



## LIGHTING THE WAY TO WORK

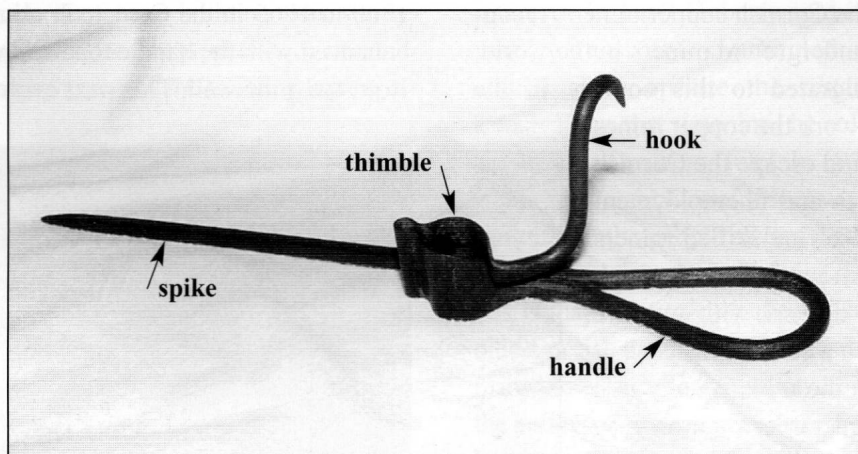
*By Bonnie Miller*

The miner was thought of as a man of few means, who required even fewer tools to pursue his trade. A simple pick and pan were probably the most important tools for the placer miner. By the 1880s mining in the west had evolved from individuals who placer mined to predominantly organized underground mining. The underground miner did not care if it was day or night as he worked around the clock. He was not dependent on summer weather or daylight to go to work, but he did need light. No tool was as important to these miners as the miner's candlestick.

The miner's candlestick was a simple tool often fabricated of wrought or forged iron or even twisted wire, averaging about eleven inches long. Although this tool performed a variety of chores, the standardized form of candlestick

had four basic elements: a thimble, a spike, a handle, and a hook. It's foremost function of course was to hold a candle. The candle was held in the candlestick by a round socket called the thimble. But the candlestick had to hold the candle, and not the miner hold the candlestick. This was so that the miner's hands would be free to do his job. The candlestick was fastened to the miner's clothing or hat by means of a hook. When he reached his jobsite, the candlestick was driven into a wood beam or crevice in the mine shaft wall by

means of a spike, earning the device the nickname "sticking Tommy". At the end of his shift or when the miner moved on, the candlestick was removed by pulling on the device's handle. And the candlestick was fastened to the miner's clothing or hat by a hook. These



**Classic Miner's Candlestick** - A classic miner's candlestick or "sticking Tommy", 11-1/2" long with the standard elements: a thimble, a spike, a handle, and a hook. This model is enhanced with the hook acting as a spring lever to keep the candle in the thimble under tension. This piece is from New Mexico and is owned by Bonnie Miller.



**Reproductions** - Two replicas of miner's candlesticks. The one on the left has only a spike with a thimble/handle combination. This model is nine inches long and is so simple it is sometimes referred to as an abbreviated style. It is made of forged iron from a blacksmith in Tuolumne County. The right candlestick is only 3-1/4 inches long and made of twisted wire. This design is in error as square wire was not readily available during the era of the candlestick, but is a good example of how the wire around the thimble acts like screw threads to hold the candle in place. Both reproductions are owned by Bonnie Miller.

four basic elements, the thimble, spike, handle and hook comprised the classic design of almost all candlesticks known in western mining. As we shed some light on this unique subject, we will discover that there are several variations and deviations from this design.

The origin of the piece we recognize today as the miner's candlestick was probably Cornwall. Most underground mining techniques used in this country were learned from the Cornish copper miners, recognized as the finest underground miners in the world. These miners immigrated to this country in the 1850s and 1860s to work the copper mines of upper Michigan and escape the Cornish copper mine closures and unemployment that was leaving these fine skilled miners without a job at home. The Cornish miner's lit their way to work with a candle or an oil lamp. When a candle was used, it was held in place in the mine usually in a lump of clay or mud rather than an iron instrument. The iron device, when used by the Cornish miners, usually only employed the spike with a thimble. The quality of the candle had improved dramatically when the smokey tallow was broken down into its base components and stearic acid candles were developed and

mass produced. The better candle quickly became the preferred method of lighting throughout mining. But the Cornish miners in the east remained loyal to their oil lamps and did not improve much on the design of the candlestick so that the candlestick's evolution in the east was very limited. Most of the improvements to the candlestick came out of the Comstock Lode which is why almost all candlesticks are artifacts of western mining.

Despite all of the eventual standardization of the tool, the truth is that there are literally thousands of derivations of the instrument and its components. In general, candlesticks can be roughly categorized into three classes: simple, basic, and standard. The original soft lump of clay that was formed around the bottom of the candle resembled a sewing thimble that covers the end of a finger, thus the name given to this part of the candlestick. The single thimble was the concept used in mines in England since the 1700s and was brought to this country by the Cornish miners. In an effort to affix the candle to the mine walls to bring the light closer to the miner's face and hands, the spike was developed with the thimble being made of a metal socket instead of clay. The thimble and spike is the simplest design. Around 1860 to 1865 in the Comstock mines the design was enhanced with the handle to aid in removing the spike from the mine wall. This next evolution in the design



**Simple Candlestick** - This simple model has only a thimble, spike and handle. Two small metal pins are visible in the center holding together this handmade piece. It is from the Comstock mines and is owned by Bonnie Miller.

is known as the basic design. In the 1870s the hook was added to what became the standard or classic design throughout the west. Anything further embellished or extravagant outside of these categories is generally thought of as “fancy”.

It is important to recognize that within each of these simplified classifications there was much variation which is noteworthy. For instance, within the simple classification employing only the thimble and spike, there are some designs which are so abbreviated that they appear to employ only a handle and spike, but it is the handle which in fact functions as the thimble (see photograph of replica). Sometimes the thimble may be enhanced with a spring lever to hold the candle under tension or aid in releasing it from the thimble. Another method of holding the candle securely within the thimble was to construct the thimble out of twisted wire which acted like screw threads. The candle was twisted into the thimble effectively holding it in place.

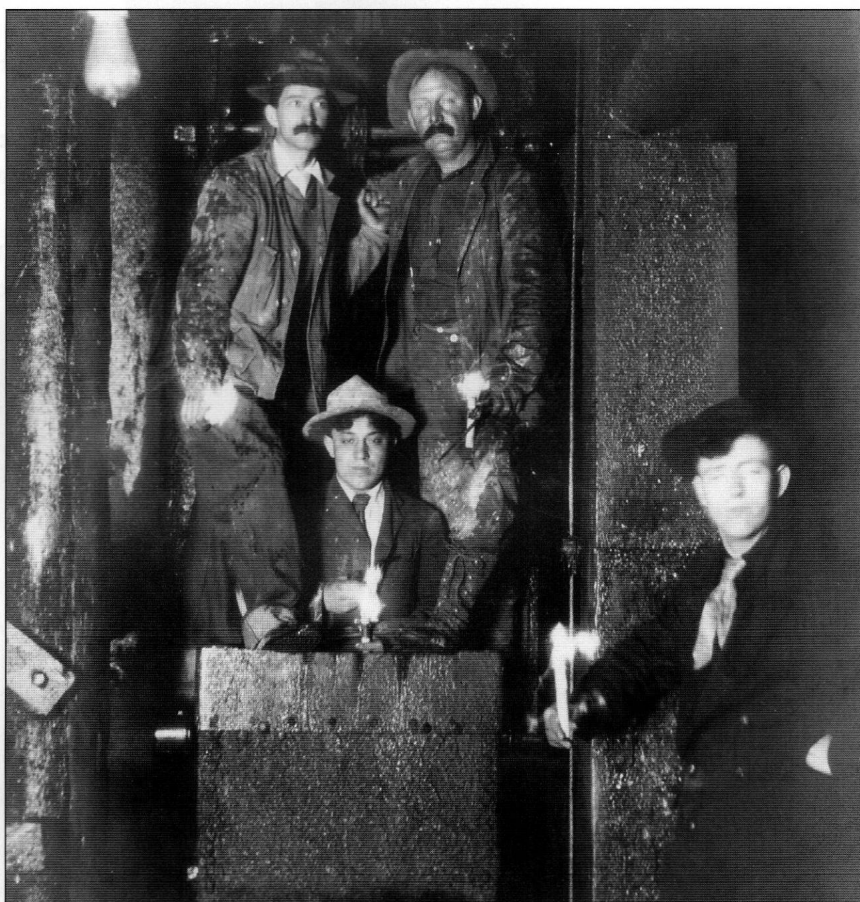
Holding the candle in the candlestick was very important. Several variations on the design employed either open or closed bottom thimbles. The open thimble usually had a spring lever and allowed the miner to feed the candle through as needed. The theory behind the closed-bottom thimble was that the candle could only burn down that far and would die out. In

fact in later years self-extinguishing models were yet another improvement introduced. The concern was that if the bottom of the thimble were open, the candle could burn all of the way down and even through the candlestick and possibly drop the flame. Thus many candlestick thimbles had a closed-bottom or bridge to prevent the candle and flame from falling through. For this reason it was very important that the miner always carefully place his candlestick so as to avoid having the flame too close to a hazard. This concern became only too dramatically real in a famous mine disaster in the

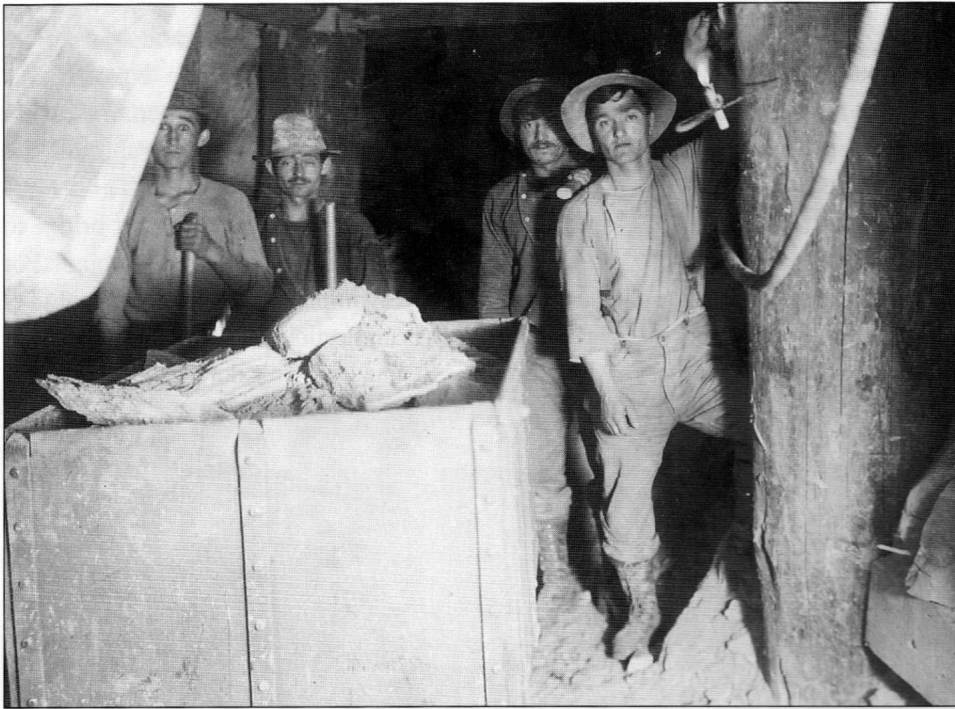
Yellow Jacket Mine in Gold Hill, Nevada. Apparently an unattended miner's candlestick burned through and ignited a huge fire, possibly involving the mine's explosives, eventually claiming 37 lives. It was only three years after this famous disaster that the first patent was granted for a “safety miner's candlestick” which was a self-extinguishing model.

The flame

was very important to the miner in more ways. Of course he needed the flame to see in order to work. The dictionary defines the light of his single candle, one candle-power, as “the illuminating power of one standard candle”. This is scant little light when you consider that by today's standards a dim 40 watt bulb emits almost 600 candle power!! Working by the flame, as well as reading the flame itself were both part of the



**Miners at Work** - Miners at the Stickles Mine in Angels Camp going down in a skip. Note three lit candles in candlesticks in their hands. Photo courtesy of the Calaveras County Archives.



**Lightner Mine** - These miners are removing an ore cart from the Lightner Mine in Angels Camp. A candlestick is clearly visible in the timber. Photo courtesy of the County Archives.

miner's job. Some miners were designated as "candle watchers". These miners were experts at reading the flame to determine air flow within a mine shaft, or the presence or even level of dangerous carbon monoxide gas.

It has often been argued that the hook was added to give the miner a place to hang his lunchpail while at work. But upon careful inspection, one will find that if the hook were underneath the candlestick as would be necessary to hold the lunch pail, then the closed-thimble models would be closed on top and unable to hold a candle unless the candle were able to burn from the bottom up! The intent of the hook was to affix the candlestick to the miner or on a wall so as to leave his hands free while moving about. There are some candlesticks which have both a hook on the top and one or two on the bottom in a "claw" style. These models were generally used to further secure the candlestick onto the wall by giving it a bigger purchase with two or more hooks. Sometimes these may have been used to hang a lantern from, but the candlestick would have had to have

been very securely driven into the wall to avoid having the weight of the lantern pull the candlestick out. There were no photographs available that showed an upside down hook being used to hold a lunch pail. There are many pictures which show the candlestick affixed to either the front of the miner's clothing (usually unlit) or to his hat (lit or unlit). The use of the candlestick on his hat seems to be a natural origin for the carbide lamps which eventually took the candle's place in later years.

The mine typically supplied all of the tools,

except the candlestick, necessary for the underground miners to do their work. The mine supplied the miner with three to five standard candles for his shift. The standard mine lighting candle was about nine inches long by 3/4 inch diameter and averaged about twelve to fourteen ounces each. As the candlestick became standardized it became mass produced. It could be purchased in quantity as an accessory to the candles. Candle makers supplied

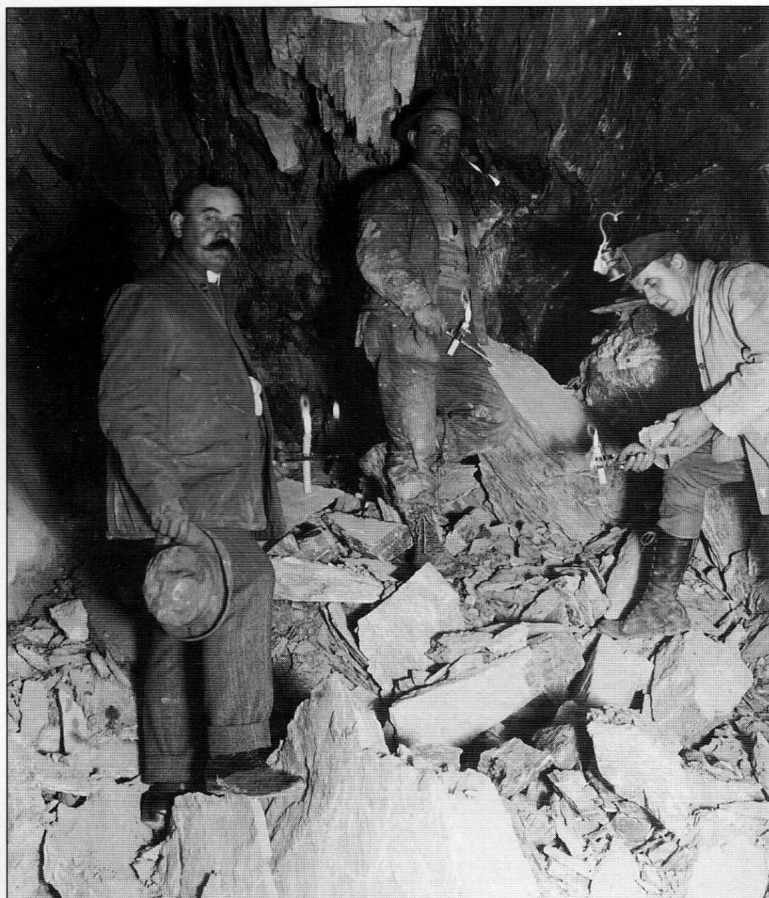


**Fancy Model** - This fancy model of a candlestick has several accessories. It is a folding model with a hinge in the spike, and it has a blasting fuse cutter and cap crimper. This elaborate model was "invented" by Dave Baratini and donated by him to the Old Timer's Museum in Murphys.

mines with cases of candles as a routine supply, and eventually began to sell the appropriate candlestick to hold their product. These mass produced candlesticks often bore the stamp, name or imprint of the designer or manufacturer. Ironically it is these marked candlesticks that are eagerly sought after by the collectors. Candlesticks were often made by the local blacksmith as other iron tools were. But many candlesticks were fabricated for extra income by miners themselves.

Since the candlestick was a personal tool of the miner, they often took on the marks, tooling, and eventually the personality of its owner. They were customized by their owner to include innovative accessories to further assist the miner in his daily work such as the addition of a blasting fuse cutter. Other features of the tool that may or may not have been useful were a swiveling thimble (called a Gimball model) that

allowed the candle to always hang vertically, a flame snuffer, a matchbox, a shade or shield or reflector for the flame, and disassembling or folding models. Since the candlestick was such a singly important tool it functioned much for the miner then as a pocketknife is carried by people today. It is not surprising that over 90 patents were issued for features for what could be a seemingly simple tool.



**Lightner Mine** - This photo shows two miners and apparently a clergyman just after a blast. Each has a candlestick with a lit candle in their hands. The miner on the right checking for gold in a rock appears to have an early style of lamp affixed to his hat. Photo courtesy of the County Archives.

Fancy personal models were enhanced with artwork such as tooling, a pistol grip handle, or miniature models of picks, shovels, etc attached to the candlestick as decorations. These beautiful and usually rare one of a kind models can be the lifetime prize of the collector.

Collectors have found many of their treasures from inside mines but this source is fairly exhausted today. A novice collector would be lucky to find one

in an antique store and would likely pay top dollar for the piece. It is very hard to get a collector to part with a treasure so it is difficult to purchase one outright for cash. Most collectors prefer the thrill and satisfaction of a trade instead. There are many imitations and replicas to be aware of as well. It is difficult to place a value on a candlestick because of the myriad of designs. Some collectors can still find replicas for as little as one dollar, or a genuine piece for a bargain of less than a hundred dollars, or be willing to pay several thousands for a coveted fancy

model that they would find to be priceless.

The candlestick enjoyed a variety of other uses besides holding a candle for lighting the way to work for the miner. Grateful mining companies sometimes bestowed a fancy or decorative model upon a valued retiring miner, similar to the "gold watch" retirement gift of later years. Replicas

were used by women of the day instead of a hat pin to secure their hats in place. Miniature models of candlesticks were sometimes used as promotional gifts or even as novelty placecard holders at elaborate dinner functions. Sometimes the candlestick was used for entertainment during their non-working hours. Sharp shooters would attempt to shoot the flame off of the top of the candle at progressively greater distances without damaging the candle or the more valuable candlestick. A less attractive use of the candlestick was to smuggle gold out of the mine. At the end of the shift a miner might fill the bowl of the candlestick's thimble with free gold to take home to supplement his income. When this practice was discovered, mines often enacted policies where the miners had to be searched before they were lifted out of the mine at the end of their day.

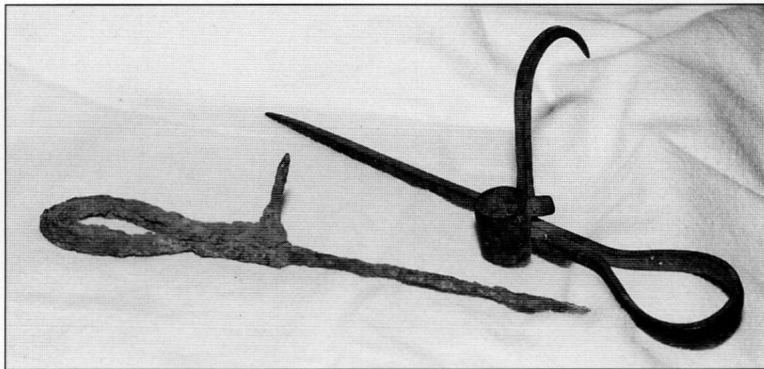
The most notorious alternative use of the candlestick was as a weapon. The simple tool with its convenient handle and sharp spike was a natural weapon. And it was almost always readily

available at the hands of all miners should a dispute erupt. A famous murder in Rhyolite Nevada in 1906 was committed with a candlestick. A drink-crazed, wife-beating miner named O'Brien attacked his wife when she had him served with divorce papers. He stabbed her in the neck with the candlestick. Amazingly she dragged herself to the street but died shortly thereafter. The drunk miner continued his rampage by turning on his wife's sister, on the Justice of the Peace, and even on himself. A deputy eventually had to shoot O'Brien killing him instantly. The sensational murder was the talk of Nevada for months and came to be known as "The Candlestick Murder". In a less dramatic incident in

Colorado, a laborer named John Otto who called himself "the ideal socialist" decided that the best way to make his point was to assassinate Governor Peabody with a candlestick. Otto may have thought of himself as ideal, but apparently he was pretty stupid. He had sent a threatening letter to Peabody which the governor decided to take seriously. When Otto arrived to do the assassination, he found the sheriff instead, and the governor absent as he had chosen to attend a football game nearby rather than wait around to be murdered.

Calaveras County is not without its candlestick murder as well. In another sensational incident in 1905, two Mexican miners at the Poley Messer Saloon at Melones got into a scuffle in which one

was killed by a candlestick. They had been there from one o'clock in the afternoon until six o'clock but the murderer claimed that they were not drunk. Alvino Cassillas stabbed his brother-in-law Bruno Asata several times. Unfortunately Asata did not die quickly but was picked up by other patrons of the



**Two Authentic Candlesticks Owned by an Authentic Miner** - The larger candlestick is a standard model obtained in San Andreas in a barter transaction. The smaller worn model probably had a thimble and hook at one time but these features have weathered away until it was recovered "while prospecting in a crick". Both pieces are owned by Howard Little.

saloon and carried home in a chair, bleeding, to his wife. The trip home was unpleasant as Asata fell out of the chair several times but was always picked up and placed back in the chair by his faithful friends. Cassillas fled the area but was eventually caught and held by the sheriff in San Andreas without bail. There was a lurid trial in which Cassillas admitted to having kept his stiletto-like candlestick always on him and sharp should the opportunity arise for him to work in a mine for a day. He claimed that he always kept his candlestick clean and shiny and did not allow candle wax or grease to accumulate on it. Despite his sincere attitude and admirable hygiene and care

for tools, Cassillas was found guilty of second degree murder.

Noted western author Frank Norris details life in the California mines for a Cornish miner in his book *McTeague: A Story of San Francisco*. Norris describes many of the uses of the candlestick in the miner's everyday lives.

The ingenuity of the frontier miner has created a true piece of western folk art to be found nowhere else in the world. The candlestick was an essential part of the underground miner's workday as well as his personal possession. He accented the tool with personal artwork or accessories and innovations, some of which were useful and some not. The candlestick enjoyed almost a fifty year life span from about 1865 to 1915 where it was the sole method of lighting the way to work for the miner. It is not surprising that when other forms of mine lighting became available, many miners clung to their candlestick even when

they were no longer needed. New carbide lamps were often resisted by the traditional, loyal candle miners. Candles often remained in use alongside carbide lamps or in remote areas where supplies were difficult to come by. Some creatively styled carbide lamps were even designed to resemble a candlestick going so far as to include a hook so as to appeal to these old die hard miners. The last patent for a candlestick was issued in 1917 but was of little use by then. By 1909 the carbide lamp had become perfected as the method for individual lighting and became the standard practice shortly thereafter. The carbide lamp did not enjoy the long life that the candlestick had seen as the era of the carbide lamp was relatively short-lived from about 1915 to 1935. Electric lighting inside the underground mines was fairly common by the Great Depression. And the electric headlamp had been perfected by about World War II. Greater availability of electricity and



**Gold Cliff Mine** - This group of miners are ready to go to work at the Gold Cliff Mine in Angels Camp. Several of the miners have candles in their pockets or their candlesticks in their hands. Note that two of the gentlemen at the top left of the photo look as though they are holding one of their fellow miners at spike point! Photo taken 1899 or 1900, and is courtesy of the County Archives.

increased awareness for mine safety drew away from use of a flame and the individual miner's light. The carbide lamps were eventually abandoned as the preferred method of lighting as electric lights replaced even those powerful lamps.



**Museum Pieces** - The Calaveras County Museum has these three fine examples on display.

**EDITOR'S NOTE:** There are some excellent resources on candlesticks and mine lighting should the reader be interested in learning more about this fascinating subject. The foremost being *A Collector's Guide to Antique Miner's Candlesticks* by Wendell E. Wilson and Ted Bobrink. Also *The Miner's Flame Light Book: The Story of Man's Development of Underground Light* by Henry A. Pohs, and *American Miners' Carbide Lamps* by Gregg S. Clemmer. *Las Calaveras* is grateful for lifelong Calaveras County resident and prospector Howard Little for providing the impetus for this article.



## Goodbye, Fred Cuneo

**L**as Calaveras is sad to report the loss of a native Calaveras County resident and former Historical Society President, Fred Cuneo. Born in 1906 at Fricot City, Fred passed on on June 13 at the age of 94.

Fred served as the postmaster of San Andreas for 18 years, but it is his community service activities for which he will be best remembered. His accomplishments and contributions to Calaveras County are numerous. To name only a few, he served as the chairman of the Calaveras County Republican Central Committee for 10 years, was a life member of the San Andreas Lions, a member of SIRS, the National Association of

Retired Federal Employees, the Knights of Columbus, The Italian Cultural Society, the Calaveras County Chamber of Commerce, the Mark Twain St. Joseph's Hospital Foundation, and the Calaveras County Fair Board.

Fred was a true gentleman respected by everyone who met him. This was because he treated equally everyone that he met with respect. He was a dedicated volunteer at the County Museum and he genuinely enjoyed meeting the visitors who came by.

The Calaveras County Historical Society sends their warmest wishes to the large family Fred has left behind. Goodbye, Fred. You will be sorely missed.



# ZWINGE BUILDING HONORED

On May 10 more than 60 descendants of Joseph Zwinge gathered in San Andreas for a reunion and honored the building constructed by their ancestor. In a joint ceremony with the Calaveras County Historical Society, the Zwinge family enjoyed the ceremony as the highlight of their reunion. In keeping with our chartered goal to preserve history, the Historical Society provided a bronze plaque which was affixed to the stone front of the building. Great grand-daughters Beverly Burton, one of the Historical Society's volunteers, and Francis Larken were instrumental in obtaining the plaque and conducting the commemorative ceremony.

Joseph Zwinge was a Prussian emigrant who lived first in New York for two years before heading west. He built the first known tent restaurant in San Andreas in 1853. It was called the American Restaurant. The tent restaurant and its two replacements which were built of wood all burned down in fires. Finally Zwinge decided to rebuild in stone as well as add lodging to the premises. It is believed that the stone used to build the restaurant, the native rhyolite, schist, green stone, and granite, were carried by mule from the Zwinge family ranch on East Murray Creek Road. The stone building was sturdy enough to withstand several subsequent tests of fire and years of use. Although the rear of the building has expe-

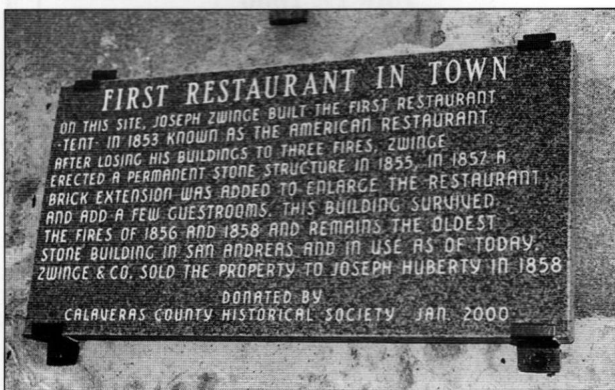


**Zwinge Building** - The oldest surviving building in San Andreas, a stone building built as a restaurant in 1853 by Joseph Zwinge. This building currently houses the Calaveras County Archives.

rienced additions and remodels in the following years, the front of the building remains almost unaltered from its original appearance. And the building has enjoyed continuous use and is still in use today.

Zwinge and Company sold the property to Joseph Huberty in 1858 when Joseph decided to pursue other interests. In 1887 Huberty sold it to William Jenkins who extensively overhauled the building and continued to operate the restaurant and boarding house. From that time until he sold it, it was known as the Jenkins Brothers Hotel. In 1936 it was acquired by mining engineer Desiré Fricot who eventually gave the building to the people of San Andreas.

Have you guessed which fine building in San Andreas this is that we're talking about? This stone building, the oldest in San Andreas, is located on Main Street and for many years served as the county library. When Fricot gave the building to the county it was with the stipulation that it be used as a library, museum, or chamber of commerce which the county has honored. Today the building houses the Calaveras County Archives. The Zwinge family should be proud of the fine legacy that their ancestor built, and we are all grateful to Desiré Fricot for the gift he gave to the people of this county.



**Dedication Plaque** - The newest plaque on the building, dedicated May 10, 2000, by the decendents of Joseph Zwinge in collaboration with the Calaveras County Historical Society.

*Photos by Bonnie Miller.*



# Calaveras County Historical Society

30 No. Main Street P.O. Box 721 San Andreas, CA 95249

## Officers and Directors

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*Las Calaveras* is published quarterly by the Calaveras County Historical Society. A subscription to the *Las Calaveras* comes with membership in the Calaveras County Historical Society for \$16.00 per year. Non-members may obtain copies from the Historical Society office. The original historical material presented in the *Las Calaveras* is not copyrighted and anyone is invited to use it. Mention of the source would be appreciated. Contributions of articles about Calaveras County is appreciated and may be submitted to the Historical Society.

The Calaveras County Historical Society is a non-profit corporation. It meets on the fourth Thursday of each month in various communities throughout the County. Locations and scheduled programs are announced in advance. Some meetings include a dinner program, and visitors are always welcome.

The Society operates the Calaveras County Museum which is open daily from 10:00 to 4:00 in the historic County courthouse located at 30 Main Street in San Andreas.

The Society's office is located in historic San Andreas, the Calaveras County seat. Visitors are always welcome to stop by the office for assistance with research, and are encouraged to visit the museum while in the area. The office is open Monday through Friday from 8:30 to 4:00, and the telephone number is (209) 754-1058.

## Museum Donations

The Calaveras County Historical Society wishes to thank the following persons who recently made donations to the Calaveras County Museum:

### March 2000

**Estyn M. & Lois Mead, Bellingham, WA**  
Copies of two letters, a travel log, and a story re: Mead/Groot family members

**Taylor Family, Railroad Flat, CA**  
Misc. papers from the Taylor Store

**Robert E. Hill, Riverbank, CA**  
Scale beam from old store at O'Byrnes Ferry Bridge; miner's tool

### April 2000

**Donna Metzger, Susanville, CA**  
*That Metzger Family and Others* book by Donna Humphrey Metzger

### May 2000

**Ray A. L. Douglas, Mokelumne Hill, CA**  
Misc. Native American artifacts

## Next Meeting of the Historical Society

July 27, 2000

Dinner meeting and installation of officers.  
Call for reservations and details, 754-1058.

## New Members

The Calaveras County Historical Society welcomes the following new members:

### March 2000

Theda B. White Swift	Paso Robles	Nick Salvetti	Sacramento
Tomas A. Fletcher	Arnold	Rick Salvetti	Carmel
Jim & Joanne Thompson	Redwood City		

### April 2000

James Riley San Francisco

### May 2000

Genna Hurst Beth Childs West Point  
Mrs. Donald J. Fragale Great Falls