Palaeontologia Electronica
http://palaeo-electronica.org

"Dinosaur" petroglyphs at Kachina Bridge site, Natural Bridges National Monument, southeastern Utah: not dinosaurs after all

Phil Senter and Sally J. Cole

ABSTRACT

Among the many images made by prehistoric people on the walls of Kachina Bridge is what appears to be an unambiguous depiction of a sauropod dinosaur, herein called Dinosaur 1. Because mainstream science has produced no alternate explanation for Dinosaur 1, it has become an important weapon in the arsenal of the anti-evolution movement. The movement's proponents claim that it demonstrates the coexistence of humans and dinosaurs, thus casting doubt on the geological time scale of millions of years. Until now that claim has gone unchallenged. The hypothesis that a given petroglyph depicts a dinosaur predicts that the image is not a composite; depicts an animal; has features that cannot be reconciled with non-dinosaurian local fauna; has features of a specific, identifiable dinosaur; and is entirely human-made. These predictions were tested for Dinosaur 1 and three other alleged dinosaur petroglyphs at Kachina Bridge by on-site visual examination under varying light conditions. Examination reveals that the "neck" and "back" of Dinosaur 1 are a composite of two separate petroglyphs, and its "legs" are a natural mud or mineral stain. A second alleged sauropod petroglyph is a mere mud stain. The other two alleged dinosaur petroglyphs are human-made, but neither depicts an animal. The four Kachina Bridge "dinosaurs" are illusions produced by pareidolia. None of them satisfy the predictions of the hypothesis that a dinosaur is depicted. Dinosaur 1–heretofore a creationist poster child—and its counterparts now join the plethora of discredited "evidence" for the ancient coexistence of humans and dinosaurs.

Phil Senter. Department of Natural Sciences, Fayetteville State University, 1200 Murchison Road, Fayetteville, North Carolina 28301, USA psenter@uncfsu.edu
Sally Cole, archaeological consultant and author, Dolores, Colorado, USA (can be contacted via Phil Senter).

KEY WORDS: petroglyph; Kachina Bridge; Sauropoda; creationism; young-earth creationism; pareidolia

PE Article Number: 14.1.2A

Submission: 15 March 2010. Acceptance: 30 September 2010

Senter, Phil and Cole, Sally J., 2011. "Dinosaur" petroglyphs at Kachina Bridge site, Natural Bridges National Monument, southeastern Utah: not dinosaurs after all. *Palaeontologia Electronica* Vol. 14, Issue 1; 2A:5p;
http://palaeo-electronica.org/2011_1/236/index.html

INTRODUCTION

The findings of mainstream geology have firmly established that non-avian dinosaurs became extinct 65 million years ago when the Mesozoic Era gave way to the Cenozoic Era, and that *Homo sapiens* appeared less than one million years ago. Young-earth creationists, on the other hand, insist that humans, dinosaurs, and all other terrestrial animals were created on the same day about 6000 years ago (e.g., papers in Ham 2006 2008). They have therefore long sought evidence for the coexistence of humans with dinosaurs and other pre-Pleistocene organisms so as to cast doubt upon the mainstream geological timescale of millions of years. Several such pieces of "evidence" appeared in the twentieth century, only to be discredited upon scrutiny. Alleged human footprints in Mesozoic strata have been exposed as forgeries in some cases and identified as dinosaur tracks in others (Neufeld 1975; Kuban 1989). An alleged sandal print on a Cambrian trilobite has been identified as a weathering pattern (Stokes 1986). An alleged fossilized, Cretaceous human finger has been identified as the infilling of a burrow (Isaak 2007). Alleged Mesozoic sediment encrusting a hammer has been identified as a recent concretion (Isaak 2007). A human skeleton that allegedly came from Jurassic sediment has been identified as an intrusive burial (Strahler 1999). An alleged Miocene deposit on Guadeloupe in which a human skeleton was found has been shown to be a Quaternary deposit (Strahler 1999). The Ica Stones, upon which are images of dinosaurs that were allegedly made by ancient inhabitants of present-day Peru, have been exposed as forgeries (Isaak 2007). The Acámbaro figures, which include dinosaur statuettes allegedly made by ancient inhabitants of present-day Mexico, have been exposed as forgeries (Di Peso 1953).

Another putative piece of evidence for the coexistence of dinosaurs and humans, the alleged depiction of a sauropod dinosaur at the Kachina Bridge archaeological site (Figure 1), has proved more baffling. The image, hereafter called Dinosaur 1, is of importance because until now it has escaped explanation from mainstream science. Reference to it persists in young-earth creationist literature (Swift 1997, 2006; Ham 2000; Butt and Lyons 2005, 2008) and websites (Sharp 2001; Anonymous 2009; Creation Truth Ministries 2009; Swift 2009; The Interactive Bible 2009) as a popular rallying point, heretofore without rejoinder. A plaque illustrating the image is even exhibited in the Creation Museum in Petersburg, Kentucky. Dinosaur 1 has received considerable attention from young-earth creationists but close inspection and thorough description of it has not occurred before now. This lack of research is understandable, because it is approximately 2 m above the head of the average observer on a nearly vertical surface, surrounded by rough and extremely steep terrain that discourages the carrying of a ladder, about an hour by foot from the nearest road. One author (Sharp 2001) identifies three more petroglyph images, hereafter called Dinosaurs 2 – 4, at the Kachina Bridge site as dinosaurs. Here we report the results of an investigation into the nature of these four items.

The four alleged dinosaur depictions are part of a plethora of images made by prehistoric cultures at the Kachina Bridge site. Kachina Bridge is an immense sandstone formation resembling an archway over 60 m high and wide, formed by the undercutting of a rock wall by flowing water. The images comprise rock paintings (composed of pigments) and petroglyphs formed by pecking, abrading, incising, and scratching. Earlier examples are associated with Archaic era hunter-gatherers that occupied the study area generally prior to 1000 B.C. Other images are for the most part attributed to Ancestral Pueblo farming societies (Basketmaker II–Pueblo III) dating from approximately A.D. 200 to 1300. Some petroglyphs may have been made by more recent protohistoric or historic Paiute, Ute, or Navajo groups (Grant 1978; Schaafsma 1980; Cordell 1984; McVickar 2001; Cole 2009; Spangler et al. 2009).

METHODS

The hypothesis that a given petroglyph depicts a dinosaur makes four predictions: (1) the image is a single image, not a composite of separate images, (2) it depicts an animal, (3) its features cannot be reconciled with an interpretation that it depicts a member of the non-dinosaurian local fauna that was contemporaneous with its maker(s), (4) its features depict a specific, identifiable dinosaur, and (5) it is entirely human-made.

To test these predictions the four alleged dinosaur depictions were examined with the naked eye and with the aid of binoculars and telephoto lenses. Observations were made while the images were illuminated by direct and indirect sunlight and when they were in shadow. Accurate documentation and analysis of petroglyphs requires this level of observation and recording insofar as visibility varies considerably under changing light conditions, and it may be difficult if not impossible to per-

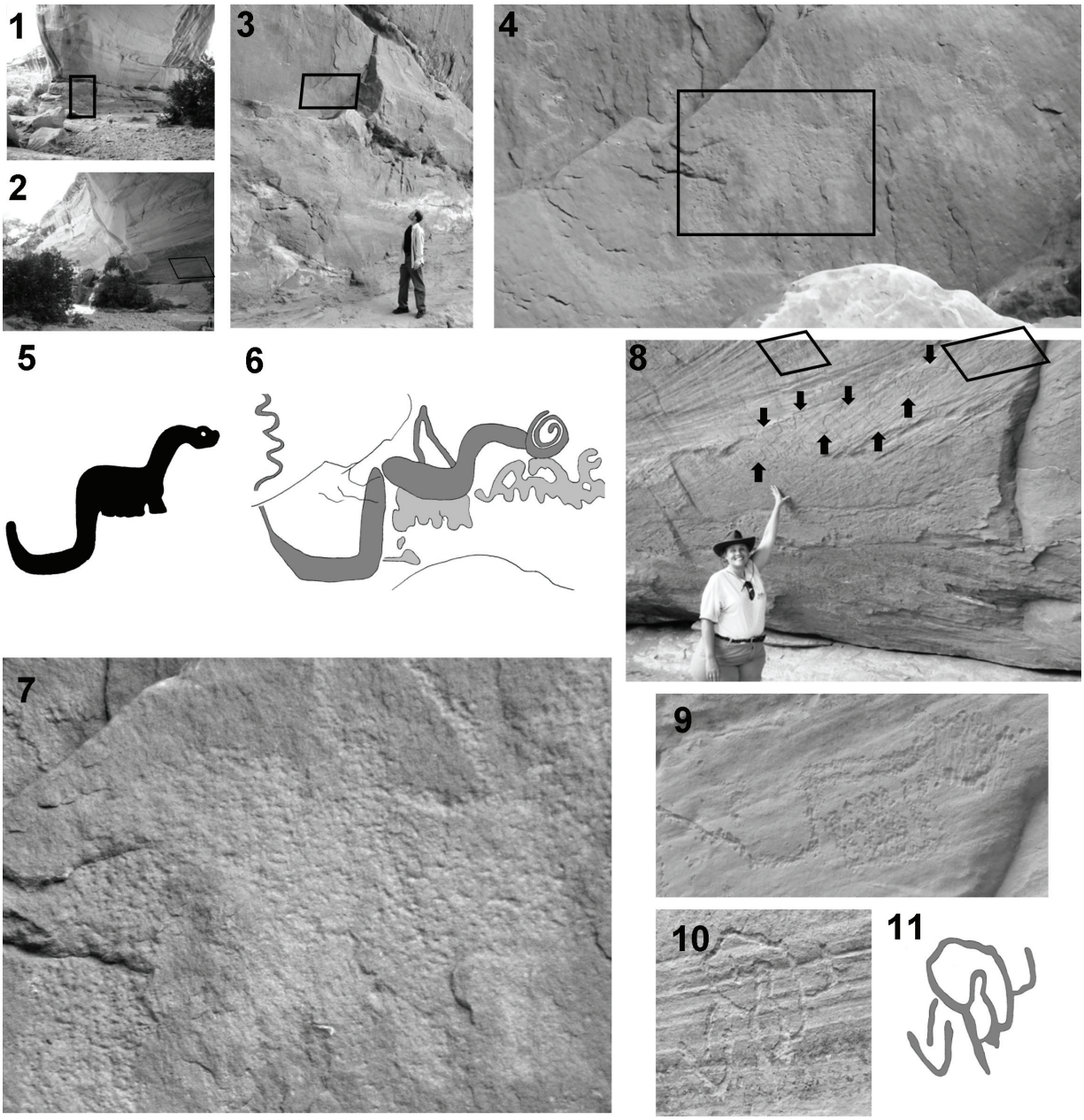

FIGURE 1. Alleged ancient depictions of dinosaurs at Kachina Bridge, Natural Bridges National Monument, Utah. **1.1**. location of Dinosaurs 1 and 2 at Kachina Bridge, with box indicating area enlarged in 1.3. **1.2**. location of Dinosaurs 3 and 4 at Kachina Bridge, with box indicating area enlarged in 1.8. **1.3**. location of Dinosaurs 1 and 2 on the rock wall, with box indicating area enlarged in 1.4. **1.4**. Dinosaurs 1 and 2, with box indicating area enlarged in 1.7. **1.5**. Dinosaur 1 as illustrated by Swift (2006) in a young-earth creationist book. **1.6**. line drawing of 1.4, showing the distribution of human-made pecking (dark shading) and natural mineral or mud stains (light shading). Note that the "tail" of Dinosaur 1 is a separate pecked area from the "torso," and that its "legs" and the entire body of Dinosaur 2 (beneath the "chin" of Dinosaur 1) are not human-made images but natural mineral or mud stains. **1.7**. detail of 1.4, showing texture of part of Dinosaur 1. Note that the "tail" is separate from and has denser pecking than the "torso," and that the "legs" are devoid of pecking or any other indicator of having been made by a human. **1.8**. location of Dinosaurs 3 (right box) and 4 (left box) on the rock wall, with boxes indicating areas enlarged in 1.9 and 1.10, and arrows indicating wavy line that continues to the right as the "tail" of Dinosaur 3. **1.9**. Dinosaur 3. **1.10**. Dinosaur 4. **1.11**. line drawing of 1.10.

ceive differences between natural and man-made manipulations of sandstone surfaces.

RESULTS

Dinosaur 1 does not satisfy the predictions that it is a single image, that it depicts an animal, or that it is entirely human-made. It is a composite of two separate items that were formed by pecking (a technique in which small bits of rock are chipped from the surface by a hand-held instrument), plus mineral or mud stains. The "head," "neck," and "torso" are a single item: a thick, sinuous shape formed by pecking. The "tail" is a second, U-shaped item formed by pecking. That the two items are indeed two separate items is indicated by a gap between them and also by differences in pecking patterns and densities between the two (Figure 1). The "legs" are not part of the image and are not pecked or otherwise human-made but are stains of mud or some light-colored mineral on the irregular surface. What appears to be an eye is a natural chip or depression. What appears to be a smiling mouth is the edge of the pecking that forms the "chin." It follows a raised surface that continues to the right, beyond the "head." The meaning of the two pecked items is enigmatic, but it is clear that neither depicts an animal.

The "head" of Dinosaur 1 is overlapped by a subsequent pecking of a spiral-like shape, a common motif in petroglyphs and rock paintings and on pottery of Ancestral Pueblos after Pueblo I times (~ A.D. 700 to 1300). The "torso" is superimposed over a previously pecked triangle the apex of which protrudes above the "dinosaur's" "back." The significance of the triangle is enigmatic.

Dinosaur 2, located beneath the "chin" of Dinosaur 1, is allegedly a depiction of a second sauropod dinosaur (Sharp 2001). However, close inspection reveals that it is entirely composed of mud or mineral stain (Figure 1). No part of it is human-made. Its resemblance to a sauropod is vague at a distance and vanishes altogether at close range.

Dinosaur 3 is located on the opposite wall of Kachina Bridge. It allegedly depicts the three-horned dinosaur *Triceratops* (Sharp 2001). However, close inspection reveals that it is a composite of two items, neither of which depicts an animal. One item includes the head, torso, and tail of the alleged animal. The "tail" is the last undulation in a pecked, wavy line that continues to the left for approximately 3 m (Figure 1). The wavy line is forked on either end, and the tines of the right fork continue parallel to each other to form the "torso" of Dinosaur 3 then diverge in a wide arc on the right to form a closed loop, the "head." From the "head" a short, pecked extension emanates to the right. The second item is a series of eight vertical, pecked lines that are supposedly the legs of Dinosaur 3. However, these lines do not connect to the rest of the alleged animal. The lines probably represent a procession of eight people. Thickenings at the top of the lines suggest stylized heads, and similar depictions occur widely in the northern Southwest. Particularly well-known examples occur at the Procession Panel on Comb Ridge, a geological uplift southeast of Natural Bridges National Monument (Cole 2009; Wilshusen 1999, 2006). This type of imagery is proposed to be associated with prehistoric trade and/or group travels or migrations over time. Prehistoric trails and built roads are documented in the vicinities of Pueblo communities, and clan migrations are significant events in the oral histories of descendent peoples (Stevenson 1904; Courlander 1971; Yava 1978; Vivian 1990).

The eight lines meet a horizontal line that runs beneath them and continues to the left and crosses the "tail." This pattern suggests a trail or pathway. It is clear that no animal is depicted, but even if one imagines that the loop plus eight vertical lines together depict an animal, it has neither the three horns nor the cranial frill characteristic of a *Triceratops*. In fact, it resembles no specifically identifiable quadrupedal animal, so the allegation that it is specifically a dinosaur would remain baseless even if it were an animal.

Dinosaur 4 is alleged to possibly depict the one-horned dinosaur *Monoclonius* (Sharp 2001). This allegation is difficult to understand upon close inspection of the form, which is a linear squiggle formed by a series of curves made by continuous carving into the rock rather than by pecking. It does not specifically resemble any animal, living or extinct, nor indeed any identifiable object. Somewhat similar "squiggle mazes" as defined by Turner (1963) are ubiquitous in late prehistoric Pueblo petroglyph panels and may be associated with travel routes and symbolic of group migrations.

DISCUSSION

Pareidolia is the psychological phenomenon of perceiving significance in vague or random stimuli, e.g., seeing animals in clouds or the face of a religious figure in a food item. The results of this investigation indicate that the dinosaurs of Kachina Bridge are examples of this phenomenon and exist only as pareidolic illusions. They can therefore be

added to the list of discredited evidence for the coexistence of dinosaurs and humans. It should be noted that, unlike some previous such "evidence" (Di Peso 1953; Neufeld 1975; Isaak 2007), in this case there was no deliberate hoax.

ACKNOWLEDGMENTS

We would like to acknowledge the assistance of several individuals. The sharp eyes and quick mind of J. Muench were invaluable in locating Dinosaur 1. Rangers B. Bailey and G. Gower and volunteer C. Gilbertson helped P.S. and J. Muench locate the site. Archaeologist Laura Martin put P.S. in touch with S. Cole, and L. Lantz and S. Edwards provided expert field analysis. Photos in Figure 1 were taken by J. Muench and P.S. Two anonymous reviewers provided useful suggestions that improved this manuscript.

REFERENCES

Anonymous. 2009. Genesis Park exhibit hall. Room 1: the dinosaurs. www.genesispark.org/genpark/ancient/ancient.htm.

Butt, K. and Lyons, E. 2005. A trip out west—to see the "dinosaurs". *Reason and Revelation*, 4(3):9R-11R.

Butt, K. and Lyons, E. 2008. Physical evidence for the coexistence of dinosaurs and humans [Part 1]. *Reason and Revelation*, 28(3):17-23.

Cole, S.J. 2009. *Legacy on Stone: Rock Art of the Colorado Plateau and Four Corners Region*. Johnson Press, Boulder.

Cordell, L. 1984. *Prehistory of the Southwest*. Academic Press. New York.

Courlander, H. 1971. *The Fourth World of the Hopi*. Crown Publishers, New York.

Creation Truth Ministries. 2009. Dinosaurs, creation, and evolution. www.creationtruthministries.org/answers/dinosaurs.html.

Di Peso, C. C. 1953. The clay figurines of Acambaro, Guanajuato, Mexico. *American Antiquity*, 18:388-389.

Ham, K. 2000. *The Great Dinosaur Mystery Solved*. New Leaf Press, Green Forest, Arkansas.

Ham, K. 2006. *The New Answers Book 1*. Master Books, Green Forest, Arkanasas.

Ham, K. 2008. *The New Answers Book 2*. Master Books, Green Forest, Arkanasas.

Grant, C. 1978. *Canyon de Chelly: the People and Rock Art*. University of Arizona Press, Tucson.

Isaak, M. 2007. *The Counter-Creationism Handbook*. University of California Press, Berkeley.

Kuban G.J. 1989. Elongate dinosaur tracks, p. 57-72. In Gillette, D.D. and Lockley, M. G. (eds.), *Dinosaur Tracks and Traces*. Cambridge University Press, Cambridge.

McVickar, J.L. (ed.). 2001. *An Archeological Survey of Natural Bridges National Monument, Southeastern Utah*. Intermountain Cultural Resources Management Professional Paper No. 64, National Park Service, Denver.

Neufeld, B. 1975. Dinosaur tracks and giant men. *Origins*, 2:64-75.

Schaafsma, P. 1980. *Indian Rock Art of the Southwest*. University of New Mexico Press, Albuquerque.

Sharp, D. 2001. Dinosaur petroglyphs at Natural Bridges National Monument. www.rae.org/dinoglyph.html.

Spangler, J.L., Yentsch, A.T., Green, R. 2009. *Farming and Foraging on the Southwestern Frontier: An Overview of Previous Research of the Archaeological and Historical Resources of the Greater Cedar Mesa Area*. Colorado Plateau Archaeological Alliance, Ogden, Utah, and National Trust for Historic Preservation, Washington.

Stevenson, M.C. 1904. *The Zuni Indians: Their Mythology, Esoteric Fraternities, and Ceremonies*. In *Twenty-third Annual report of the Bureau of American Ethnology*. U.S. Government Printing Office, Washington.

Stokes W.L. 1986. Alleged human footprint from Middle Cambrian strata, Millard County, Utah. *Journal of Geological Education*, 34:187-190.

Strahler A.N. 1999. *Science and Earth History—The Evolution/Creation Controversy*. Prometheus Books, Amherst.

Swift, D.L. 1997. Messages on stone: ancient rock art challenges evolutionary theory. *Creation Ex Nihilo*, 18(2):20-23.

Swift, D. 2006. *Secrets of the Ica Stones and Nazca Lines*. No publisher given.

Swift, D. 2009. Dinosaurs and humans: petroglyphs of dinosaurs. www.dinosaursandman.com/index.php?option=com_zoom&Itemid=15&catid=1.

The Interactive Bible. 2009. Dinosaur art by Native Americans (petroglyphs). www.bible.ca/tracks/native-american-dino-art.htm.

Turner, C.G. III. 1963. *Petrographs of the Glen Canyon Region*. Museum of Northern Arizona Bulletin 38 (Glen Canyon Series 4), Flagstaff.

Vivian, R.G. 1990. *The Chacoan Prehistory of the San Juan Basin*. Academic Press, New York.

Wilshusen, R.H. 1999. Basketmaker III (A.D. 500–750), p. 166-195. In Lipe, W.D., Varien, M.D., and Wilshusen, R.H. (eds.), *Colorado Prehistory: A Context for the Southern Colorado River Basin*. Colorado Council of Professional Archaeologists, Denver.

Wilshusen, R.H. 2006. The Genesis of Pueblos, p. 19-27. In Noble, D.G. (ed.), *The Mesa Verde World*. School of American Research, Santa Fe, New Mexico.

Yava, A. 1978. *Big Falling Snow: A Tewa-Hopi Indian's Life and Times and the History and Traditions of His People*. University of New Mexico Press, Albuquerque.