the highest point on petroglyph "j" with a Trimble total station and found it located at an elevation of 32 cm below mean high tide. The lower half of petroglyph "j" is covered with sandy sediments. Although I did not uncover the lower portion of "j", the exposed portions look well preserved when compared to the Delabarre photograph (Delabarre 1928: Figure 85).

Unfortunately, petroglyph "k" is located in the middle of a shore access path (Figure 2). It has suffered significant damage in recent years and there is a well worn path that treads directly on top of glyph "k". Delabarre noted that this petroglyph is above the high tide mark at a higher in elevation than the other glyphs at the site. I recorded the location of "k" with the total station at an elevation of 88 cm above mean high tide.

Figure 2. View looking away from ocean and up the shore access path leading directly over Petroglyph "k". A massive timber, probably part of the flotsam and jetsam found at the site can be seen adjacent to "k".

The petroglyph resembles the strawberry or mayflower/hawthorn five-petal rosettes found on eastern Native American beadwork in the 18th and 19th centuries. Delabarre observed that petroglyph k "looks fresh and is lighter in color than the rock surface. This may be because it is so high up on the ledge that it is never submerged. Still the oldest of the dated names are also of a much lighter gray than the surrounding rock, and these are covered at high tide; so that I judge that k, as well as these, may be relatively modern (Delabarre 1928:243)." Giving the similar style to know Native American designs, the high elevation on the rock ledge, and recent appearance of the pecking, it is likely that "k" is the work of post-contact Native Americans. However, if the shore access path is not relocated soon, this glyph will be totally destroyed within a few years.

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"Portable" Non-Portable Mortars: Benningsen Boon's "Wash Basin"

by **Mark J. Wagner, Heather Carey, and Mary R. McCorvie**

Introduction

Non-portable bedrock mortars or "hominy holes", which consist of small to large holes ground into the bedrock assumed to have been associated with food-processing activities, are widely distributed across the southeastern United States (Coy et al. 1997). Such sites also occur in Illinois but with a few exceptions (Schwegman 2003:163-175; Wagner and Carey 2010) are not discussed in the archaeological literature. We (Wagner, Carey, and McCorvie) are currently engaged in documenting these sites in southern Illinois and presented our initial results at the 2010 Southeastern Archaeological Conference (SEAC) meetings in Lexington, Kentucky.

Although bedrock mortar hole sites by definition are a fixed part of the landscape, one that has been moved from its original location is now contained in the Southern Illinois University Carbondale (SIUC) Museum sculpture garden located behind the museum (Figures 1-3). Known variously as "Governor Duncan's" or "Benningsen Boone's Wash Basin" this mortar consists of a large free-standing sandstone joint block with two holes (one large and one small) on top and a series of abrading scars on one side (Figures 2 and 3). This mortar, whose Native American origins have been forgotten, has become part of southern Illinois folklore with the two holes popularly believed to have been used by two early settlers (Joseph Duncan and Benningsen Boon) to hold the soap and water that they used to wash their face and hands. SIU Historical Museum Director John Allen provided the first known written account of this story in 1945:

> A spring, under the east side of the bluff a mile or south of the Boon cemetery, marks the place where Benningsen Boon's home stood. The cubical block of sandstone that stands near the southeast corner of the main building of the S. I. N. U. [Southern Illinois Normal University] once stood beside this spring. It was used by Boon as a wash basin and soap dish. The larger excavation served as the wash basin, and the smaller one held the soft soap, then almost universally used (Allen 1945:3).

Similar to many other rock art and mortar hole sites in southern Illinois, although the "Wash Basin" has been known for generations it has never been described in detail. In this paper we describe the physical appearance of the Duncan/Boon mortar, review its history, and examine its relationship to the other bedrock mortar holes of the region.

Physical Description

The Duncan/Boon mortar consists of a cubic-shaped sandstone joint block that measures approximately 80 cm long by 45 cm wide by 50 cm high (Figure 1). Weight is estimated at approximately 306 kg (675 lbs). Human modifications to the block consist of mortar holes (top), abrading scars (side), and miscellaneous pecked areas (upper side).

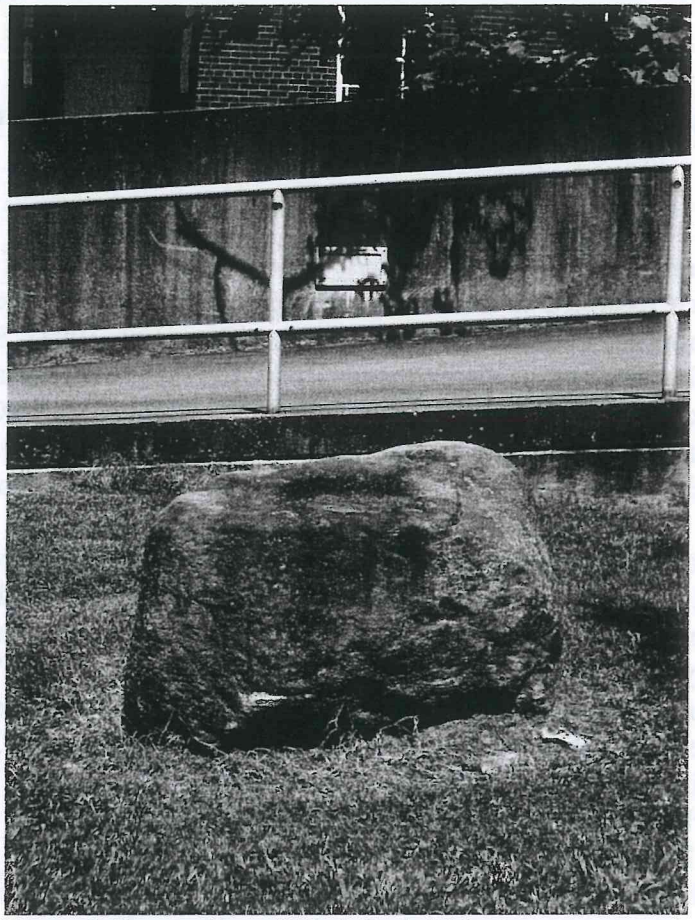

Figure 1. Duncan/Boon "Wash Basin" Mortar

The two mortar holes are located adjacent to each other on the top of the block (Figure 2). The larger of these measures 24 cm in diameter by 8 cm deep while the smaller measures 8 cm in diameter by 4 cm deep. Volume was estimated by filling the two holes with water. This revealed that the larger hole had a volume (1.0 liters) 20 times that of the smaller hole (0.05 liters). Such a large variance suggests that a functional difference might have existed between the two holes, which may have formed part of a single plant food processing kit. One possibility is that hard-shelled plant foods such as hickory nuts may have been broken apart by battering in the smaller hole, after which the nut meats were removed and ground or mixed with other food stuffs in the larger hole.

The abrading scars consist of four v-shaped ground incisions located near the base of one side of the block (Figure 3). These grooves, which cover a 28 cm long by 21 cm high area of the block, range in length from 10 to 28 cm with a mean length of 15.5 cm. Depth ranges from 1.0 to 1.5 cm. Similar grooves interpreted as having been associated with prehistoric tool sharpening or grinding activities have been documented on the walls of a number of prehistoric rock shelters within southern Illinois (Butler 1970; Wagner et al 1990, 2007). A single small circular pecked area measuring 3 cm in diameter by 1.5 cm deep is located above and to the left of the abrading grooves.

History

The mortar is believed to originally have been located on the farm of Joseph Duncan in western Jackson County, Illinois. Duncan (Figure 4) was a prominent Illinois politician who served as Major General of Militia (1822), state senator from Jackson County (1824-1826), and in the U.S. Congress (1826-1834) before becoming Governor of Illinois (1834-1838). In 1815 and 1818 Duncan purchased two tracts of land totaling 185 acres in Section 36, T9N, R4W. These two Mississippi River floodplain tracts, where he eventually constructed a home, were located immediately north of Fountain Bluff, a prominent isolated ridge remnant located adjacent to the Mississippi River in western Jackson County.

Figure 2. Duncan/Boon Mortar (Top View)

Fountain Bluff contains numerous prehistoric archaeological sites spanning (at least) the Middle Woodland to Mississippian periods including two of the most well-known prehistoric rock art sites—the Fountain Bluff (11J41) and Whetstone Shelter (11J17)—in Illinois. These two sites contain numerous Mississippian period pictographs and petroglyphs including examples of the bi-lobed arrow, ceremonial mace, cross-in-circle, and other designs (Butler 1977; Pulcher 1973; Wagner et al. 1990; Wagner 1996; Wagner and Carey 2010; Wagner, McCorvie and Carey 2007). In addition, the Fountain Bluff site, which is located beneath a massive rock overhang at the northwest end of Fountain Bluff, is located approximately 300 m east of the eastern edge of

the floodplain tract purchased by Governor Duncan in 1818. As such, the mortar now located on the SIUC campus originally may have been found by Duncan within this shelter and taken by him to his home a short distance away.

Duncan left the southern part of the state for central Illinois by the early 1820s to run for the United States Congress. He reportedly sold his farm to William Boon, a reputed relative of Daniel Boone, who established a wood yard along the Mississippi River (Allen 1950a; Boon 1983:1; Wright 1983:25). Similar to Duncan, Boon was a locally prominent individual who served as a state senator (1820-1824) as well as commanding the Illinois Rangers in Jackson County during the War of 1812. Upon William Boon's death in 1833 his property passed to his son Benningsen Boone, a local physician who also held a number of county offices throughout his life (Allen 1945:18; Hawes 1859; Wright 1983:23, 52).

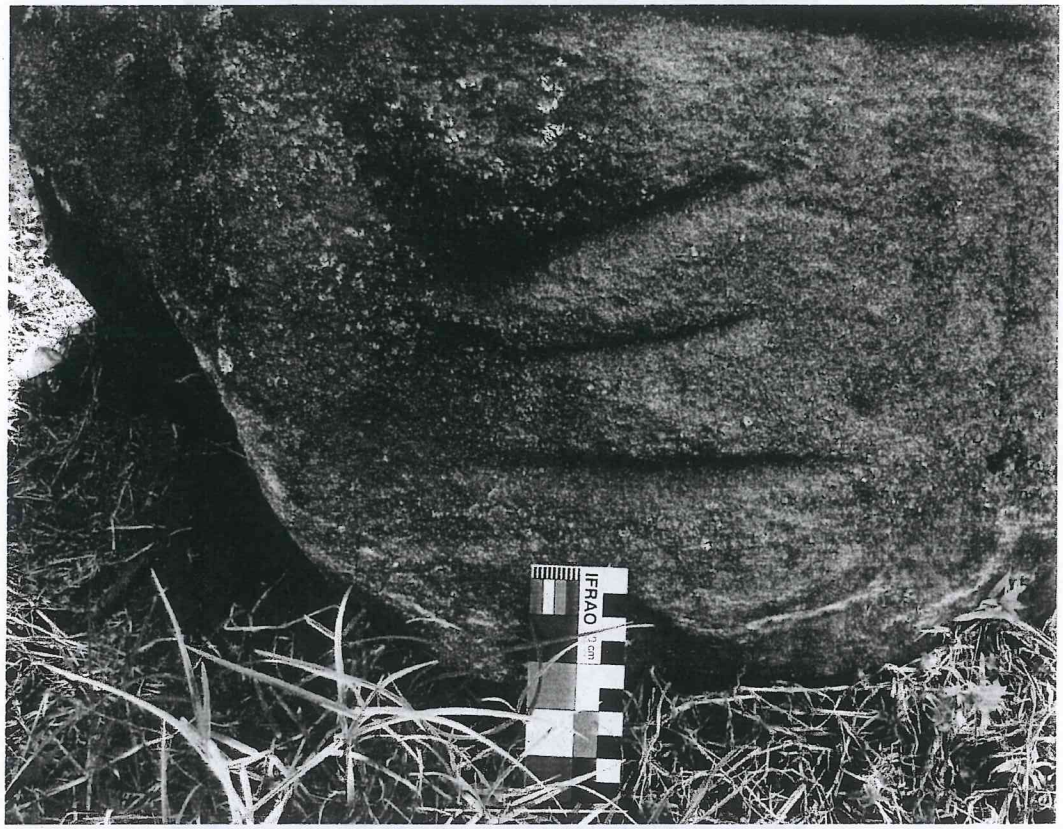

Figure 3. Abrading Scars on Side of Mortar

Benningsen Boon supposedly transported the mortar to his farm on the southeast side of Fountain Bluff following the death of his father in 1833 (Allen 1950a). Boon reportedly placed it near a spring where he collected water to fill the larger hole while placing his bar of lye soap in the smaller hole (Allen 1954a-b: 2). At some point in the late 1800s Benningsen Boon, who died in 1881, moved to Carbondale and his home at Fountain Bluff fell into disrepair. Someone then arranged for the mortar transported by wagon to the SIU (then SINU) campus in Carbondale, but whether this occurred prior to or after Boon's death is unclear (Allen 1950a-b, 1954 a-b).

Although the person who arranged to have the mortar taken to the SINU campus is unknown, the most likely candidate is SINU botany professor George Hazen French who had a strong interest in the archaeology of southern Illinois (Figure 5). French authored two short reports entitled "Antiquities of Jackson County, Illinois" and "A Stone Fort Near Makanda, Illinois" that appeared in the *Annual Report of the Board of Regents of the Smithsonian Institution for 1881* (French 1883a-b). French also worked under Cyrus Thomas, who later conducted the first systematic investigation of the prehistoric burial mounds of the eastern United States, who was then in charge of the museum at SINU. The year (1881) that French conducted this research is the same year that Benningsen Boon died, suggesting that French may have arranged to have the mortar transported from either Boon's home in Carbondale or his former home at Fountain Bluff following Boon's death in 1881. Unfortunately, no mention of the mortar occurs in French's report on the archaeology of Jackson County, which primarily consists of burial mound information (French 1883a).

Figure 4. Illinois Governor Joseph Duncan

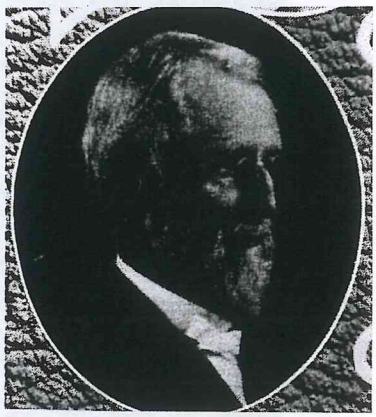

Figure 5. Professor George Hazen Smith, SINU

French (or possibly even Cyrus Thomas) arranged to have the mortar placed adjacent to the southeast corner of "Old Main", the oldest building on campus, which was the home of the SINU Museum at that time. The earliest known reference to the mortar—and the story that it was used by Governor Duncan to wash his face and hands—occurs in a May, 1908, letter from French to the university president in which he referred to it as "the Governor's wash basin" (Allen 1954b:3).

By the 1940s, however, this story had been forgotten and the mortar had instead become known as "Benningsen Boon's wash basin" (Allen 1945:3). John Allen, who was the Historical Director of the SIU Museum, appears to have been the first person to link the basin with Boon

instead of Duncan (Allen 1945:3). By the 1950s, however, Allen had learned of the connection of the mortar with Governor Duncan, and began interpreting it as a "washstand" used by both men rather than by Boon alone (Allen 1954a-b).

Allen—who had been born in southern Illinois and written extensively on the folklore and history of the region (Allen 1963, 1968)—believed the story that the mortar had been made as a "washstand" by the early American settlers of Jackson County rather than prehistoric Native Americans. Although he noted the similarity of the two ground depressions in the top of the joint block to those "shaped by Indians grinding corn" on prehistoric mortars, he interpreted them as early nineteenth century Euro-American creations that bespoke "the ingenuity and perhaps the ruggedness of the pioneer" (Allen 1954a:3). Allen supported this interpretation by claiming that close inspection of the two holes revealed, "distinct chisel marks in each depression [that indicate] that they were not made by Indians grinding corn" (Allen 1950b). Instead, the presence of these "sharp markings, evidently made by a metal chisel, [indicate] that the depressions are the work of a 'modern' man" rather than prehistoric Native Americans (Allen 1954a:1). Allen, who was a folklorist rather than an archaeologist, appears to have been unfamiliar with the appearance of metal tool marks on stone. In reality, inspection of the sides and bottoms of both depressions as part of the current study revealed these are ground similar to prehistoric mortars and no metal tool markings are evident (Figure 6).

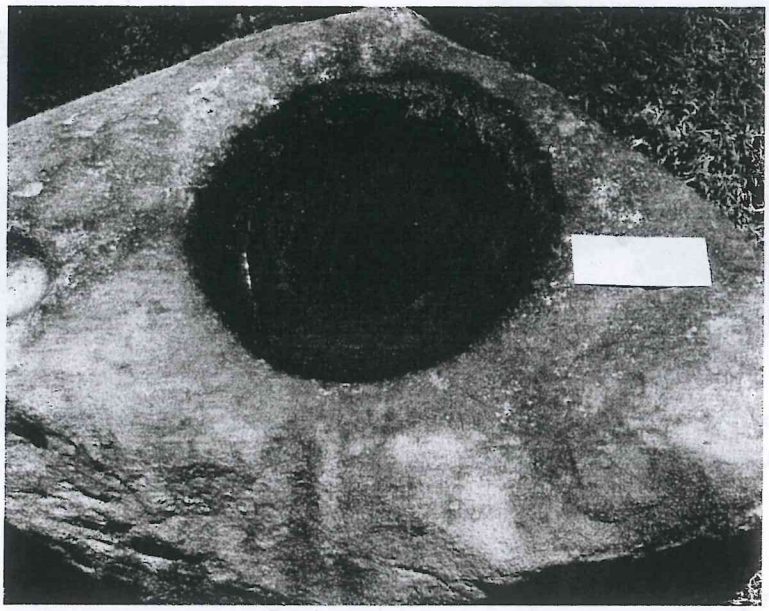

Figure 6. Ground Mortar Hole, Duncan/Boon Mortar

The mortar remained adjacent to Old Main, which housed the SIU Museum at that time, until the destruction of this building by fire in 1968. Following this incident, the mortar apparently was moved to its present-day location in the sculpture garden behind Faner Hall, which houses the current SIU Museum.

Discussion

The "wash basin" is clearly a prehistoric mortar that originally was located at Fountain Bluff, possibly at the Fountain Bluff rock art site and rock shelter (11J41) itself, in western

Jackson County. The estimated weight (306 kg; 675 lbs) of the mortar clearly indicates that it was intended to be nonportable. Thousands of sandstone blocks of varying size litter the base and lower slopes of Fountain Bluff and there is no reason to believe that the mortar was transported to the area from elsewhere.

The Duncan/Boon mortar is not unique within the region except for its creation on a freestanding joint block. Seven other bedrock mortar sites have been recorded within an 25 mi (40.2 km) distance of the presumed original location (the Fountain Bluff site) of the mortar including at the Whetstone Shelter (11J17) on the west side of Fountain Bluff. These mortars range in size from small diameter narrow "hominy holes" (N=6) similar to the smaller hole on the Duncan/Boon mortar to larger pits (N=1) comparable to the large depression on this same joint block.

The age of the mortar is unknown. Bedrock mortars are typically interpreted as Archaic period (ca. 8,000-1,000 B.C.) creations throughout the Southeast (Coy et al. 1997) and it may be that the Illinois examples date to the same period. Prehistoric rock art that could provide information on the age of the mortars is associated with five of the Illinois mortar sites. In three cases—Fountain Bluff (11J41), Evans Farm Track Rock (11Js9), and Whetstone Shelter (11J17)—at least some of the rock art dates to the Mississippian period. Test investigations at the Whetstone Shelter (11J17), however, indicated that intact Archaic-period deposits might be present at that site beneath the looted Late Woodland and Mississippian strata (Wagner et al. 2007). In addition, a 1950s investigation of the Fountain Bluff shelter indicated that the site contained Late Woodland, Mississippian, and other prehistoric deposits extending at least 6.5 ft (1.98 m) beneath the surface (Peithmann 1955:11-13). Given the depth of the excavations, some Archaic period artifacts also almost certainly must have been contained within the poorly described artifact assemblage recovered by this work. In sum, the archaeological data are inclusive regarding the age of bedrock mortars in Illinois. Similar to other researchers, however, we suspect that they most likely date to the Archaic period.

Did Duncan or Boon ever use this prehistoric mortar as a wash basin? On the face of it, this appears unlikely given the short height (20 inches) of the joint block. Unless they were very short men, or had placed the mortar upon some type of earthen rise or stone block that increased its height, it seems likely that both Duncan and Boon would have found it difficult to use this mortar as a wash basin without bending over a considerable distance. At the same time Boon clearly had an attachment to this mortar, moving it—probably with a great deal of effort—from its original location at the north side of Fountain Bluff to his later homestead on the eastern side of the bluff and, finally, possibly to Carbondale when he moved there near the end of his life. Whatever his reasons, Boon apparently cared enough for this mortar that had formed part of his life since the at least the 1820s that he kept it in his possession for over 50 years. Whether the "wash basin" story is true or not, the Duncan/Boon mortar has come to form part of the folklore of southern Illinois and this association has helped preserve it from destruction for over a century now and probably will continue to do so into the foreseeable future.

Acknowledgements

We would like to thank Dr. Dona Bachmann, SIU Museum Director, for providing us with information regarding the Duncan/Boon mortar contained in the SIU Museum files. We also

would like to thank the staff of the Special Collections Research Center, Morris Library, SIUC, for allowing us to examine the John Allen collection, which contains two articles by Allen on the Duncan/Boon mortar.

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NCPTT Funds 3D Rock-Art Recording Technology

By **National Center for Preservation Technology and Training (NCPTT), Press Release**

(c-h-i.org) developed a comprehensive training program for 3D digital rock art documentation and preservation, based on state-of-the-art computational photography techniques that are emerging as the next generation of cultural heritage tools for use both in the field and in museums.

Over the past several years, an international consortium of archaeologists, museum conservators and computer scientists have worked to develop a suite of capture, processing and semantic provenance tracking technologies. The most mature tool in this suite, Reflectance Transformation Imaging (RTI), has proven to be of tremendous value for creating digital surrogates of cultural heritage objects of remarkable quality. Used alone or in combination with stereo photogrammetry, RTI is extremely effective in the documentation and analysis of rock art.

This project brought key experts in these field domains together to produce a self-contained program that puts these techniques in the hands of archaeology and conservation professionals, non-technical Native American audiences, and the interested public.

This project developed a comprehensive program in onsite and online training of cost-effective, easy-to-use tools to digitally capture empirical data from rock art and petroglyph sites nationally. This raw data is designed to yield 'born-archival,' 3-dimensional (3D), digital representations that disclose, through transparent and precise mathematical enhancement, features unseen for thousands of years, **without the need of specialists or specialized equipment**.

http://www.ncptt.nps.gov/3d-digital-rock-art-documentation-and-preservation-workshop-2009-05/

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RTi: Guide To Highlight Image Capture: Describes the camera, lighting, software, object and reflective sphere setup and capture sequence process.

RTi: Highlight Capture Check List: Provides a checklist for setting up and capturing reflectance transformation images.

Rti Video: Performing Highlight Image Capture: This video covers how to capture reflectance transformation images using the highlight method.

Anybody Can Do Reflectance Transformation Imaging!

International Federation of Rock Art Organisations

Introducing the IFRAO Standard Scale

Preamble

The IFRAO (International Federation of Rock Art Organisations) Standard Scale was first proposed in *IFRAO Report No. 6* (Bednarik 1991). Consultation of researchers and various specialists in the following years has led to progressive evolution of the design (cf. *Rock Art Research* 8: 156) until it was finalised in 1993.

Purpose of the Scale

There are many millions of photographs and colour transparencies of rock art in existence worldwide. Many archives have in the order of hundreds of thousands of images, while thousands of individual researchers each possess collections of many thousands of colour slides or photographs. We also know that this enormous collective record is irreplaceable, and yet it is doomed to eventual destruction. No known photographic dye is fade-proof, and we still lack any form of fully perdurable photographic or digitised storage of imagery (Dickman 1984). In short, this enormous effort of creating a visual record of world rock art is ultimately in vain. Even with rapid rock art deterioration it will be survived by most rock art — fortunately. But there is a simple way of rendering this massive record permanently useful: digitised colour reconstitution or reconstruction.

In scientific photography it is essential to know the size of an image, and for this purpose, Taylor et al. (1979) designed a simple ten-centimetre scale for rock art recording. A scale has other roles too. It serves as a general indication of a photograph's sharpness, by showing how well it was focused and processed. Manual focusing is often difficult with rock art, because of the typical lack of straight or well-defined lines, and the operation of a camera with viewfinder focusing is much easier by selecting one of the lines on a scale.

More important than the black and white scale markings are the colour chips. The colour properties of an object are always distorted in a photograph, by such factors as optics, film type, paper type, temperature and, most particularly, lighting conditions. Therefore a colour photograph cannot be expected to be a true record of chroma, value and hue. However, by checking the colour distortion on a scale photographed with the rock art we can obtain an indication of its severity. Some rock art researchers (a very tiny minority) have been using a variety of colour scales, including the Munsell Soil Colour Chart, the Kodak Colour Separation Guide, the Letraset Pantone colour chart and a variety of others. These colour standard charts are all expensive, they are all different, and standardisation would obviously be desirable.

The main reason for needing a standard photographic scale, however, is its function as a COLOUR CALIBRATION DEVICE for a variety of computer-supported uses. Electronic colour enhancement methods have been used in rock art studies for many years (Rip 1983). In 1994, electronic colour reconstitution of rock art images was first achieved at the National Museum of Man in Bhopal, India, calibrated with the IFRAO Standard Scale as the profile device (Bednarik and Seshadri 1995). This has led to the development of colour-reconstitution software at the Museum.

The original colour values of colour-distorted and even faded rock art photographs can now be automatically reconstituted almost in an instant. The only precondition is that the photograph must bear a colour standard against which the computer can calibrate. The greatest advantage is that the computer does not recover the colour properties of the original photograph, before it faded, but goes beyond that — all the way back to the true colour of the rock art image at the moment it was photographed. It reconstitutes the actual colour properties of the subject at the time, even if this was several decades earlier. Colour reconstitution thus compensates for photographic distortion as well as for the subsequent fading of dyes.

This technology opens enormous possibilities in research, recording, documentation storage, computerised image manipulation, publishing and conservation studies. For instance, such techniques can facilitate mathematically precise monitoring of deterioration of rock art pigment or patinae over any period of time (Pager 1992; Ward and Maggs 1994). They permit the recovery of objective colour information, free of the 'technical subjectivity' of conventional photography. They facilitate the digitisation of real colour information, which can then be used in many ways: it can be permanently stored, it

can be used as the basis of enhancement procedures (Rip 1989), or it can be cross-checked in intra- and inter-site studies for various purposes by engaging computer search functions. Such information can also be used in conservation, retouch, graffiti and lacunae repair, comparative pigment studies, sourcing studies, dating work, recovery of very faint images, printing of colour plates and so forth. It provides a reliable and standardised base for numerous applications, and while some of the technologies required may still have to be developed, it is most reasonable to expect that they will be available within a few years. **All that is required at this stage is that every photograph taken of rock art for scientific purposes must hear the same colour calibration standard scale.**

The long-term effect of the use of the IFRAO Standard Scale will be a standardisation of the photographic record of world rock art. Our archival record will become a permanent record by virtue of its digital retrievability. The greatest fear of all rock art students, that the art will deteriorate beyond archival recovery, can be met by the knowledge that the susceptibility of our photographic record to colour calibration will lead to an 'ultimate conservation method'. We will have the means of preserving rock art in pristine condition forever, at least in our archives.

Use of the IFRAO Standard Scale

The IFRAO Standard Scale bears the printing date and will be periodically reprinted to guard against it fading. It should be stored in a dark, dry and cool place when not in use. It includes a grey scale for comparing tone values. The patches correspond with reflection densities of 0.0, 0.70 and 1.60 respectively.

The Scale must never be placed over rock art, or very close to a motif. Preferably it should not be attached to the rock face. In vertical or overhead locations, the Scale should be hand held. A very useful technique is to attach the Scale to a car radio antenna that can ten be extended in the field. Only where definitely undecorated and structurally sound rock surface is available may the use of small double-sided adhesive pads be considered, or the insertion of small metal pins through the Scale to affix it to soft rock surfaces (e.g. in limestone caves); but this is to be avoided whenever possible.

The Scale should be positioned parallel to the predominant plane of the rock art motif and the same distance from the camera lens. Ensure that the Scale does not directly reflect the lighting source, be it the sun or artificial lighting. One Scale should be used for distances of up to 1.5 m. Between 1.5 and 4.5 m, two Scales are required. The Scale cannot be used with precision at distances exceeding 4.5 m, using lenses of standard focal length. Best results will be achieved at distances of under 1 m. Where artificial lighting is required, place the Scale on the upper left corner and light the image from the same direction. However, natural lighting is preferred to artificial. The small scale on the left-hand end of the IFRAO Scale is intended for close-up photographs. For best digital results, slides or negatives are preferred to prints, but digital cameras obviously are the best choice.

The IFRAO Standard Scale is distributed free to all rock art researchers of the world (the members of the forty IFRAO-affiliated organisations). In addition, specialists in numerous other fields are rapidly adopting it. Specimens of the Scale are available from the IFRAO Convener's office (P.O. Box 216, Caulfield South, Vic. 3162, Australia). The sale of the IFRAO Scale for profit is not permitted.

Acknowledgments

I express my gratitude to the sponsor who underwrote the production costs of the IFRAO Standard Scale, the Australian Institute of Aboriginal and Torres Strait Islander Studies, Canberra, Australia. I also thank the Australia-India Council, Canberra, for supporting the work at the National Museum of Man in India in 1994.

ROBERT G. BEDNARIK
IFRAO Convener

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ESRAC 2011 Location, Giant City State Park Near Carbondale, Illinois

With its breathtaking natural beauty and unlimited opportunities for outdoor recreation, a trip to Giant City State Park near Carbondale is sure to delight visitors of all ages. From camping and horseback riding to fishing and rappelling, it's an outdoor lover's paradise. Visitors will marvel at the many wilderness trails, and a sure treat awaits anyone hiking the Giant City Nature Trail, home of the "Giant City Streets" formed 12,000 years ago by huge bluffs of sandstone. Nestled in the Shawnee National Forest, just minutes south of Carbondale, the area was named for the unique impressions made by its massive sandstone structures. Eons of geological faulting and folding have molded a landscape like none other, which is now clothed in lush garments of fern, moss, large flowering mints, hundreds of species of wild flowers and 75-plus varieties of towering trees. The natural splendor of Giant City has made it a renowned retreat that attracts more than 1.2 million visitors annually.

History. Shelter bluffs, or rock shelters, worn into the sides of the cliffs have revealed evidence of human habitation in this region from as early as 10,000 years ago, and the blackened ceilings caused by their fires are still visible today. On an 80-foot sandstone cliff near the main entrance, one can see the remains of a Native American stone wall that was erected between A.D. 600-800.

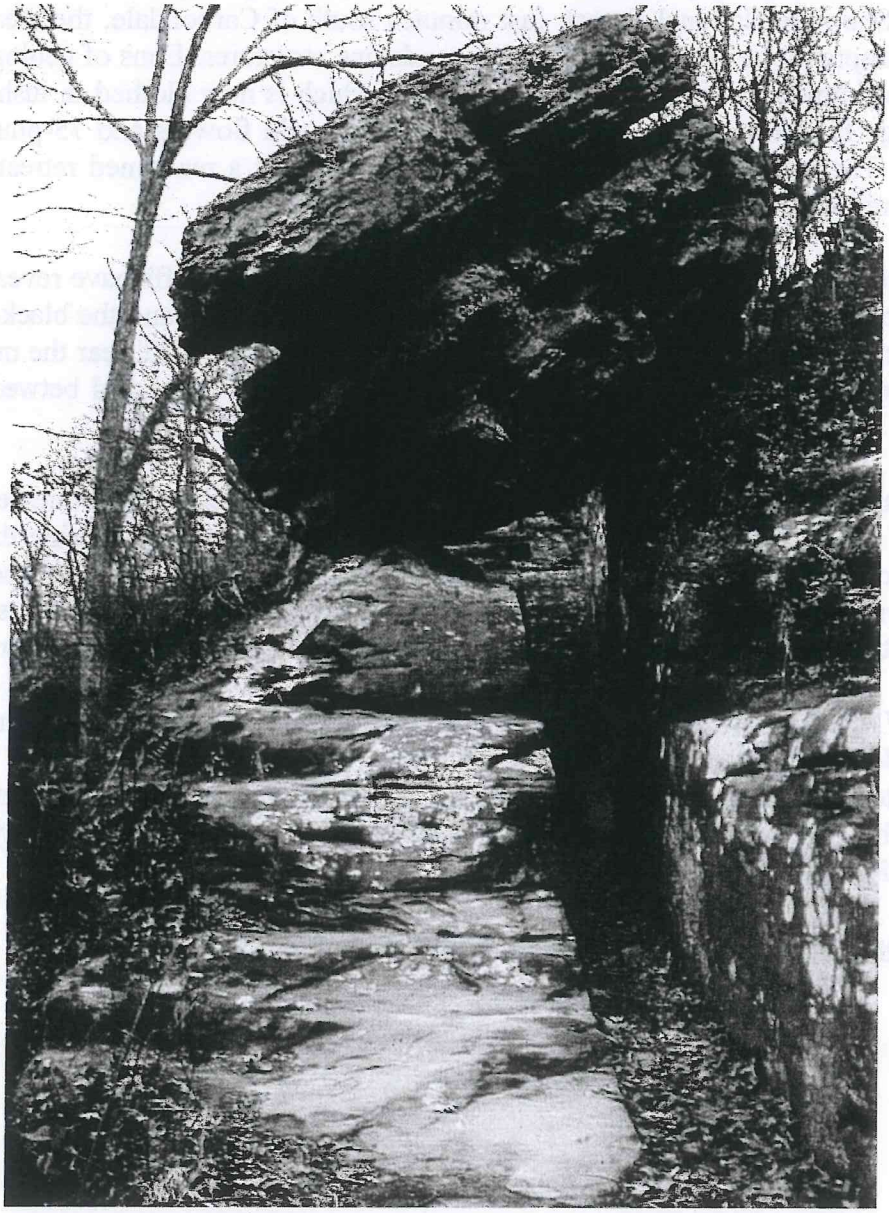
The first European settlers moved into the area from Kentucky and Tennessee in the early 1800s, and by 1850, settlers were using the land to cultivate fruit trees. During the Civil War, many of the cliffs and canyons were used as havens by soldiers of both the Union and Confederate armies. By the early 1900s, many biologists, geologists and visitors had become intrigued with the region for study and relaxation. It provided ample opportunity for both.

In 1927, the State of Illinois acquired more than 1,100 acres of land in Union and Jackson counties and dedicated the area as Giant City State Park. In 1936, the Civilian Conservation Corps completed construction of a lodge and 12 overnight cabins on the highest point in the park. Today, the park has grown to encompass 4,000 acres of spectacular countryside and the 110-acre Fern Rocks Nature Preserve.

For more information: http://dnr.state.il.us/lands/landmgt/parks/r5/gc.htm#local

Local Attractions

- Southern Ilinois Wine Trail
- Midland Hills Golf Course in Makanda
- Stone Creek Golf Course in Makanda
- Root Beer Saloon (a unique restaurant) in Alto Pass
- Fishing Lakes - Crab Orchard, Devil's Kitchen, Little Grassy, and Cedar Lake. Crab Orchard, Devil's Kitchen, and Little Grassy Lakes are owed by Crab Orchard Wildlife Refuge - vehicle and boat stickers required by COWR.
- Bald Knob Cross in Alto Pass - 110 foot high cross.



Balance Rock at Giant City State Park

Giant City State Park/CCC statue at Lodge

Giant City State Park/Tower

MEMBERSHIP DUES UPDATE REMINDER

ESRARA membership dues have recently been restructured in order to offer a new **LIFE MEMBERSHIP** category. This action was proposed and approved during the Board meeting at ESRAC 2009, Red Top Mountain, GA. The updated annual dues schedule is as follows:

Regular Membership	**$15**
Joint / Family Membership	**$20**
Life Membership	**$250**

Member dues are an integral part of fulfilling the mission of ESRARA. Your contributions are used to sponsor publications, conferences, educational and conservation projects.

Please note the status of your dues on the **mailing label** of this newsletter.

Dues payments can be mailed to:
Michelle Berg-Vogel, Treasurer
PO Box 61
Kampsville, IL 62053

Or payments may be submitted via Paypal at:
www.esrara.org
Thank you!

ESRARA is a tax exempt 501(c)(3) organization

Retroactive to Nov. 20, 2009 all contributions received by ESRARA are now tax deductible. This means that all contributions received by ESRARA from that date forward are tax deductible.

Special Thanks to ESRARA Corporation Affairs Officer Heather Carey For Getting This Done

Attendees of the first Eastern States Rock Art Conference (ESRAC), Natural Bridge State Park, Kentucky, April 8-10, 1993

Upper Row Left to Right
1. Charlie Faulkner
2. Valerie Haskins
3. Iloilo M. Jones
4. David C. Lowe
5. Charles Hockensmith
6. Carol Diaz-Granados
7. Frank Magre
8. B. Bart Henson
9. Daniel B. Davis
10. Nicholas Honerkanp
11. Fred Coy
12. B. K. Swartz
13. Diane Hamann
14. Mark Wagner

Lower Row Left to right
1. Mark Hedden
2. William Jack Hranicky
3. Edward Lenik
4. Richard Mooney

Do You Have Something New To Share?

Please Send **ARTICLES, BOOK REVIEWS, UPDATES** and **NEWS ITEMS** for the Winter Newsletter to:

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