Of Rock Rings and Red Herrings:
Something Fishy on Black Mountain,
Northwestern Mojave Desert

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Abstract

This paper describes and analyzes a series of stacked stone features located on Black Mountain in Pilot Knob Valley, northwestern Mojave Desert. The author evaluates each stone feature and concludes that they are historically interesting. He describes his evaluative process for determining the era to which a feature can be attributed.

Introduction

Black Mountain lies within the China Lake Naval Air Weapons Station South Range in the northwestern Mojave Desert (Figure 1). It is a lonely, rhyolitic formation thrust some 230 m above the surrounding alluvial plain of Pilot Knob Valley. Though not terribly imposing in size, the mountain is conspicuous within the bleak surrounding desert, visible for miles around.

Even before the mountain was formally surveyed for archaeological materials, it was known to present some intriguing archaeological features, including rock ring enclosures and stone cairns. For a variety of reasons, these features raised some significant archaeological questions about both their function and their antiquity. These reasons are, in no particular order of importance: (1) the relatively large number of features within a somewhat limited space; (2) an unusual juxtaposition of two distinctive surface feature types—while both rock rings and particularly stone cairns are common sights in the Mojave Desert, they tend not to occur alongside one another; (3) the absence of any institutional memory at the base of any military or recreational activities that may account for the rock rings; (4) the rather haphazard distribution of cairn features, an unexpected characteristic for formal mining claim markers, which are the usual explanation for rock cairns found in the desert; (5) occasional inexplicable morphological variability among the cairns, including a “two-peaked” cairn clearly visible from the road alongside Pilot Knob Wash and the oddity which drew attention to the Black Mountain features to begin with; and (6) the improbability that any right-minded hard rock miner would expect to find ore-bearing deposits in this particular geological setting.

Perhaps the clincher in our growing intrigue and suspicion over the antiquity of the rock features lies in the location of Black Mountain itself. Specifically, the prominence is centrally located within a significant prehistoric landscape. To the north of Black Mountain lies the juncture of Panamint and Death valleys as well as the Panamint and Owlshead mountains, all locations that witnessed permanent prehistoric and protohistoric habitation (Underwood 2006). To the immediate south of Black Mountain lie numerous springs, including Seep Spring, Pothunters Spring, Lead Pipe Spring, and Granite Wells, all known to be critical seasonal destinations in prehistory (Clewlow et al. 2004; Walsh and Backes 2005; Wells and Backes 2005, 2010; Walsh 2010). Lying directly along the straightest route is Black Mountain, a veritable landmark located virtually midway between notable
Figure 1. Location of the Black Mountain study area.
permanent prehistoric and protohistoric villages and a number of well-used seasonal destinations.

In all, the Black Mountain array of surface features suggested that something fishy was going on there, so the mountain was targeted for on-foot survey and inventory of archaeological materials in an effort to solve the mystery (Walsh et al. 2005).

While stumped before entering into the fieldwork, I will not leave the reader hanging. I state from the outset that, in the end, all features are definitively historic in origin. Each of the “suspicious” aspects of the Black Mountain array turned out to be a “red herring,” the archaeological equivalent of the skulking groundskeeper, the shifty-eyed nephew, and dog that did not bark. The unusual character of the Black Mountain feature array is suspicious indeed when viewed as a combination of oddities. But when broken down individually, each intriguing element has its own perfectly logical explanation. These explanations uniformly point to twentieth century origins.

In this paper I will briefly recount the elimination of each red herring by resolving each of the odd aspects recounted above. I then present a set of criteria for definitively prehistoric features of the very sort encountered at Black Mountain in the hope that any similar suite of features found elsewhere in the Mojave Desert will be more easily seen for what it is: an intriguing, potentially misleading, but ultimately explicable phenomenon. I will focus this “typological inventory” primarily on prehistoric rock rings, having dealt elsewhere with the typological characteristics of prehistoric rock cairns (Walsh and Clewlow 2006; see also Begole 1974; Cleland 2005).

### Rock Rings

Fifteen rock rings or enclosures were noted over the north slope of Black Mountain (Figure 2). These appear to be clustered over the steeper portions of the survey area and, perhaps significantly, each provides a commanding view of Pilot Knob Valley to the north (Figure 3). These enclosures are primarily formed of circular-to-ovate walls that encompass areas ranging from 1.8 to 12.75 m². Wall stones are stacked three to five rocks high, to heights ranging from .4 to 1.0 m. Not one shows what might be considered a “doorway.” Walls for all enclosures are comprised entirely of local rhyolite, and wall formation occasionally made use of convenient in situ boulders. Stone sizes appear to be somewhat larger than observed for the
Figure 2. Study area map with feature locations.
cairn features (below), averaging about 70 cm in diameter for all rock ring features. In all cases, wall stone rests directly atop coarse desert pavement. This gravel pavement is, moreover, undisturbed both inside and outside of every enclosure, demonstrating that no excavation or other earthmoving took place during construction of the enclosures. Local materials, occasional use of in situ boulders, and construction exclusively atop desert pavement suggest expedient manufacture of these features.

In no case was a prehistoric artifact noted on or near a rock enclosure. However, in five cases historic artifacts were noted, either in the immediate matrix of wall stones or immediately adjacent to a rock enclosure. All associated artifacts appear to be of an exclusively military nature. These include opened sanitary-type metal cans, several of which show remnant “military drab” green paint suggestive of C-ration containers. C-ration cans were introduced during World War II and were in common use until about 1945 (Koehler 1958), although stockpiled stores found their way into the diets of many disgruntled and ultimately dyspeptic soldiers throughout the Korean Conflict. These cans were observed at or very near Features 21, 24, 25, 29, and 34 (Figure 2). Near one enclosure (Feature 24) an unfired .30 caliber blank round was observed. The .30 caliber round in military applications is usually associated with the M1 carbine, a specialized, scaled-down version of the M1 Garand (which fired a .30-06 round). The carbine was initially reserved for elite troops moving fast, or those traveling in confined spaces, including paratroopers, airmen, and tank crews (Rush 2003:33–35). It was widely used throughout World War II, particularly in the later years, and saw action during the Korean Conflict. It was not officially “retired” until the late 1960s, when it was replaced by the M-16/AR-15 rifle (.223 caliber).

It is difficult to imagine any civilian or sporting application of a blank round, particularly one of .30 caliber. If what my father, a World War II veteran, says is true, it is impossible to imagine any voluntary consumption of C-rations. One can easily imagine the blank round and the rations as part and parcel of a realistic training exercise.
In all, the rock enclosures suggest a military training exercise in their clustering, their aspect and positioning, and their expedient manufacture. Despite the close proximity of several of these features in linear space (Figure 2), microtopographic differences in elevation of these features provide each individual enclosure with an unobstructed view to Pilot Knob Valley to the north (line of sight, line of fire). Artifact associations strongly suggest a World War II vintage. In this regard, if you squint just right at Pilot Knob Valley to the north, you can almost see Rommel’s *Afrika Korps* hightailing it out of El Alamein. One cannot rule out an exercise as late as the 1950s, however. Nevertheless, it must be emphasized that I have been unable to uncover any official record or unofficial institutional memory of military maneuvers at any time at this location.

It was proposed by the base archaeologist, however, that military personnel may have simply availed themselves of preexisting rock enclosure and that the features may at root be prehistoric in origin (Russell Kaldenberg, personal communication 2005). I therefore outline below a set of expectations for a variety of prehistoric (or protohistoric) rock enclosures. None of the enclosures under present examination fit any of those expectations.

**Habitation Structures**

The most common functional explanation of prehistoric rock enclosures in the Mojave Desert is that these formed the foundations for brush-walled habitation structures (Basgall and Giambastiani 1995:64–73; Blair and Fuller-Murillo 1997:57). In all cases, however, additional evidence should take the form of ample domestic debris (such as flaked stone debitage and groundstone) as well as additional features such as cooking/heating hearths. In the present case, I reiterate, no prehistoric artifacts were noted at or near any of the enclosures, nor are there likely to be buried and undetected hearth features given the nature of undisturbed desert pavement both inside and outside the enclosures. Finally, as Blair and Fuller-Murillo (1997:57) note, house foundations are not likely to be located on the slopes of relatively steep hills.

**Sleeping Circles**

One form of very expedient domicile is the so-called “sleeping circle,” which is a simple enclosure built for ephemeral use as a windbreak or other shelter. These are also expected to be accompanied by an artifact assemblage, albeit one considerably smaller than that for a formal house circle (Hunt 1960:177; Altschul and Ezzo 1994:52; Baksh 1994:36; Blair and Fuller-Murillo 1997:62). Moreover, sleeping circles are usually constructed at or very near resource collection localities, ceremonial centers, or at the outskirts of village sites (Blair and Fuller-Murillo 1997:64). It does not appear that the stacked stone enclosures at Black Mountain meet this expectation.

**Hunting Blinds**

Another common form of prehistoric rock enclosure is the hunting blind. These are usually “littered with chert or flint chipping” (Hoffman 1878:474), as well as broken and discarded projectile points (Hunt 1960:19). Obviously, the present examples fail in these expectations. However, it is intriguing to note that hunting blinds are frequently found in association with rock cairns, which presumably served as an aid to coralling or directing game to the hunter (Ezzo and Altschul 1993a:28; Blair and Fuller-Murillo 1997:67). It might be noted that, whether with spear, dart, or even longer-range bow and arrow technology, the present enclosures are not in effective locations for hunting game on the distant valley floor or in the wash below; the haphazard placement of cairns would not direct even the most dull-witted game animals toward the rock enclosures.
Storage Features

Caching behavior in prehistory may leave behind rock rings (Blair and Fuller-Murillo 1997:35). Resource caches were frequently located at convenient midway points between collection localities and winter villages (Steward 1938:15). As previously noted, Black Mountain appears to be geographically convenient to both winter villages and seasonal springs. Caches often consisted of buried baskets, pots, or rock-lined pits. Once buried, the cache was covered with a surface arrangement of stones to deter scavenging animals. When the cache was later recovered, removal of the interior covering stones may have left a remnant outer rock ring (Blair and Fuller-Murillo 1997:37). These circular features do not, however, generally leave a stacked-rock ring. Furthermore, in the present cases, in situ desert pavement demonstrates an undisturbed context, effectively ruling out the possibility that resources were buried within any of the enclosures.

Food Preparation Structures

Stacked rock rings are often a component of prehistoric “dehydrating palettes” used for drying certain plant foods (Fowler 1986:69). The rock ring enclosure served to prevent scattering the food (seeds, etc.) to the winds, or it provided protection from sheet-wash in rainy weather. Component stones also served to retain heat and speed the dehydrating process. However, this sort of feature is commonly found in resource-rich regions, where food processing was part and parcel of food gathering (Blair and Fuller-Murillo 1997:43). In the present climate regime, the Black Mountain locale is certainly not a prime resource area.

Ceremonial Structures

Finally, rock enclosures may be associated with ceremonial functions, including shamanic “vision circles” and locations for labors associated with initiation rites and other ritual activities (Ezzo and Altschul 1993a 1993b; Ezzo 1994). As a rule, most ceremonial activities in prehistory remain elusive to modern science. However, certain commonalities are associated with many ceremonial locations and include the additional presence of rock art and, frequently, associations of white quartz hammerstones, choppers, and shattered debitage (Blair and Fuller-Murillo 1997:75; Whitley et al. 1999). In the present case, both rock art and artifacts (quartz or not) are lacking in the immediate vicinity.

In summary, prehistoric explanations for the rock enclosures hinge on artifact associations and construction methods, particularly with respect to purposeful clearing or excavation of enclosure interiors. In the present cases, no prehistoric artifacts were noted at or near the enclosures, and there is no evidence for excavation within or around the rock enclosures. In all cases, rock walls appear to lie directly atop ancient desert pavement. Indeed, despite the locations of the rock enclosures on a slope ranging from 8 to over 60 degrees inclination, walls do not appear to have built sedimentary deposits on their up-slope faces. A recent (historic) vintage for the features is clearly indicated by the physical evidence. Moreover, all associated artifacts are historic in nature, and more exactly of a military cast (blank round, ration cans). In the end, there is simply no independent means for dating the rock enclosures.

Cairns

The cairns at Black Mountain were easily identified with the historic era, as it turned out, but the reasoning behind the pre-survey suspicion of somewhat greater antiquity for some (if not all the cairns) was sound. Specifically, it beggared belief that any right-minded hard rock miner would stake a claim to a plot of land with so little potential for ore-bearing deposits. Moreover, the cairns appear to be haphazardly distributed over a relatively small space. Because I have treated general cairn characteristics and functions
elsewhere (Walsh and Clewlow 2006), the focus here is only concerned with the haphazard distribution of the cairns and the probable basis for staking a mining claim on Black Mountain in the first place.

Twenty-five rock cairns were noted on the northern slope of Black Mountain (Figure 2). These show a decidedly haphazard distribution over space. Note that the numbers given to features in Figure 2 appear randomly assigned. This is not intended to further the notion that the features are haphazardly distributed. Owing to military base operations and unseasonal rain, practically every field day was truncated, and so the survey, while ultimately systematic and complete, was conducted in fits and starts. Features were numbered sequentially as encountered, but each day’s survey did not always begin where the previous day’s survey left off.

Although some variation is apparent, each cairn is essentially a small conical pile or stack of stones. In nearly all cases, component stone is exclusively dark brown or black rhyolite, available in the immediate vicinity of every cairn. Cleared areas surround all cairns, suggesting in all cases that construction was largely of the most immediate materials. Selected cairns show small numbers of stones of gray pumice, which is also locally available in several large outcroppings over the north face of Black Mountain and in wash areas immediately below these outcrops. Cairns thus appear to be exclusively expedient in manufacture and consist of from 12 to 40 stones piled from two to seven stones high. Several cairns make convenient use of large, in situ rhyolite boulders. Cairn footprints are primarily ovoid (n = 19) with a lesser number of truly circular cairns (n = 6).

As luck would have it, the very first cairn examined, Feature 1 (Figure 2), yielded a can with mine claim papers stuffed inside. Eventually, Features 32 and 38 revealed mining claims as well (Figure 2). Each of these cans remains in situ, but a careful field inspection of the fragile papers revealed only the most cursory information. No information was provided regarding the focus of the claim (i.e., the targeted resource), the dimensions of the claim, nor whether the claim was ever, in fact, registered officially with the county records. However, all three claims appear to have been staked by the same individual, a Mr. Pernell Barnett, on March 30 and 31, 1927.

Feature 32 (Figure 4) provided the claim paper with the most information. Paperwork was filled out by Barnett, who may have had a co-claimant, J. E. Linnell. The claim was witnessed by George N. King and R. A. Taylor. The name of the claim is provided as “Perro Caliente No. 1,” dated March 30, 1927, and I cannot help but wonder whether this was a play on “Cerro Caliente,” perhaps a more apt name for Black Mountain. Neither a Perro Caliente (“Hot Dog”) nor a Cerro Caliente (“Hot Hill”) mine claim appears to have been registered with the San Bernardino Bureau of Mines. The cairns with claim documents do not stand out in any dimensional or morphological way from cairns lacking papers. Put another way, it is not possible to point to a given cairn and assume that it was or was not used as a mining claim based on its dimensions or its morphology alone.

Two additional cairns appear to be definitive mining cairns. Features 17 and 26 (Figure 2) show quite deteriorated wooden slats embedded in their matrices, a secondary but acceptable form of literally “staking” a mining claim (Ricketts 1944; Gilmore 1960). Thus, at least five cairns appear to represent assertion of mining claim boundaries. But what of the remaining cairns, and more particularly, what about their apparently haphazard distribution? Moreover, what was being claimed? I take these questions in order.

Historic mining claims require at least four (and as many as six) cairns per claim, marking the four corners of a square or rectangular area (Ricketts 1944:9–10; Gilmore 1960). If the claim is particularly large or
corner markers are not otherwise intervisible, the center points may be marked along the long axes. Maximum size for a rectangular “lode claim” (i.e., non-placer) is 1,500 ft by 600 ft (457 m x 183 m), that is, approximately 300 ft on either side of a hypothetical lode vein, to a maximum length of 1,500 ft. There is no minimal claim size. Because a claim follows the natural strike of a lode vein, there are no mandates concerning the orientation of a claim (along cardinal directions, for instance). Thus, given the haphazard orientation that a claim may take, along with discretionary claim size, we might expect to find a very haphazard distribution of cairns in the “archaeological present” where multiple claims have been asserted over time. See Papke and Davis (2002:14, Figure 2) for an illustration of this phenomenon. Furthermore, where multiple claims were made, the idiosyncratic nature of claim sizes and orientations makes it virtually impossible to associate one cairn with another as corners of the same claim. Lastly, single cairns may serve as corners of differing claims. In other words, it gets messy, and it is virtually impossible in such situations to even estimate the numbers of claims staked over a given area.

At minimum three claims have been asserted over the north slope of Black Mountain (Features 1, 32, and 38, each with documentary evidence). Because notice of a miner’s claim must be placed within only one corner cairn for each claim, one may expect to find an additional three and as many as five cairns without documentary evidence for each case of documentary evidence. For Barnett’s claims one could expect as few as nine and as many as 15 additional cairns. Next, in view of the distinctive execution of the two staked cairns (Features 17 and 26), I assume that these are not the work of Pernell Barnett. One might thus expect an additional six cairns and as many as 10 cairns to be historic in origin. Therefore, assuming five definitively historic cairns, between 15 and 30 cairns are expected to be associated with mining. In fact, 25 cairns in total
were located. In all, the sheer number and the lack of discernable patterning to the distribution of cairns in itself makes no argument against a historic origin for undated cairns; all the cairns fall within the dimensional range of the cairns that are definitively historic in origin.

Then there is the question of the material claimed. It is unlikely a 1920s prospector was so thoroughly unskilled at field geology that he expected to find precious metals at Black Mountain. However, recall that chalcedony appears in the vesicles of Black Mountain’s native rhyolite. This scattered chalcedony may have encouraged the belief that high-quality chalcedony seams are hidden, providing a desirable mining commodity in itself (blue chalcedony is especially prized), or the scattered chalcedony may have been a potential guide to mining ancillary gemstones that frequently accompany pure chalcedony, such as onyx, carnelian, jasper, and agate. Indeed, an abandoned onyx mine is located near Christmas Canyon, some 32 km to the southwest of Black Mountain, and a blue chalcedony mine is located about 21 km to the immediate south of the project area. It is very likely that the historic mining claims targeted gemstones.

This suggestion is supported when one considers the proximity of a claim near Lead Pipe Spring (Figure 1) in which one Francis “Shady” Myrick stumbled upon what must be the equivalent of the Holy Grail for gem hunters, a gemstone that was ultimately named for him. His namesake, myrickite, is described as a white to gray chalcedony, interestingly mottled pink to reddish brown thanks to inclusions of cinnabar (Sterrett 1914:650–651). In point of fact, myrickite is a lapidary term, like tiger’s eye or moonstone, and is not a true mineral. Nevertheless, Myrick achieved lasting renown for his find. Although he never got rich from the find, within a decade the likes of Shady Myrick were joined by assorted misanthropes and loners including Lemuel “Stinky” McPuckett and, perhaps, Pernell Barnett, each in quest of fame and fortune, not necessarily in that order See Kaldenberg (2010) for an account of colorful characters who graced the Mojave Desert during the twentieth century.

Indeed, some intriguing circumstantial evidence has been unearthed in support of Barnett’s interest in gem collection. A Pernell Barnett was noted as the newly installed Director of the Whittier, California, Gem and Mineral Society (Anonymous 1955:35). I have no urge to qualify this assertion, but while Barnett seems to be a fairly common surname, “Pernell” would seems to be an uncommon given name. The coincidence cannot be ignored.

**Discussion**

I seem to spill a lot of ink (Walsh and Clewlow 2003, 2006) and not a little hot air (Walsh and Clewlow 2004) treating the subject of what desert features are not, and that is the focus of this paper, too. But the desert is full of undated (and probably undatable) red herrings, things that may or may not be what they appear to be. The Mojave Desert is a place where WWII tank tracks are still visible and where sheep and humans alike wore (and continue to wear) practically indelible trails into desert pavement, and these trails are indistinguishable as to purpose or time period. It is a place where Native Americans, miners, soldiers, hunters, and assorted desert rats have formed rock features for their own purposes. The antiquity of many of these features is often extremely difficult to distinguish, not least because in many instances historic features share construction methods and materials, if not functional purposes with their prehistoric counterparts. Worse still, the Mojave Desert is also a place where New Agers and other delusionals create modern features for their own purposes, often following prehistoric designs, including prayer circles and intaglios (or geoglyphs). Although incongruous features, such as an intaglio of the iconic Southwestern trickster Kokopelli (Los Angeles Times 2010) are easily dismissed by
archaeologists, many of the remaining features so created are irritating red herrings.

This does not mean that we cannot interpret functional (and therefore chronological) clues for many features such as rock rings and cairns, however. Feature morphology, placement, aspect, and other threads of evidence derived from explicit expectations of a feature for any given function (or vintage) need only be generated and evaluated. I certainly do not advocate a scientific method that relies solely on the “last idea standing” procedure, where explanations are offered for objects merely after exhausting all the alternatives. However, I do believe that if the best we can do under some circumstances is to eliminate certain functions from consideration, we have made some progress. That is a far better scientific method than one which is compelled to anoint a feature as one specific object or another simply so that it is classified in the name of cultural resource management.

It is possible to sort the prehistoric from the historic, even in the absence (or near absence) of associated artifacts, and we do need to sort these out, because rock rings, cairns, and other rock features in the desert may range from the very recent to the very, very old (Cerveny et al. 2006). This will become more evident for a multitude of political, economic, and social reasons. It is likely that future generations of archaeology students will be increasingly dependent on archival records for their studies and less able to conduct actual field work and evaluate cairns, rings, trails, and the like at first hand. What we record today will live in the archival record for posterity, so we have to get it right or at least not get it wrong.

Conclusion

So the mysteries of Black Mountain all seem to have their logical explanations, and all reside firmly in the twentieth century. Still, there are a few “fishy” elements remaining out there. Among these is the two-peaked cairn noted in the opening paragraphs of this paper (Figure 5). This feature at the foot of Black Mountain’s northern slope may be a trail marker or other cadastral landmark.

Figure 5. Twin Peaks, Feature 2. View from Pilot Knob Valley wash.
Indeed, the cairn seen from the dirt road in Pilot Knob Wash is the first thing that draws attention to features on Black Mountain. Is this a weapon rest associated with rock rings and military exercises? Is it a prehistoric feature imbued with logistical, ritual, or other symbolic meaning in the prehistoric landscape, or is it simply another mining claim, one with a little added pizzazz?

This list of possible functions could probably go on forever, because for this feature the reader’s guess is as good as mine. So let’s not guess. For now, let’s call it a “two-peaked rock cairn, age and affinity unknown.” It is better to use neutral or even ambiguous terms than to indulge in our best and most sincere guess at a function that may not only be wrong but will outlive us all.

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