A Walk through Borate
Rediscovering a Borax Mining Town in the Calico Mountains

by
Robert E. Reynolds

with photographs from the collections of
William H. Smitheram and U. S. Borax Inc.
A borax miner at his home in Borate. Although Pacific Coast Borax offered accommodations in a conventional bunk house and boarding house in the town, a dugout cabin in the hillside provided cool shelter. U.S. Borax Inc.
A Walk through Borate
Rediscovering a Borax Mining Town in the Calico Mountains

Robert E. Reynolds
with photographs from the collections of
William H. Smitheram and U.S. Borax Inc.

San Bernardino County Museum Association
Quarterly
Volume 46, Number 1
Redlands: 1999
Figure 1. Sketch map of the Borate and Daggett Railroad and workings at Borate by William H. Smitheram. From west to east: Happy Hollow workings, Big Borate Canyon, and the eastern workings. Current investigations in the field and study of archival photographs indicate that additional structures existed at Borate, and that some of the features on the map are located incorrectly. The large Ella Pitchess cabin, with its foundation dug into the hillside, was near the Smith house. The Bartlett shaft is actually near the location of the No. 1 shaft, north of the trestle in Big Borate Canyon. In western Big Borate Canyon, the wagon road serviced the upper workings and may not have made a loop to the canyon bottom.
A Walk through Borate

Robert E. Reynolds

with photographs from the collections of
William H. Smitheram and U.S. Borax Inc.

INTRODUCTION

Let's step back a century to look at Borate, a mining town in the central Mojave Desert of San Bernardino County, California. This community was created and was eventually dismantled as Francis Marion "Borax" Smith pioneered methods of mining, ore grade mixing, hauling and refining that revolutionized the processes involved in marketing a salt called borax.

By the mid-nineteenth century, borax had been in limited use for glass making and ceramics for more than 4,000 years. This scarce product was discovered in the western United States in 1856 at Borax Lake in Lake County, California. John Searles recognized deposits in San Bernardino County in 1865, and deposits at Columbus Marsh, Nevada were found in 1870 (Hildebrand, 1982). These discoveries were the start of the playa (or salt marsh) production of borax.

F.M. Smith discovered and developed borax deposits at Teel Marsh, Nevada in 1872. Within five years he increased the production of borax in the United States five times over. When colemanite (calcium borate) was discovered in 1882 northeast of Barstow, California, in the Calico Mountains, Smith realized the potential of underground mining to extract borate minerals. His Pacific Coast Borax Company began to extract the colemanite from steeply-dipping Miocene lacustrine deposits and halted their less-productive salt marsh operations (Hildebrand, 1982).

The Pacific Coast Borax mines at Borate were in production by 1892. The same 20 mule teams that hauled "cottonball" borate precipitates from Death Valley to Daggett were used to pull the huge freight wagons full of heavy colemanite ore from Borate to Daggett to be shipped by the Atlantic and Pacific (later, Santa Fe) railroad to Smith's processing plant at Alameda, on the shores of San Francisco Bay.

Colemanite ore was abundant at Borate: bringing it to market was the challenge (Faye, 1999). The success of the mining operations depended upon transportation and Smith's techniques for ore "benefication" (Hildebrand, 1982) or enrichment. Why haul unprocessed ore more than 400 miles to Alameda when it could be enriched by roasting before it reached the standard gauge railroad at Daggett? The calcining (roasting) plant of Marion was built on the dry lake four miles north of Daggett to facilitate this plan. The difficult two-day trip from Borate to Daggett by mule teams was
streamlined with the construction of the narrow-gauge Borate and Daggett Railroad in 1898.

The mining town of Borate developed when mining started in 1892 and lasted until the mines shut down in October, 1907 (Smitheram, 1997). By 1903, with increased production possible through improved shipping and processing, ore reserves were endangered by depletion and tunnel collapse. The Pacific Coast Borax Company opted to wind down its Calico Mountains operation and move to the Lila C borate deposits in Death Valley (Faye, 1999).

Borate was a company town, not a “boom town” like neighboring Calico, and there is no “ghost town” left. Where did it go? All of the buildings and equipment were moved to Death Valley during the four year period between 1903 and 1907. Among the last buildings to be dismantled and recycled to Old Ryan were the family house of the mine superintendent, Wm. Smitheram (Smitheram, 1997) and the miners’ bunkhouse (Myrick, 1963:825).

On this trip back in time, we will walk up Little Borate Canyon, across the saddle to Big Borate Canyon to the site of Borate, climb up to “Borax” Smith’s house perched atop the canyon, pass by mine shafts and ore loading areas, and end our walk in East Borate near Big Gulch and the Ryan shaft. If you can arrange to have your walking group dropped off at the summit of Mule Canyon (milepost 10.0 of Day 2 in Reynolds and Cox, 1999) and picked up at the end of the walk near Tin Can Alley (near milepost 10.4), you will eliminate retracing your steps to the start of the tour.

**Little Borate Canyon**

Park at the summit of Mule Canyon Road. On the south side of the road, the cut for the narrow gauge Borate and Daggett Railroad (1898) separates from the wagon road: the B&DRR ran easterly, the wagon road north-easterly. This junction symbolizes an important turning point for the development of Borate. The wagon road was active from 1890 to 1898, primarily for mule teams hauling huge freight wagons of ore from Borate to Daggett. The mule teams took two days to make the trip, with an overnight stop at Camp Rock (Faye, 1999; see Plate 19). With construction of the Borate and Daggett narrow gauge railroad, by 1898 the geared engines “Francis” and “Marion” were hauling larger loads of colemanite on a faster schedule. Walk 600 feet east to a gully that the B&D crossed by a small trestle. Cross the gully and continue on the narrow gauge railroad grade.

After a distance of 1150 ft, pass a second trestle site (Figure 1). Just before the grade reaches the next deepest railroad cut, look to the right to a higher platform, perhaps loading platform. A circular road allowed wagons to bring borax ore up the south side of the ridge and dump it in cars that were standing on the railroad tracks. The haul road makes a significant curve and winds up reaching the drainage
in Happy Hollow Canyon.

Continue 1300 ft along the railroad grade to a large canyon. This is Little Borate Canyon. The blue-colored tailings (waste rock from the mines) were used to anchor the trestle footings that spanned this canyon. Happy Hollow is to our right (west). Leave the B&D road bed and walk westerly past nearly vertical limestone beds. The Happy Hollow mine camp site lies before us to the west.

Return to the steep wagon road curving downhill into the canyon bottom. Walk south down this road to the canyon bottom, then south up roads to the mine dumps from the Happy Hollow shaft (Plate 3). Proceed through the most obvious saddle. We are passing one of the largest workings of the Happy Hollow complex.

At the Happy Hollow shaft dump, hike past the circular turnaround. A white bed of howlite is on the left as you go up the mountain. The road winds up hill bearing right. We will branch left on the trail leading to the saddle.

**Big Borate Canyon: West Borate**

From the top of the saddle, follow a series of prospects to the southeast. The trail past the prospects actually becomes a 2-rut wagon road (since it runs over bar-and-rill it doesn’t seem to have been bladed with a slip-scrapper) that trends towards the striking blue dumps of the Smith shaft. Southeast, the wagon road intersects the major loop haul road that connected most of the head frames at shafts in Big Borate Canyon.

The wagon road joins the haul road on the terrace, nearly above the west incline, west of the Gray Shaft. The Smitheram map (Fig. 1) shows the wagon road going to our west-southwest, circling around the far wall of the canyon, and ending at the portal of the Smith shaft where timbers supporting an ore chute still remain. The map implies that the black line of the rr grade was in part coincident with the wagon road and ran high on the slope to the Smith shaft head frame. However, there are no visible signs of a road grade high on the slope. It probably kept to the canyon bottom which has the same twisting configuration shown on Smitheram's map (Figure 1). Through the rest of the district, the B&D grade was always at the level of the ore bins below the head frames.

Proceed easterly along the circular haul road, watching for branches before we reach the site of Superintendent Smitheram’s house. On the edge of the terrace are several fresno scrapes of undefined purpose that run 90 degrees to the slope. In the canyon bottom immediately east of a very large boulder is the Gray shaft, dipping about 40 degrees to the south. East of the Gray shaft the haul road bears northeasterly through a cut running down the terrace.

Follow the haul road to the canyon bottom. A wagon road runs up the hill to a terrace where the F.M. Smith house foundation and another foundation are located. Follow the road
up the hill to the terrace where the two houses sat. The Ella Pitchess house foundation, dug into the rock below the wagon road, is nearly as large as that of the Smith house. That the owner of Pacific Coast Borate would have his house overlooking the town is not surprising. Why a house of similar size was built nearby, and the connection Ella Pitchess had with Borate other than leaving her name on a single photograph (Plate 44), is unknown.

The Smith house (the only painted house in Borate) sat on the flat portion of the point overlooking Mule Canyon (named for the teams that hauled ore through it) and Big Borate Canyon, containing “downtown” Borate. The house also had a view of the B&D narrow gauge that connected the mines. The winds were so strong on the ridge that the lightweight frame house had to be wired to the surrounding outcrops. From the vantage point of the Smith foundation we can look southwest to the Mine Superintendent’s house (Plate 41), occupied among others by Fred Corkhill, Wash Cahill, and (from 1899 to 1907) the Wm. Smitheram family. The house was architecturally distinct, and may have had four rooms connected by a central sitting room. The cabin is not present in photographs predating 1896. The superintendent’s cabin that it replaced was small, tidy, and had a white front door (Plate 37).

The view east from the Smith foundation shows the Mojave River Valley, Troy Lake and Coyote Lake. The view south is to the site of the boarding house and cookhouse on the south side of the railroad line (Plate 39), with the recreation room, bunk house and post office more easterly on the north side of the railroad (Plate 43).

Look north-northwest towards the Borate and Daggett railroad grade to the giant round rock with the shade cabin (Plate 45) where the Smitheram family stayed in the heat of the summer. The cabin was at the entrance to a horizontal shaft that had a chimney twenty feet back back for ventilation. This side of the hill was probably in shade during mid-summer afternoons. Downhill to the east from the Smith foundation is a cleared rock field, apparently the site of a mule corral since mules would still have been necessary for packing and hauling where the B&D railroad did not reach.

There was growth and change in Big Borate Canyon during the life of Borate, particularly after the railroad arrived in 1898 and the work force grew. Centers for work, food, lodging and recreation were apparently relocated roughly to the elevation dictated by the railroad. In later photographs of Borate (Plate 39) there was a deck area west of the boarding house with benches, perhaps for eating outdoors, and a series of stairways that connected to the Smitheram house.

Retrace along the wagon road downhill to the railroad grade and walk north along the Big Borate Canyon wagon haul road until you are across from a tall rock and mortar foundation that runs up the hill to the High Point shaft.
and Bartlett (Number 1) shaft (Plate 6). This is a remnant of the pre-railroad era, when the 20 mule team wagons went farther up the canyon, turned around, and came down canyon into this low area to receive ore from the bunker at about the level where you are standing. The bunker was filled by an ore chute that ran steeply up hill to the Bartlett (Number 1) shaft. When the B&DRR was constructed, this ore chute and bunker were dismantled and the ore was loaded efficiently at a much higher elevation, directly from the shaft head frame into railroad cars (Plate 8).

Retrace south in Big Borate Canyon to reach the level of the railroad grade. You pass two blue dumps that mark the site of the former Big Borate Canyon trestle. Follow the inclined road easterly to regain the elevation of the railroad grade. Continue to the dumps of the Bartlett (Number One) shaft and then into East Borate and the High Point shaft and the Number 2 shaft (Plate 8).

**Big Borate Canyon: East Borate**

The Number Two shaft is notable because unexpected quantities of ore were found. This necessitated dumping waste tailings on the north side of the narrow gauge line. The Number Two shaft is the only East Borate site where significant mine dumps occur on both sides of the railroad grade (Plate 10).

Continue walking and reach Big Gulch (Plate 11), filled by blue-gray mine tailings.

Although it had a culvert at the bottom, the tailing road has been breached by erosion over the last century. East-west cuts on the ridges that trend northerly on both sides of Big Gulch may have been made by fresnos or drag scrapers gathering material for the road bed and possibly for extending the railroad grade further east.

On the east side of Big Gulch, the Big Gulch Shaft has significant dumps and a vertical shaft that fed ore bins. Cabin foundations remain on the south side of the shaft (Plate 11). Wagons had to access the Big Gulch workings by taking steep roads through Big Gulch or by coming easterly up the terrace from Mule Canyon.

The B&DRR continued 200 feet east of Big Gulch to the Ryan Shaft where it ended. There are mine workings in the canyon east of the Big Gulch Shaft and numerous wagon roads in this area. But there are no extensive mine dumps, suggesting that the Ryan Shaft and the “Resarvation” shaft 300 feet east of the end of the railroad grade, may not have been notably productive. At the end of the railroad grade, relatively gentle slopes roll southeast towards what is now Minneola Road. After our hike, we may wonder that Borax Smith and his engineers did not utilize the low grades on the east side of the Calico Mountains to access the standard gauge railroad at Daggett, a round-about route that would have avoided the steep, tortuous route south from Borate to Daggett.

It was a rugged haul for the mule teams between Borate and Daggett, the same 20 mule
teams that freighted across many miles of the Mojave Desert to Death Valley. Walk northward down Big Borate Canyon to the junction of Tin Can Alley and Mule Canyon and rejoin your vehicles, or retrace your steps through East Borate, Big Borate Canyon, and Little Borate Canyon to Mule Canyon.

Acknowledgements

Inspiration for this walk along the dusty wagon roads and railroad grades of Borate came from conversations with Borate Mine Superintendent Smitheram's grandson, William H. Smitheram. Interest and assistance in the project from Smitheram, Ted Faye of the Southern California Sesquicentennial Committee, and from Mike Rauschkolb of U.S. Borax Inc. is acknowledged and appreciated. The illustrations are reproduced with permission from William H. Smitheram's personal collection and from U.S. Borax Inc.

Literature Cited


Plates 1–16. The Mines at Borate, from West to East


Plate 2. Happy Hollow, showing the narrow ore car tracks. Happy Hollow workings were abandoned prior to the arrival of the B&DRR in 1898. *U. S. Borax Inc.*
Plate 3. Happy Hollow in West Borate. Work at Borate moved from west to east through the district as access and transportation became better. This photograph probably dates to circa 1892 since there is an 18-mule team and the freight wagon boxes are not as tall as the diameter of the rear wheels. No water wagon is present. Compare to Plates 17 and 19. U. S. Borax Inc.

Plate 4. Big Borate Canyon, circa 1892 (see Plates 5 and 7). The canyon bends to the west. In the distance are the boarding house and the first superintendent’s cabin with white door. The Bartlett (Number 1) shaft is in the foreground. Smitheram collection.
Plate 5. Big Borate Canyon, post-1898, with narrow gauge trestle and spur running westerly to the Smith shaft past the expanded boarding house and new, distinctive mine superintendent's house. The only painted house was that for visits of F. M. "Borax" Smith, situated on the ridge to enjoy a view of the mines as well as cooling breezes. Smitheram collection.

Plate 6. Workers filling freight wagons with high grade ore, pre-1898. The Bartlett (Number 1) shaft is on the hillside, with ore chutes leading to the ore storage bunker. The chimneys and rock foundation may have been an early attempt to roast ore prior to shipment. Smitheram collection.
Plate 7. The Bartlett (Number 1) shaft with head frame and extensive ore chute system and storage bunker in canyon. Smith's house on ridge. White concentrate sits on storage platform in lower right of photograph. Pre-1897. Smitheram collection.

Plate 8. After 1898, the Borate and Daggett railroad connected all central and east Borate workings below head frames. The extensive ore chute, bin and loading platforms of the Bartlett (Number 1) have been relocated for use at shafts at the elevation of the B&DRR. Compare with Plates 4, 5 and 7. Smitheram collection.
Plate 9. The Borate and Daggett Railroad swings east past High Point (right) and Number 2 shafts. The borate ore occurred in pods or lenses along the strike of the beds and was mined through individual shafts with underground workings which rarely connected with each other. *U. S. Borax Inc.*

Plate 10. The Number 2 Shaft is east of Big Borate Canyon. It is easily recognized because of extensive underground workings that required waste rock to be dumped north of the railroad grade. *Smitheram collection.*
Plate 11. A “big gulch” separated the Number 2 shaft from Big Gulch shaft, the next incline east. Since wood for trestles was expensive, this gulch was spanned by a small wooden box culvert and blue-gray waste rock from the workings to the west. The Borate and Daggett Railroad was built past the Big Gulch shaft and the Ryan shaft. The small size of the dumps suggests that little colemanite ore was extracted from properties east of the Big Gulch Shaft. *U.S. Borax Inc.*

Plate 12. Underground, Ryan shaft, circa 1902. The white colemanite ore was taken to ore cars by wheel barrow. *U.S. Borax Inc.*
Plate 13. Hoistman and equipment brought the ore cars from the underground mines to the surface. U. S. Borax Inc.

Plate 14. Borate miners at head frame, possible of the Number 2 shaft. U. S. Borax Inc.
Plate 15. Mine timbers, possibly cut in Flagstaff, offloaded from the B&DRR at the Number 2 shaft. *U. S. Borax Inc.*

Plates 17 - 35. Hauling the Ore

Plate 17. Borate team freight wagons and water wagon at the crest of Mule Canyon Road, with teamster Ed Pitcher. The wagon box is as tall as the rear wheel diameter and sideboards have been added to increase the hauling capacity for colemanite ore. Compare to Plates 3 and 19. Smitheram collection.

Plate 18. The mules were hitched in pairs and stretched out for 120 feet in front of the wagons. And usually it wasn't a complete 20 mule team, but rather 18 mules and two horses. The horses were used as “wheelers” (immediately in front of the wagons) “not because they were smart,” as one teamster asserted, “but because they had the weight to handle the wagon tongue on quick turns.” (Tex Ewell, quoted in Faye, 1999). Smitheram collection.
Plate 19. Camp Rock, a supply camp and corral located three miles west of Borate and four miles from Daggett. The water wagon is on the left side of the photograph. The short wagon boxes date this image to pre-1895. *U. S. Borax Inc.*

Plate 20. “Dinah,” a 110-horsepower steam tractor, near Borate. F. M. Smith experimented with replacing the mule teams with steam tractors in 1893, but the tractor’s extreme weight and costly maintenance made the experiment a short-lived effort. The tractor, built by Daniel Best Co. in San Leandro, California, now sits at the Furnace Creek Resort in Death Valley. *Smitheram collection.*
Plate 21. “Dinah” at the summit of Mule Canyon, 1893. Harold Grey is at steering wheel. Jerome Connely, the mechanic, is seated. Jack Saunders, the brakeman, is in rear wagon. Ella Saunders is seated in front and Flora Henderson is seated at water tank. *Smitheram collection.*

Plate 22. A mule team with borax wagons leaving Big Borate Canyon in 1897 or 1898. The trestle in the distance indicates that the Borate and Daggett Railroad was about to replace mule power in hauling ore to the railroad at Daggett. *Smitheram collection.*
Plate 23. The Daggett rail center. The view is northeast toward Dagget's main street, Santa Fe Avenue. The Borax freight wagons pulled onto a hill to load ore into railroad cars bound for the processing plant at Alameda in northern California. *Smitheram collection.*


Plate 26. Changing mule teams at Daggett circa 1889, before Borate started producing ore in quantity. Borate ore from Death Valley was hauled to Daggett for shipment (Faye, 1999). The wagons on the left are loaded with large hay bales. *Smitheram collection.*

Plate 27. Main Street, Daggett, 1903. Death Valley Scotty (Walter E. Scott) is standing in the center next to the black mules. Peoples General Store is center; to its right is the Stone Hotel (now a branch of the San Bernardino County Museum), where Scotty was a frequent guest. *Smitheram collection.*
Plate 28. Happy Hollow borate workings during the time in 1897-98 when it served as a work camp for the Borate and Daggett Railroad. *Smitheram collection.*

Plate 30. Building the Borate and Daggett Railroad. Workers laying ties and rails hauled by a saddle-tank steam engine called the “PeeWee.” The photograph was probably taken just east of Little Borate Canyon, 1897-98. *Smitheram collection.*

Plate 31. The Pacific Coast Borax Company’s 0-4-0 “PeeWee” engine was unusual but well-balanced with no wheels in front, four in the middle, and none at the back. The “T” indicates that it was supported by a swivel mount on the tender. *Smitheram collection.*
Plate 32. The narrow gauge Heisler engines, "Francis" and "Marion," were the mainstay of the Borate and Daggett Railroad. These geared locomotives could handle the loaded ore cars at slower speeds and with greater safety on the steep grades and light trestles near the upper end of the line. Smitheram collection.

Plate 33. The Borate and Daggett crosses high trestles that span Little Borate Canyon, the entrance to Happy Hollow, in 1903. Blue-gray waste rock was dumped at timber footings to stabilize the trestle. Smitheram collection, from U. S. Borax Inc.
Plate 34. The narrow gauge “Marion” and its ore cars on an elevated trestle unloading borax ore into A.T & S. F. cars for shipment to Alameda. The Atlantic & Pacific railroad was formally acquired by Santa Fe in 1893, but by the time the line was built through Daggett in 1883, the A&P was already a subsidiary of AT&SF (Myrick, 1963). Smitheram collection.

Plate 35. The borax roasting plant a Marion, about 1900. The Borate and Daggett offloads from an elevated track into bins that take the ore to the roaster for “benefaction,” or enrichment. Borax ore in sacks was loaded and shipped by standard gauge on the A&P/Santa Fe line to distribution points east and west. Smitheram collection.
Plates 36 – 47. Miners and the Community of Borate

Plate 36. This photographs shows the first small but well-appointed superintendent’s cabin with a white door. To the right is the site of the larger, second superintendent’s cabin that was built about 1895. Thus this image, showing a 20 mule team hauling freight wagons with small boxes and no water wagon, was taken before 1895. U.S. Borax Inc.

Plate 37. Photographer Perle Perry probably arrived in the buggy to take this picture and Plate 36, above. The view shows a small cook shack and a Chinese cook, a 3/4-size boarding (dining) room and the small superintendent’s building with J.W.S. Perry in front of the white door (compare to Plate 39). Note the large pile of stove wood for cooking in the left foreground. U.S. Borax Inc.
Plate 38. Mine workers in front of the boarding house and the first superintendent's residence, probably 1892-94. The child, far right, suggests that families were present early in the history of Borate. Smitheram collection.

Plate 39. Borate expands! The larger size of the boarding house suggests a larger crew with the increased production associated with the coming of the B&D RR (tracks foreground) in 1898. To the right is a deck with benches for eating outdoors. Stairs run to the new superintendent's building. The cook shack has doubled in size and to its left a "cooling" cellar has been dug into the mountain. Pigeon cages suggest that squab was served for special occasions. U.S. Borax Inc.
Plate 40. Looking down Borate Canyon from the second superintendent's house, 1894-95, before construction of the B&D RR. Smitheram collection.

Plate 41. Superintendent's house in upper Borate Canyon, 1903. The Smitheram family lived here from 1899-1907. Smitheram collection.
Plate 42. Borate, post-1898 (possibly 1903). Post office and store is at right; bunk house is in the middle. The Ella Pitchess cabin is visible on the ridge line. *Smitheram collection.*

Plate 43. Expanded “Main Street,” Borate. Two buildings have been added along with a protective wooden rail next to the B&DRR tracks. The superintendent’s house is on the left and the Pitchess house is upper right. *U.S. Borax Inc.*
Plate 44. Miners and shift boss in front of the recreation room, post-1898. This is the only photograph in the U. S. Borax collection that designates the house on the hill as belonging to Ella Pitchess. The stairway up the hill is in the center mid-distance and the Borax Smith house are also peering over the ridge. *U. S. Borax Inc.*

Plate 45. Efficient transportation of ore by the narrow gauge railroad (tracks and wooden rail in left foreground) brought more miners to Borate and thus the need for community amenities, such as this recreation room with shade roof and porch. A stairway to the F. M. Smith house can be seen just above the roof line; the Pitchess house on the ridge is partially obscured by damage to the original image. *U.S. Borax Inc.*
Plate 46. Borax Smith’s house (the only painted house in Borate) was located on the ridge above Big Borate Canyon. This view shows the spur to the West Borate workings, including the Smith shaft. *Smitheram collection.*

Plate 47. The Smitheram summer cabin at Round Rock. The B&D RR tracks don’t show in this view, but were in the immediate foreground. The family cabin was about 500 yards west of the trestle over Big Borate Canyon. A 20 ft tunnel ran from the rear of the cottage into the hillside, providing cool quarters for sleeping during the summertime heat. *Smitheram collection.*
SAN BERNARDINO COUNTY MUSEUM ASSOCIATION
INFORMATION FOR AUTHORS

The San Bernardino County Museum Association publishes articles and monographs on subjects pertaining to the cultural and natural history of San Bernardino County and surrounding regions. We welcome submissions of such manuscripts.

Subject Matter: articles and monographs pertaining to San Bernardino County, inland southern California, and surrounding regions, in history, anthropology, archaeology, paleontology, mineralogy, zoology, botany, ornithology, and related disciplines. Manuscripts considered for Quarterly publication should be written toward the well-educated non-specialist. Technical research will also be considered for publication. All manuscripts should reflect original work which furthers knowledge in their fields.

Format: Two clear copies of the manuscript must be submitted to the Editorial Board with a letter of transmittal requesting that the manuscript be considered for publication and that it is not presently under consideration elsewhere. Manuscripts should be typewritten, double-spaced, on one side only of 8.5 x 11" paper. Ample margins should be allowed for editing comments. The first page should contain the title and author(s) name, address, telephone number and E-mail address, if applicable. The author’s last name and page number should appear at the top of each following page. Include COPIES of figures, tables, and photographs. Do not send original photographs or figures with your initial submission.

Style: Authors should follow the standards for footnotes, citations, headings, and other conventions as applicable to their discipline. The Editorial Board suggests the following:

Anthropology/Archaeology: Society of American Archaeology (American Antiquity)
History: American Historical Association (American Historical Review)
Geology: Geological Society of America (Bulletin)
Paleontology: Society of Vertebrate Paleontology (Journal)
Biological Sciences: American Institute of Biological Sciences (eg., Journal of Entomology)

Authors should be aware of and avoid inappropriate gender-biased language. The Editor is available for consultation of matters of style, format, and procedures.

Review: Manuscripts will be considered by the Editorial Board of the Museum Association Publications Committee, and will be reviewed by outside experts. Manuscripts may be accepted, provisionally accepted, or be found unsuitable for publication by the Association. Provisional acceptance may include suggestions for revisions. Very lengthy or profusely-illustrated monographs that are otherwise acceptable for publication may require outside funding to help defray publishing costs. Manuscripts will be copy edited after acceptance.

Attachments: If photographs are used, originals or equivalents will be required. Photographs should be black-and-white or color prints, of good quality and contrast. Figures and drawings should be in India ink or equivalent on white paper or PMTs. Captions should be submitted on separate pages, double-spaced, and referenced to their accompanying figures. Photographs should be marked lightly in pencil on the back border with the author’s name and figure number. Authors are encouraged to submit accepted manuscripts on DOS-compatible disks or Zip disks in addition to paper copy. Please contact the editor regarding electronic submission of manuscripts and figures.

Responsibilities: The author has the primary responsibility for the correctness and reasonableness of his or her information, arguments, and presentation. In submitting a manuscript for consideration, the author assures the Editorial Board that the manuscript is an original work and does not infringe upon the rights of previous authors or publishers.

Address queries and manuscripts to:
The Editor
San Bernardino County Museum Association
2024 Orange Tree Lane, Redlands CA 92374
or query by E-mail
jreynolds@ccr.co.san-bernardino.ca.us