



Famous picture of the California Geological Survey Field Team of 1864 showing (L to R): Gardiner, Cotter, Brewer, and King, with props apropos to their work. This team portrait was taken about a year after Brewer and King explored Pluto's Cave.

INSIDE – Pluto's Cave, some history and clean-up trip report.

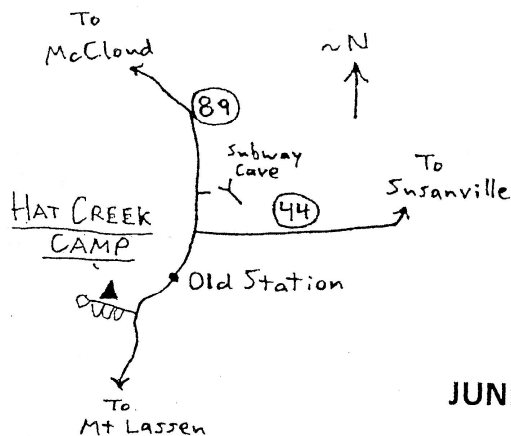
The SAG RAG is published by the Shasta Area Grotto of the National Speleological Society. Grotto meetings are held at different locations on the fourth Friday of each month at 7:30 p.m. Meeting locations are announced in the SAG RAG. Membership dues are \$5 dollars per year and include newsletter subscription. Original material not otherwise noted is copyright to the SAG RAG. Such material may be copied with credit given to the author and the SAG RAG. For use outside of the caving community, please seek the permission of the author or editor first. Send material for publication any time to Bighorn Broeckel, 2916 Deer Meadows Road, Yreka, CA 96097 or <caverbill@live.com>. For more on SAG, check the web site at <<http://www.caves.org/grotto/sag>>.

CAVER CALENDAR 2017

May 13 Speleo-ed, in Sequoia National Park.
 May 26 SAG Meeting location TBA
 June 23-25 Hat Creek Campout, meeting 7:30 pm Saturday. Clean-up and survey of Garbage Pit.

Maps to Meetings

MAY: TBA



JUNE



Shasta Area Grotto,
 meetings 4th Friday of the month in members homes, 7:30pm, dues \$5

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Newsletter, SAG RAG, 6X per year
 editor: Bill Broeckel, caverbill@live.com

SAG RAG SUMMARY By Bighorn Broeckel

The Pluto's Cave history has been on my mind for a long time, but that didn't make it any easier to write. All I really wanted was to put out what historical reports were on hand, but ended up doing a bunch of fact checking just to make it somewhat coherent and accurate. It was certainly a celebrated cave early on, and stands today as an example. Too much public notice and information can cause problems for caves. However, through the writings of these 19th century cavers, we can also pick up some hints as to the earlier Pluto's Cave, and better imagine it in its pre-modern, less traveled condition. The subsequent changes are only too obvious, but we can also see ways in which the cave is still the same as it once was. Next issue watch for a Bruce Rogers recent tome on great caves at Lava Beds, and updates on Shasta County lava caves. Yes, we have access to the higher lava flows again. Happy caving season. **BB**

January 27, 2017 Shasta Area Grotto Meeting

Chair Liz Wolff called the meeting to order at 7:50 pm at Melanie Jackson's house.

Present were Steve Hobson, Melanie Jackson, Jim & Liz Wolff.

No minutes were available.

Treasurers report shows a balance of \$873.

No RAG or web reports were available.

Correspondence: an inquiry from SFBC for a joint cave trip.

An inquiry from the owner of Lightning Canyon Ranch about any caves known in the area. NCRC scholarships are available.

Calendar:

Mar 24	meeting changed to Hobson's in McCloud.
Apr 28	at Wolffs' in McCloud.
May 13-14	Speleo-ed in Sequoia.
May 26	Melanie's and caving at Lava Beds.
June 9-11	Paul Gibson trip, contact Joel Despain.
June 19-23	NSS convention, Rio Rancho NM.
June 23-25	Hat Creek campout.
Labor Day	packers to Marbles, contact Steve.

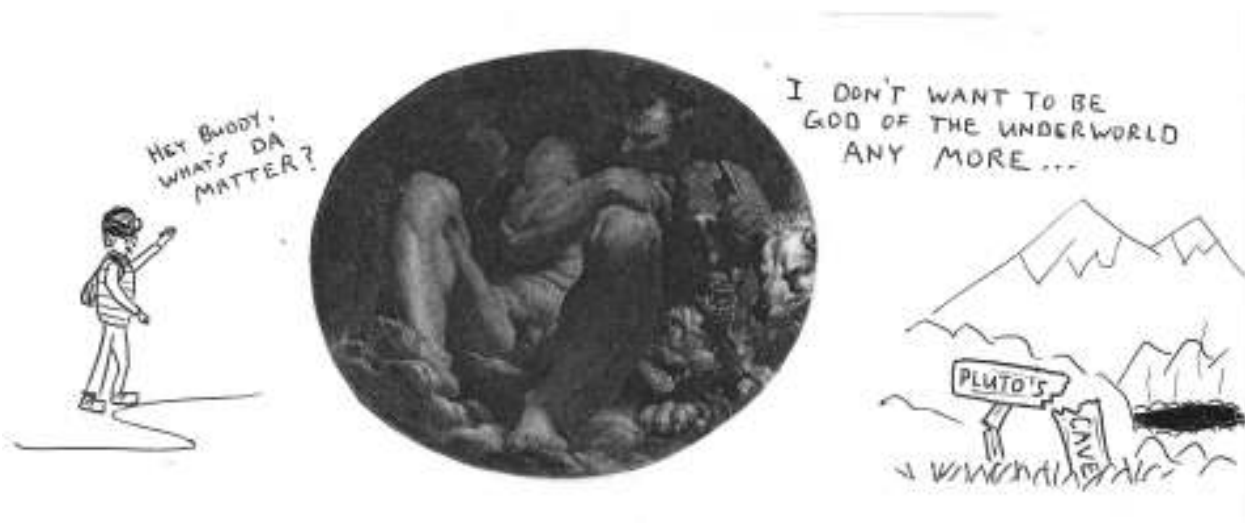
Old Business: None.

New Business: Updating member list; several will be dropped from the member list.

No trip reports.

Meeting adjourned at 8:40 pm.

Executive Committee



SOME PLUTO'S CAVE HISTORY By Bill Broeckel

The main purpose of this historical installment is to highlight some 19th century visits to Pluto's Cave by three prominent persons from those times, namely: William Brewer, Clarence King, and John Muir. Just to set the scene, let's take a look at some of the context from those times.

The modern history of Pluto's Cave might be said to date back to the Civil War era (1861-1865), when the pioneer settlers of Siskiyou first became aware of this large lava tube cave in the year 1863. According to Wells' History of Siskiyou County, published by Harry L. Wells in 1881, Pluto's Cave was "discovered" by Nelson Cash in the Spring of 1863, "while hunting for estrayed cattle". Thus our sad but true tale has its start out in the hills of Shasta Valley over 150 years ago.

That very April, two men set out to explore the cave. Their names were Elijah Heard and George W. Tyler. Heard and Tyler provided the name for Pluto's Cave. Wells gives us an account of the journey, as follows:

"The entrance was about five hundred feet above the valley, being some three miles up the slope of the mountain. They entered through an opening ten feet high and twenty wide, and advanced through a succession of halls and chambers, or caverns, until they passed through an opening thirty feet square into the large cavern, or cave proper. They traversed this cautiously, over piles of fallen rocks and other obstructions, until they came to where an immense heap of rocks barred further progress. The distance to this point from the entrance they estimated at from one and one-half to two miles, and how far beyond the barrier of rocks it extended could not even be conjectured. Quite a current of air was felt in the cavern, nearly extinguishing their candles, caused by a subterranean river, another cavern, or a second entrance beyond. In the main cavern were found a pile of faggots and other evidences of fire, that bore the appearance of having been there for years, perhaps centuries, and probably had been, as the existence of the cave was unknown to the Indians. The walls within are very dry, the usual dampness of a subterranean cavern being absent, thus contributing to the preservation of objects deposited there. Quite a number of people have visited the cave at different times, but a more thorough exploration than this has never been made. Several smaller caves have been discovered within a radius of a few miles, but none of so great dimensions as this." (Wells, 1881).

Tyler himself wrote a newspaper article regarding the exploration of Pluto's Cave, published on April 18, 1863. Thus early on, the cave was brought to the attention of the local general public. (Halliday, 1962).

In April, 1863, John Muir turned 25 years of age, and was finishing another year of college at the University of Wisconsin. Later, he did a botany walk to Iowa, and stayed the next winter with his sister Sarah and family. Then when President Lincoln needed 500 thousand more soldiers, Muir went north to join his brother Dan, dodging the draft in Canada.

Meanwhile, Clarence Rivers King was 21 years old when Heard and Tyler scooped Pluto's Cave. King had not registered for the draft, although he could have claimed a student's waiver. Two years were completed with honors at Yale Scientific School (later named Sheffield). Determined to pursue Geology, and inspired by reports from the California Geological Survey, King decided to head west.

continued



Clarence King (1842-1901)



California Geological Survey, December, 1863. Joshua Whitney in the middle. King & Brewer on right, about two months after exploring Pluto's Cave. Note same floor as in the cover photo.

Two others joined him for the journey. William Hyde had family in Nevada. Jim Gardiner was King's childhood best friend. King also traveled with letters of introduction from his Yale professors. The threesome of young men set off by train from Niagara Falls, interestingly enough, in April of 1863.

Hyde stayed in Nevada while the others pressed on. King and Gardiner arrived in California in poor shape, having lost their letters, money, pistol, and clothing when a building burned down in Nevada. (They were not the last ones to lose their shirts in Nevada.) Serendipitously, they chanced upon William Brewer on a paddleboat out of Sacramento. Brewer, aged 31, was also an alumnus from the Yale Scientific School. He was leading field work for the California Geological Survey, this having been started in 1860 under the direction of J.D. Whitney. The Survey was moving north at the time, and King was able to join up with Brewer as a volunteer. Gardiner gained a position in military engineering, though he too would later work on Whitney's famous project.

Thus it was that in the Fall of 1863, Brewer and King found themselves at the entrance to Pluto's Cave, as representatives of the official government sponsored California Geological Survey, skimming the state for "geological cream". There was only one thing to do. They proceeded to take a good look at the recently revealed underground wonder. King's biographer describes the day as follows:

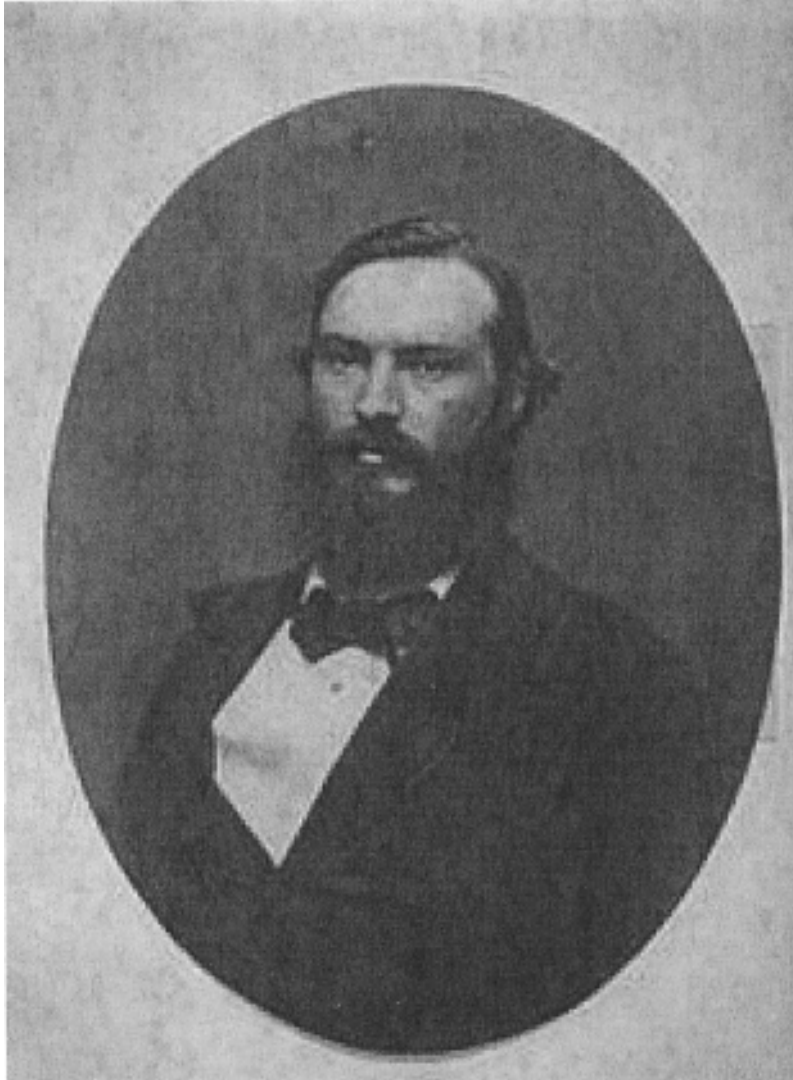
"They moved northward then through blistered basalt formations until they came to Pluto's Cave, an extraordinary tubular cavern that extended just below the surface of the lava plain. They entered it beneath a high arch and made their way by candlelight for nearly a mile, with innumerable bats flicking past them in the still, heavy air. 'It looks', wrote Brewer, 'as if the surface of the great lava flow had cooled, but that the crust had broken somewhere lower down and a long stream of the fluid had run out, leaving a long, empty channel or gallery'. At its head they blew their candle out in order to experience the complete, unearthly darkness there. Then they fired a pistol to note the quality of 'its dull, muffled explosion'. It was an experiment King would repeat at the identical spot seven years later and describe in his chapter 'Shasta Flanks'." (Wilkins, 1958).

King writes of the cave trip: "In 1863, in company with Professor Brewer, I visited this very region, and we were then shown an interesting tubular cavern lying directly under the surface of a lava plain". (King, 1872).

Finally, Brewer himself gives this more detailed account:

October 10 in the morning we went to visit a cave about three-quarters of a mile distant, just discovered, and of which extraordinary stories were told. It was, indeed, quite a curiosity. It is called Pluto's Cave. The surface of the country is a gentle lava slope, very rocky, with but little soil, and with stunted cedars and bushes, the lava rising into innumerable hummocks a few feet high. Under this the cave extends. It looks as if the surface of the great lava flow had cooled, but that the crust had broken somewhere lower down and a long stream of the fluid had run out, leaving a long, empty channel or gallery. The roof of this gallery is beautifully arched – in places it is at least fifty feet high and as many broad. The bottom is of broken blocks of lava, and the sides are occasionally ornamented with fantastic shapes of stone, where the melted or viscous fluid has oozed through cracks, like tar, then cooled, in others like froth on the surface of

continued



William Brewer (1828-1910)

the molten mass – but all now cool enough, hard, rough, black rock. We went in near a mile, to the end, or at least to where the fallen fragments blocked up the way. Multitudes of bats lived in it, even to the very end. Near the entrance, the roof had broken in in several places, and there were many skulls of mountain sheep that had got in and perished". (Brewer, 1930).

Seven years later, in 1870, King returned to Pluto's Cave and repeated his cave tour with another fellow explorer, and gave this account in his "Shasta Flanks" chapter:

Mr. Palmer and I revisited the spot, and, having tied our mules, descended through a circular hole to the cavern's mouth. An archway of black lava sixty feet wide by eighty high, with a floor of lava sand and rough boulders, led under the basalt in a northerly dir-

continued

ection, preserving an incline not more than the gentle slope of the country. Our roof overhead could hardly have been more than twenty or thirty feet thick. We followed the cavern, which was a comparatively regular tube, for half or three quarters of a mile. Now and then the roof would open up in larger chambers, and the floor be cumbered with huge piles of lava, over which we scrambled, sometimes nearly reaching the ceiling. Fresh lava-froth and smooth blister-holes lined the sides. Innumerable bats and owls on silent wing floated by our candles, fanning an air singularly still and dense.

After a cautious scramble over a long pile of immense basalt blocks, we came to the end of the cave, and sat down upon piles of debris. We then repeated an experiment, formerly made by Brewer and myself, of blowing out our candle to observe the intense darkness, then firing a pistol that we might hear its dull, muffled explosion.

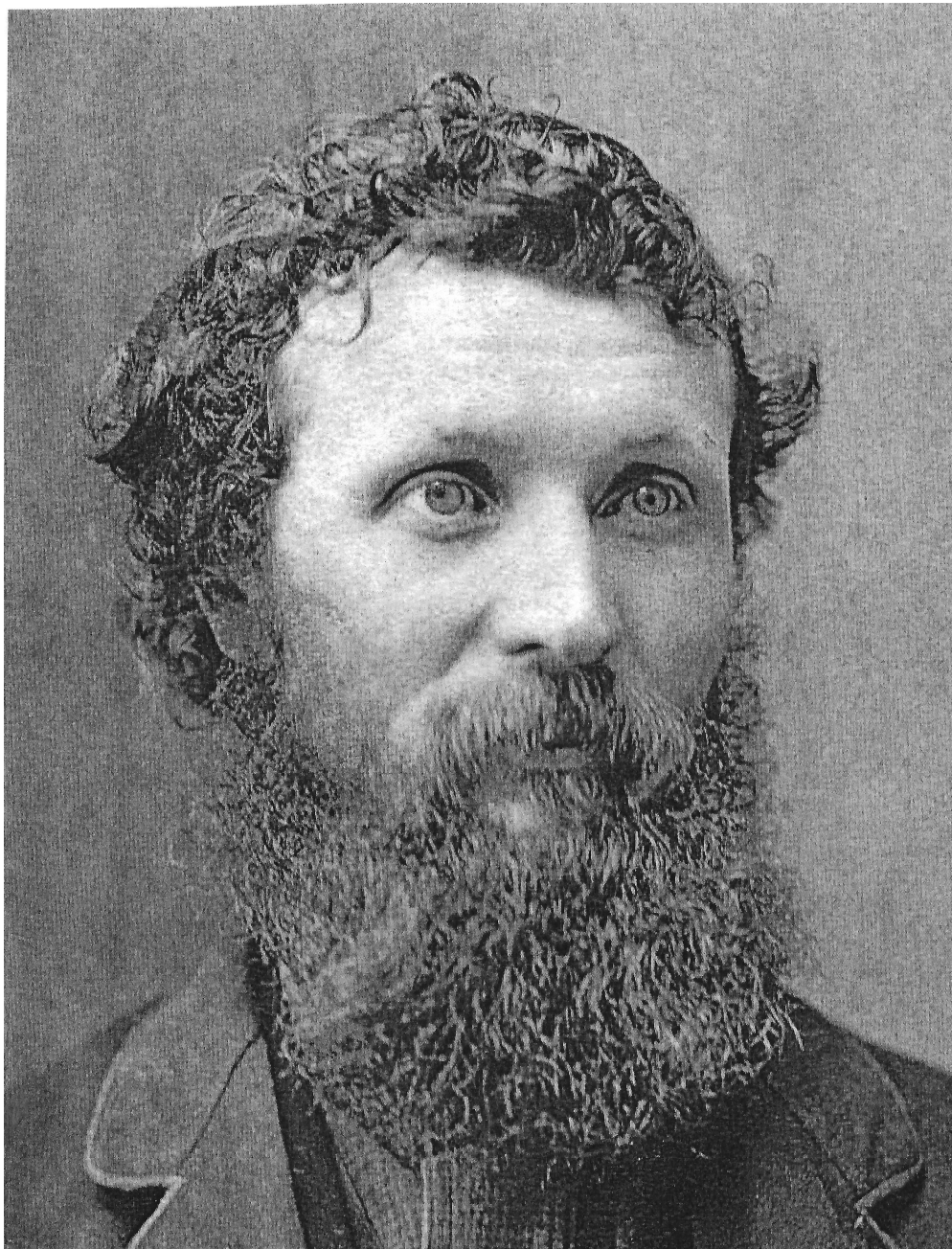
The formation of this cave, as explained in Professor Whitney's Geological Report, is this: A basalt stream, flowing down from Shasta, cooled and hardened upon the surface, while within the mass remained molten and fluid. From simple pressure the lava burst out at the lower end, and flowing forth left an empty tube. Wonderfully fresh and recent the whole confused rock-walls appeared, and we felt, as we walked and climbed back to the opening and to daylight, as if we had been allowed to travel back into the volcano age." (King, 1872).

John Muir arrived in California in 1868, and was 30 years old when he first saw Yosemite. This became his life focus until he left the Valley in 1873, and started to broaden his horizons. Turning north, he walked up from Redding and took a good look at Siskiyou County. He thought that this too should be a National Park. He climbed Mount Shasta on 11-2-1874, and then climbed it again two more times on 4-28-1875 and 4-30-1875. After the November climb, and after sitting out the first big snowstorm of the winter, he wrote the following account: "On the fifth day I returned to Sisson's, and from that comfortable base made excursions, as the weather permitted, – to the Black Butte, to the foot of the Whitney Glacier, around the base of the mountain, to Rhett and Klamath Lakes, to the Modoc region and elsewhere, – developing many interesting scenes and experiences." (Muir, 1888). I surmise from this that Muir probably visited Pluto's Cave sometime that winter, between the November and April Shasta climbs. Muir includes the cave on his Shasta circumnavigation guide:

"In a north-northwesterly direction from the foot of the pass you may chance to find Pluto's Cave, already mentioned; but it is not easily found, since its several mouths are on a level with the general surface of the ground, and have been made simply by the falling in of portions of the roof. Far the most beautiful and richly furnished of the mountain caves of California occur in a thick belt of metamorphic limestone that is pretty generally developed along the western flank of the Sierra from the McCloud River to the Kaweah, a distance of nearly 400 miles. These volcanic caves are not wanting in interest, and it is well to light a pitch-pine torch and take a walk in these dark ways of the under-world whenever opportunity offers, if for no other reason to see with new appreciation on returning to the sunshine the beauties that lie so thick about us." (Muir, 1888).

John Muir was 36 years old that winter. Here is his trip report from Pluto's Cave, which Muir alluded to as "already mentioned":

continued



John Muir (1838-1914)

"On the north side of Shasta, near Sheep Rock, there is a long cavern sloping to the northward nearly a mile in length, thirty or forty feet wide and fifty feet or more in height, regular in form and direction like a railroad tunnel, and probably formed by the flowing away of a current of lava after the hardening of the surface. At the mouth of this cave where the light and shelter is good I found many of the heads and horns of the wild sheep, and the remains of camp-fires, no doubt those of Indian hunters who in stormy weather had camped there and feasted after the fatigues of the chase." (Muir, 1888).

continued

Muir would make what I consider to be his summary statement of Shasta Area caves in his later book entitled "Mountains of California", mentioning "innumerable lava-caves, great and small, originating in the unequal flowing and hardening of the lava sheets in which they occur, fine illustrations of which are presented in the famous Modoc Lava Beds, and around the base of icy Shasta". (Muir, 1894). These are the very areas we gravitate to, as cavers, in the winter. Muir, wintering here 1874-1875, did the same thing. Thus he missed out on higher elevation lava cave flows, and caves in glaciated marble, which certainly would have captured his interest and imagination. I find myself wishing he had found the time and inclination to stay a summer, and perhaps write a book called "Summering in the Siskiyou". He himself claimed to have ideas and material for at least a hundred books. (Muir, Branch, 2001).

There we are then, with three 19th century descriptions of Pluto's Cave, by three famous explorers: King and Brewer in 1863, King again in 1870, and Muir 1874 or 1875. All three later published their reports on the cave in popular books. So what became of these three early California cavers?

Clarence King went on to live a very colorful and eventful life, with many hills and valleys, including a stint as the first Director of the USGS. The best book he wrote was "Mountaineering in the Sierra Nevada". What about his good friend James Gardiner? Eventually he returned to the East, worked on the New York State Survey, and then as a civil engineer.

William Brewer also returned to New York, to head the Agriculture Department at Yale's Sheffield Scientific School, with many awards and accomplishments over the years. For John Muir, he later settled in the Bay Area, writing, traveling, and continuing as a popular champion of American conservation. All three of these men highlighted here married later in their lives, long after their wild adventures in Pluto's Cave. (Brewer, Alsup, 1999).

What later happened to Pluto's Cave is perhaps not so good. With such early local and national notoriety, the cave has been subjected to intense human visitation for over 150 years. Specific location information, one way or another, has been available all this time. The bighorn sheep bones mentioned by John Muir were soon all gathered up and removed as souvenirs (Moore, 1961). Today, the cave is plastered with years of graffiti, ranging from very old to very new. Cave soils have been entirely disrupted by pot hunters, grave robbers, and treasure seekers.

Cavers from SFBC (San Francisco Bay Chapter) mapped the cave in 1983, with a total length of 2,501 feet. Accumulated trash has been largely mitigated by a long series of annual clean-up trips conducted by the local grotto (Shasta Area Grotto). Bats and owls continue to inhabit the cave, somehow accommodating to frequent disturbances. This has been severely tested most recently by massive marijuana celebrations at the site, and by a deranged person discharging firearms into a large colony of Mexican Freetails, and then scattering bits of fresh garlic among the remains. Thus over 100 bats were murdered outright, or worse, left to languish, mortally wounded on the floor. Pluto's Cave has become something of a darling to the New Age thinking centered on nearby Mount Shasta, and it is common to find incense candles and crystals left anywhere throughout the length of the passages.

Perhaps Nelson Cash should have kept quiet back in the Spring of 1863. Hidden away in the back of a cattle ranch, protected by Keep Out signs, barbed wire fencing, and guns across the saddles, maybe things would have turned out better. As things stand, with recreational /educational activities in progress, let us remember the persisting values in the science, history, and culture of Pluto's Cave.

SOURCES

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PLUTO'S CAVE CLEAN-UP 2017

By Bill Broeckel

SATURDAY 02-25-2017 Shasta Area Grotto conducted its latest rendition of the annual Pluto's Cave clean-up trip, with 12 participants. The group met bright and early (0930 a.m.) at the trailhead on a rare mild and moderate weather day for this season of busy, frequent winter storms. The Grotto contingent featured Bill Broeckel, Wayne Cedidla, Colby Collins, Steve Hobson, Melanie Jackson, Dave Smith, Barbara Stufflebeam, Mike Stufflebeam, and Liz Wolff. Reinforcements from the Forest Service were Derrek Beal, Juan De La Fuentes, and Will Tripp. Armed with buckets and plastic bags, we divided into teams, and picked up whatever trash we could find, from the beginning of the cave to the end. Three folks, including the new, young caver (Collins), braved the 200 foot crawlway to remove bits of candy wrapper and broken glass. After many years of similar clean-up efforts every February, we have finally reached a point of diminishing returns on the volume of trash we can find. Thus we are contemplating making this an every-other-year event. It does, however, make for a congenial outing for the group each winter. After the morning's work was done, we enjoyed a picnic at the trailhead. Then after a quick entrance check on Barnum and Sand Caves, we all went home to enjoy the rest of our week-ends.

RENEWALS: If you haven't already, it is not too late to renew dues/subscriptions.

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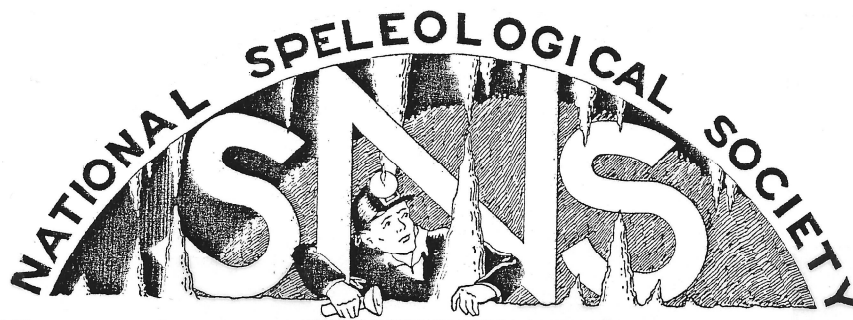
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- _____ SAG dues (includes RAG) \$5 per person or family (circle one).
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- _____ TOTAL. Make checks payable to "Shasta Area Grotto", not ("SAG") and send to Steve Hobson, POB 26, McCloud CA 96057.

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**The Shasta Area Grotto is a conservation organization devoted
To the protection and study of caves and their contents.**

Shasta Area Grotto is an Internal Organization of the National Speleological Society.



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