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THE FIRST CORNISH MINERS AT NEW ALMADEN

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(Photo, next page: "Blessing of the Enrequita Mine, New Almaden, 1860," by Alexander Edouart (b. London, 1818-1892). The mine was later joined with the New Almaden Mining Company property, becoming known as the Enrequita Shaft. Courtesy The Bancroft Library, University of California, Berkeley).



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PREFACE

There were no banner headlines when gold was discovered in the raceway of a sawmill that John Sutter was erecting in Coloma. An account that appeared several weeks later in the March 15, 1848 issue of *The Californian*, the region's principal newspaper, was relegated to the bottom of the second page. After reporting that one person had gathered thirty dollars in gold in a short time, the writer, taking it all in stride, mentioned that "gold has been found in almost every part of the country." In a place of more prominence near the top of the same page, the newspaper reported that 200 pounds a day were being extracted from the quicksilver mine at New Almaden. (See appendix I for the articles in full).

Though New Almaden will never replace Sutter's mill in the popular imagination, organized mineral exploitation in California began in the foothills of the Gabilan Mountains, twelve and one-half miles south of San Jose. The mineral was not gold but mercury, found in rich cinnabar ore. Since mercury was the principal part of the amalgamation metal used in the reduction of gold, there could have been no gold rush without it, and more especially without a local and relatively inexpensive supply. The cinnabar from Mine Hill at New Almaden provided a local source that broke the monopoly of the Spanish quicksilver mines, reducing the cost of mining precious metals throughout The Americas.

The mechanized mining of mercury began when a British company brought skilled miners from Mexico, first Mexicans and then Anglos, almost certainly including hard-rock miners from Cornwall. Anyone who has read up on the subject knows that the Cornish were prominent in the later development of the quick-silver mine, but few have recognized that these miners from the southwest of England also played an important role during the Anglo-Mexican period and before an American company took control of the opeation in 1864. The frontier is where the races meet, but for the Mexican and Cornish New Almaden was a continuance of an acquaintance that began in the quicksilver works in Spain and the Mexican silver mines.

As a descendant of Hispanic and Cornish mining people, I have tried to do justice to both while primarily telling a story of my Celtic ancestors who became known as Cousin Jacks and Cousin Jennys. Along the way I have intentionally neglected some important aspects of the New Almaden story, which have been told elsewhere. This essay makes only passing reference to what others have taken as the major theme, the fourteen years of litigation over title to the mine. One can find a brief account of the cases in Milton Lanyon and Laurence Bulmore's *Cinnabar Hills*, and a fuller account in Kenneth Johnson's *The New Almaden Quicksilver Mine.* I have also neglected Cornish folk lore, even failing to record my grandmother's recipe for Cornish pasties (--they really are tasty). Again, *Cinnabar Hills* offers a bit of this, as does *Down in the Cinnabar Mines,* published by the San Jose Historical Museum. A. L. Rowse's **A Cornish Childhood** gives a

more comprehensive picture of life in his native county. (See bibliography for complete citations).

This essay was prompted by a visit to Redruth, Cornwall, where I walked the streets that my ancestors had walked more than two hundred years ago; by an afternoon spent touring Mine Hill with Kitty Monahan, president of the New Almaden Quicksilver Park Association; and by attending an award luncheon with the California Pioneers of Santa Clara County. It was encouraged and sustained by an affection for the memory of individual miners and their families, especially those who were workers and not owners, whose acts were almost entirely unrecorded, who lived by simple means and maybe simple faiths, and who will always be remembered by those of us who know Mine Hill.

Gage McKinney

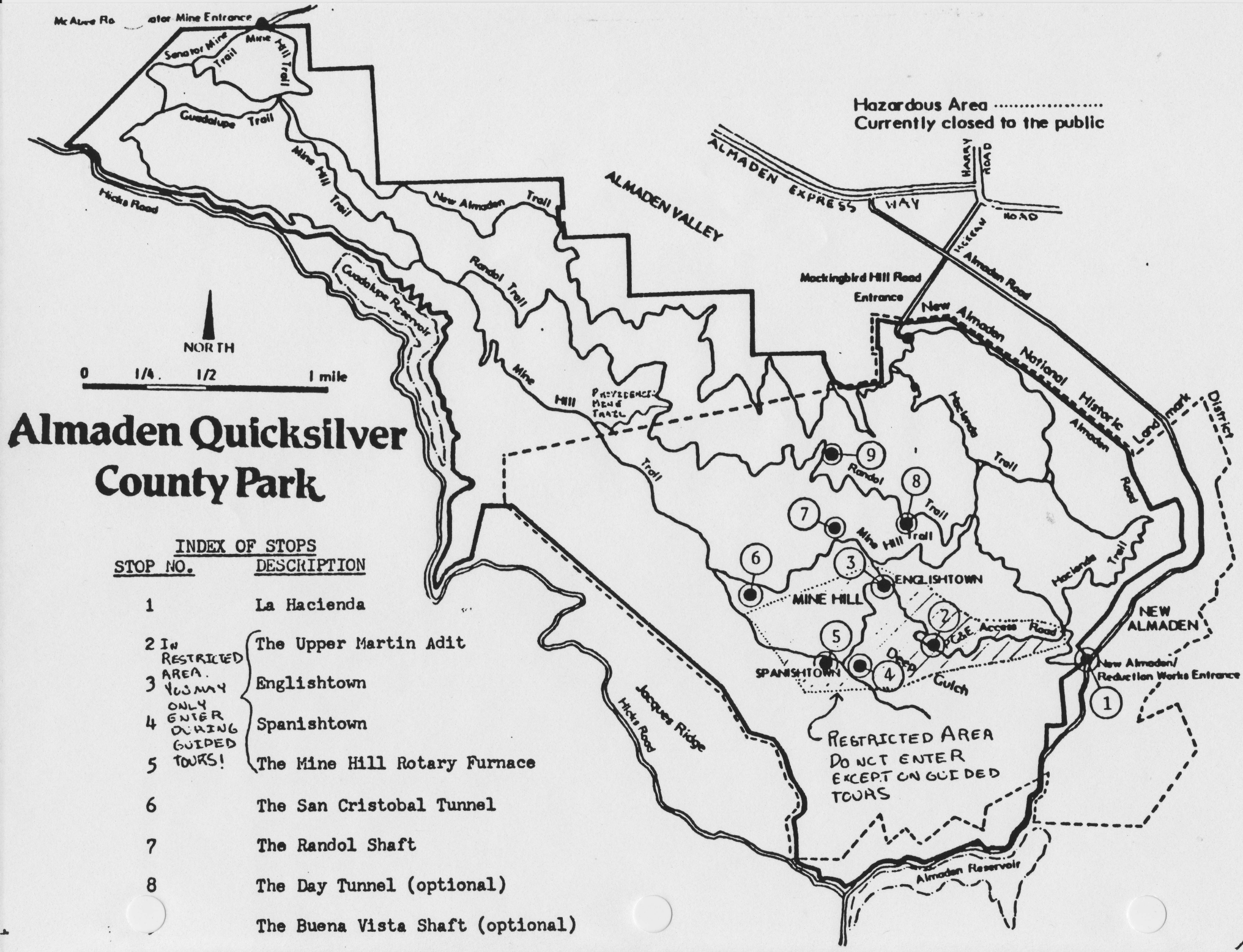
ACKNOWLEDGMENTS

It is humbling to realize how much helped I needed to research an account as brief as this one. Anyone who studies the quicksilver mine is indebted to Laurence Bulmore, co-author of **Cinnabar Hills,** whose father was the last general manager of the Quicksilver Mining Company, and who did more than anyone to perserve the history of New Almaden. Also to be remembered is Jimmie Schneider, who devoted himself to writing the mine's story and whose work is being prepared for posthumous publication by the Quicksilver Park Association. I am grateful, too, for the work of Leonard William Ascher whose 1934 Berkeley dissertation has been a great asset in the writing of this essay.

I am indebted to a legion of librarians, but most especially George Kobayashi, curator of The California Room, and the staff of the San Jose Public Library; Karen McAdams and the staff of the Cecil Green Library at Stanford; Leslie Masunaga, archivist, San Jose Historical Museum; Betty Lawler, Santa Clara County documents library; Ed Tyson, Searles Historical Library, Nevada City; the staff of the Bancroft Library at Berkeley; and the Cornish Studies Library in Redruth. I also thank the Stanford University Libraries for permission to quote from The New Almaden Collection.

In additional I want to acknowledge Eric J. Thomas, the Registrar in Redruth; Al Buckley of Oak Hill Memorial Park; B. Dianna Boothby, whose exhibit about Cornish miners was displayed at the California History Center, DeAnza College; Gray Brechin, writer and historian; Dorothy Kottinger Wuss of the Santa Clara County Historical & Genealogical Society; my cousin Lois Collins and my grandmother, Mrs. Kenneth W. Hughs, of Grass Valley; Anne V. Balejka-Hoffman of Hayle, Cornwall; Sylva Miller, a child of New Almaden now living in San Francisco; Jan Paull of Willow Glen; and Donald Prouty of Tahoe City, my long-lost cousin and great grandson of Thomas Hicks.

I also want to thank Clyde Arbuckle, who was interested in my efforts from the beginning and who allowed me to use two valuable manuscripts; Professor Robert Randall who helped me from his home in Ohio; and Kitty Monahan, who infected me (as she has so many) with her enthusiasm for the Quicksilver Park. I most especially thank Dr. A. Cecil Todd, Cornish historian and honoary member of the California Pioneers of Santa Clara County, whose books inspired me, and whose very helpful responses to my letters were a continual support throughout the course of writing this essay. Finally, I thank my wife, Ilka Weber, who helped me with research from Berkeley to Redruth, who quietly read George Eliot as I was pouring over documents from a long-closed mine, and who saw the first draft of this essay and said it was good.



Almaden Quicksilver County Park

INDEX OF STOPS

STOP NO.	DESCRIPTION
1	La Hacienda
2 In RESTRICTED AREA. YOU MAY ONLY ENTER DURING GUIDED TOURS!	The Upper Martin Adit
3	Englishtown
4	Spanishtown
5	The Mine Hill Rotary Furnace
6	The San Cristobal Tunnel
7	The Randol Shaft
8	The Day Tunnel (optional)
	The Buena Vista Shaft (optional)

1. INTRODUCTION: CARN BREA TO LOMA PRIETA

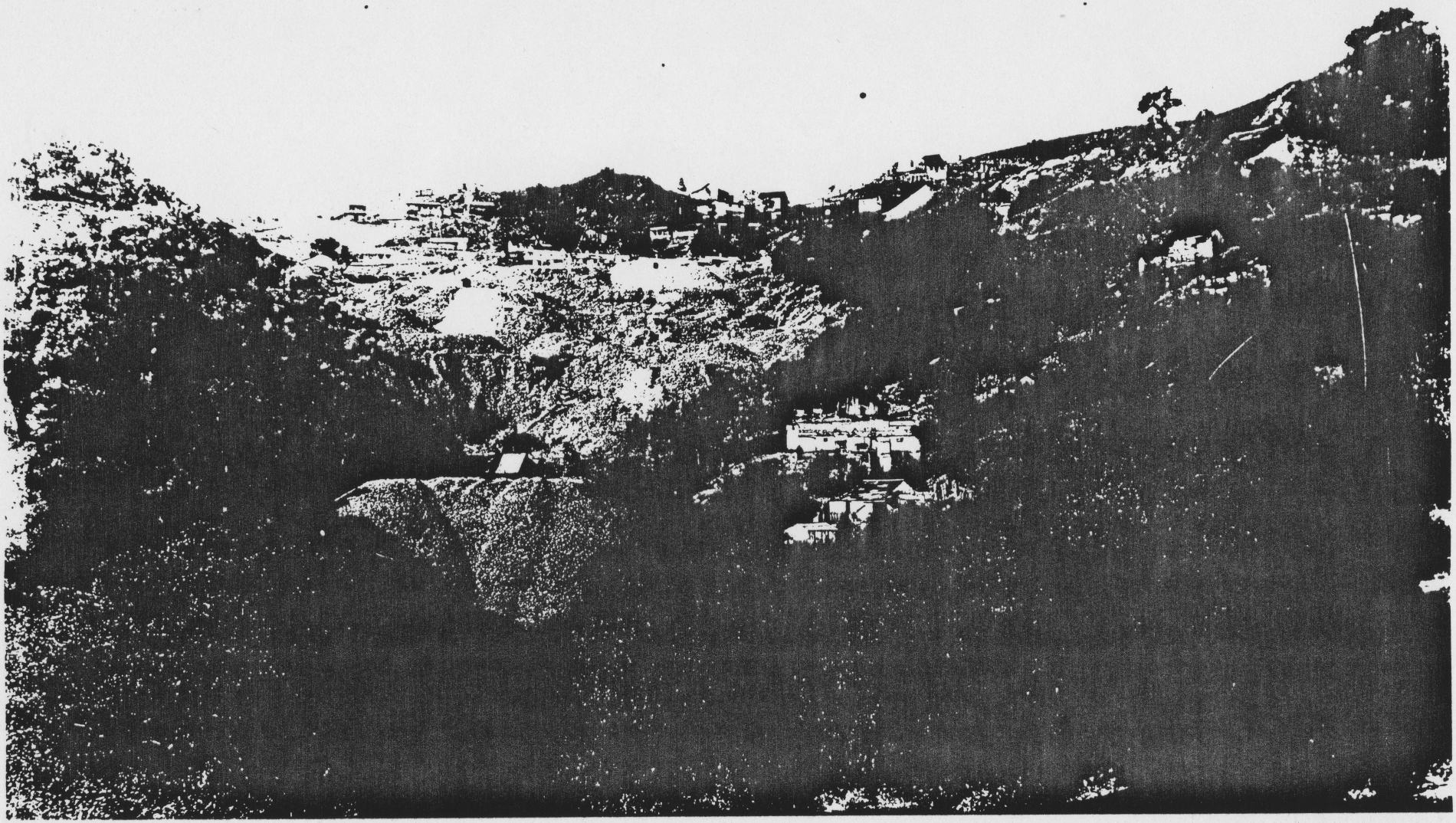
If you visit Cornwall in England's southwest you can hike up to Carn Brea, a medieval castle of square granite stones perched on a 600-foot hill. From that modest vantage point you can look out over the rolling countryside that was once famous for tin and copper mining; and on slopes that today are given over to pasture for cattle and sheep, you can see the abandoned brick pump houses of the long-closed mines. Below you are the streets of Redruth and Camborne, the very heart of the old mining country, and beyond the cities the northern bluffs that face the Celtic Sea. In the other direction, nine miles to the south, beyond a line of low, wooded hills, is the picturesque port city of Falmouth where the English first sighted the Spanish Armada and where, more than 170 years ago, hard-rock miners boarded boats that sailed to The Americas.

How small that hill must have seemed in the memory of a Cornishman who stood beside Los Alamitos Creek at New Almaden, lifting his eyes toward the peak of 3800-foot Loma Prieta. Even the hike up Deep Gulch to the mining camp, a climb of 1,600 feet along a trail of wheelruts and dung, showed him things he had never seen in Cornwall. If it was Spring he saw blossoms, wild patches of iris, poppies and flowering hollyhocks near washes or streams; or if it was summer he saw the brittle wild oats

clinging to the hillside. As he walked he may have noticed that coating his boots was an unfamiliar pinkish dirt that had worn from the Franciscian rock, so different from the heavy red dirt back home. Once he arrived at the primitive camp near the peak of Mine Hill he saw a California panorama--hard vertebrae of mountains stretching northwest to San Francisco, another range of hills across a broad brown plain to the east, and to the north blue-gray marshes and a bay that perfectly mirrored the color of sky.

While no one has fixed the date when that first Cornishman arrived, one thing is sure--he arrived years before James B. Randol, the very capable manager who directed the operation during its most prominent years in the 1870s and 80s, and who is generally credited with bringing Cornish miners to New Almaden.[1] Before Randol's authorative, though benevolent rule transformed a frontier mining camp into a paternalistic company town, a Cousin Jack was working in the bottom of the mine. The first Cornishmen came to work at New Almaden within a few months of the first skilled Mexican miners, and together they established the operation while sharing the hardship of mining and the isolation of life on Mine Hill. The arrival of these workers from two old and distinct mining traditions marked the beginning of mechanized mining, an epoch in California history.

1. A. C. Todd. *Cornish Miner in America: The Contribution to the Mining History of the United States by Emigrant Cornish Miners--the Men Called Cousin Jacks* (Truro, Cornwall: Barton; Glendale, Ca.: The Arthur H. Clark Co., 1967) 84.



The view from Deep Gulch of cottages on Mine Hill. (Courtesy New Almaden Museum)

2. TWO MINING TRADITIONS

THE MEXICAN

One cannot fully appreciate the Anglo-Mexican period, the earliest days of organized mining at New Alamaden, without appreciating the mining heritage of Mexico, a lineage that extends deep into European culture. "The Spaniard brought to Mexico rather more than the cross and the sword. He brought as well a mining tradition founded on the Carthagenian and Roman exploitation of the Iberian gold, copper, silver, mercury, and iron deposits."[2]

Mining in Mexico dated back three centuries before the discovery of California's quicksilver and gold. The Mexicans had been mining silver since 1521 and they invented metallurgical processes that were especially suited to the mining in the New World. In 1554 at the Real del Monte--Pachuca mining district near Mexico City Bartolome de Medina developed the process of beneficiation known as amalgamation by mercury which was given the familiar name of the *patio* process.[3] One of the first and greatest triumphs of industrial chemistry, it revolutionized techniques for recovering precious metals in those parts of the world where fuel and water were in short supply. The Mexicans also developed the *arrastre*, the horse-driven crushing mill which served mining interests in Mexico for centuries and which, though obsolete, was still used in Mexico and California at the time of the Gold Rush. As an authority on mining history expressed it, "the Mexican experience was three centuries of adapting

2. Otis E. Young, Jr., *Western Mining: An Informal Account of Precious-Metals Prospecting, Placering, Lode Mining, and Milling on the American Frontier from Spanish Time to 1893* (Norman, Oklahoma: U of Oklahoma P, 1970) 55-56.

Renaissance developments to a land rich in minerals but lacking much else."[4]

The mining method especially developed in Mexico was called *el sistema del rato,* which could be literally translated as "the system of the moment," but might more accurately be called the "pragmatic" or "empirical system." By this method mines were labyrinths of twisting passages; and shafts, rarely sunk, were sunk only by guess. Surveys were not made, maps were not drawn, and drifting (tunneling horizontally from a shaft) only occured when it became necessary to remove water.[5]

When European mining engineers came to Mexico they found conditions primitive by their standards and, scornful of all things indigenous, they willfully mistranslated *el sistema del rato* as "rat-hole mining." Still, the empirical system had justifications that foreigners may never have fully understood. Mexican mining had developed long before the 1791 publication in Europe of Abraham Gottlob Werner's **New Theory About the Origins of Lodes,** which revolutionized mining practices. Before that time the best mine surveying methods were only effective for lodes more shallow and less complex than those encountered in Mexico, and even after that time the system still suited the local lack of timber and capital. It should be noted, too, that *el sistema del rato* was not universal in Mexico. Some of the greatest mines, such as La Valenciana at Guanajuato, were laid out with monumental, even lavish attention to architectural appearance,

3. Robert W. Randall, *Real del Monte: A British Mining Venture in Mexico,* Latin American Monographs 26 (Austin, Texas: U Texas Press, 1972) 2.
4. Young 55 & 79.

incorporating the stone cutting skills associated with both the Aztecs and the Spaniards.

> Clearly the eighteenth century Mexican miner could hold his own with the best of Cornwall or Germany and all the nineteenth century accounts agree that the Mexican miners were courageous, enterprising, and remarkably ingenious, despite the fact that many (or even most) were illiterate."[6]

The Mexican tradition was not only characterized by its tools and methods, but also by its institutions. The *Colegio Real de Minera,* one of the oldest mining school in the world, was established in Mexico City in 1783 by Charles III of Spain especially to educate the sons of miners. There professors taught such courses as mathematics, drawing, French, and Spanish grammar in the first-year curriculum; algebra, surveying, dynamics and hydrodynamics in the second; and mineralogy, geology, and the elements of mining in the third; and in the fourth, chemistry and metallurgy were taught by a German professor named Louis Lindner[7]

Mexico may have kept up with the state of the art in mining as it developed in Europe had it not been for catastrophic events, including the invasion of Napoleon's forces, followed by Mexico's own revolution and the tumults of The Reform, which struck like a thousand earthquakes. Ten years of civil war, blood baths and wholesale slaughter destroyed what it had taken centuries to build. "Mine engineers, operators, administrators, miners, mercury men, and wagoners were all sent to the firing squads without trial," presumably because they were seen as

5. Young 79. 6. Young 85

7. Young 88. The Colegio Real de Minera is pre-dated only by the Mining Academy at Freiberg, in the former German Democractic Republic, which opened in 1765.



A MEXICAN MINERO

This miner has adopted the traditional Cornish lunch bucket. Courtesy New Almaden Museum.

servants of European masters.[8] Yet a Mexican mining tradition survived, and it was expressed at New Almaden in the expression, "The Mexicans had a nose for quicksilver."[9]

THE CORNISH

The Cornish brought a heritage to New Almaden that was no less illustrious than the Mexicans and is summed up in an old expression, "a mine is a hole in the ground with a Cornishman at the bottom."[10] The cradle of Cornwall's mineral wealth is granite, a symbol of strength in life and protection in death. The spine of the peninusla is formed by granite uplands and lesser outcroppings, such as Carn Brea hill. Around each granite margin is the metamorphic aureole, a ring of baked rock known locally as *killas,* where the richest mining districts are found. Traces of mining work can be found in virtually every parish of the county.

The early workings, dating back to between 1,000 and 2,000 BC, were for tin, washed from the gravels in stream beds or marshes or dug from shallow deposits. Underground mining as we know it probably started in the sixteenth century when lodes cropping out of cliffs were first explored around St. Just, the most westerly town in mainland England. While by the mid-twelveth century Cornwall was Europe's largest supplier of tin, mining for copper did not begin on a large scale until the latter half of

8. A. C. Todd, *The Search for Silver: Cornish Miners in Mexico, 1824-1947* (Padstow, Cornwall: Lodenek Press, 1977) 26-27.
9. I have heard this expression used by two authorities on New Almaden, Kitty Monahan, president of the New Almaden Quicksilver County Park Association, and Clyde Arbuckle, historian and author.
10. J. H. Trounson, *Mining in Cornwall, 1850-1960* (Redruth, Cornwall: Moorland, 1985) i.

the eighteenth century, reaching its peak of production a hundred years later. Other minerals mined in Cornwall include arsenic, lead, zinc, wolfram, silver, nickel, cobalt, bismuth, ochre, sulphur, barytes and fluorspar.

Perhaps the oldest evidence of mining activity is "the tinners way," a moorland footpath following a high granite ridge that was probably one of the original lines of communication in pre-history. Stone axes and other evidence suggest that the route was used for transporting minerals from the Bronze Age up until the 19th century, a period of almost 4,000 years. What once was part of a network of tracks connecting seashore villages with the country inland is today maintained as a hiking trail.[11]

The history of the mining industry in Cornwall in the past two hundred and fifty years is inseparable from the history of the pumping-engine since without pumps to remove the water mines cannot be worked. The improvement of pumps meant that ore bodies could be exploited deeper and deeper into the earth, making mining more profitable. Early shallow workings were drained by pumps driven by water-wheels, and it was not until the early years of the eighteenth century, following the introduction of the steam pumping engine by Thomas Newcomen, that steam power was used in mines. In 1769 James Watt patented his improvements on Newcomen's designs, making relatively low-pressure steam engines faster and less wasteful of fuel, which was important in Cornwall

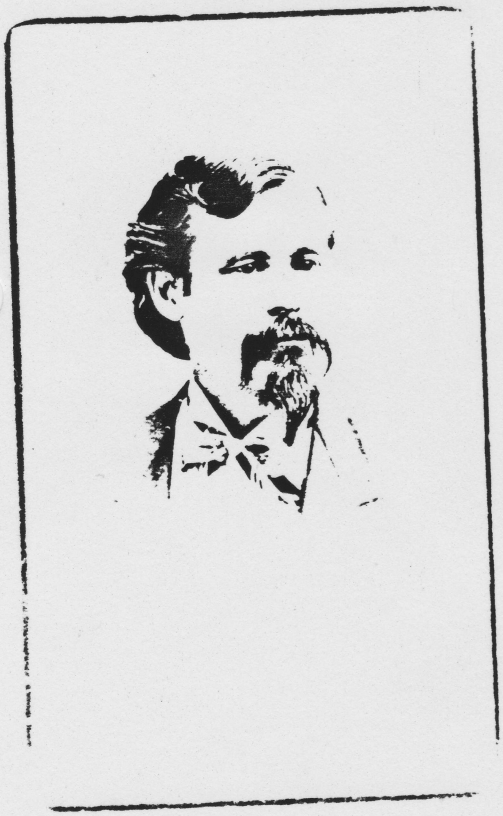
11. The Automobile Association and the Ordnance Survey, *Cornwall* (Great Britain: Purnell, 1987) 35. My wife Ilka and I have hiked such trails in Cornwall.

where there are no coalfields and fuel had to be brought from Wales.

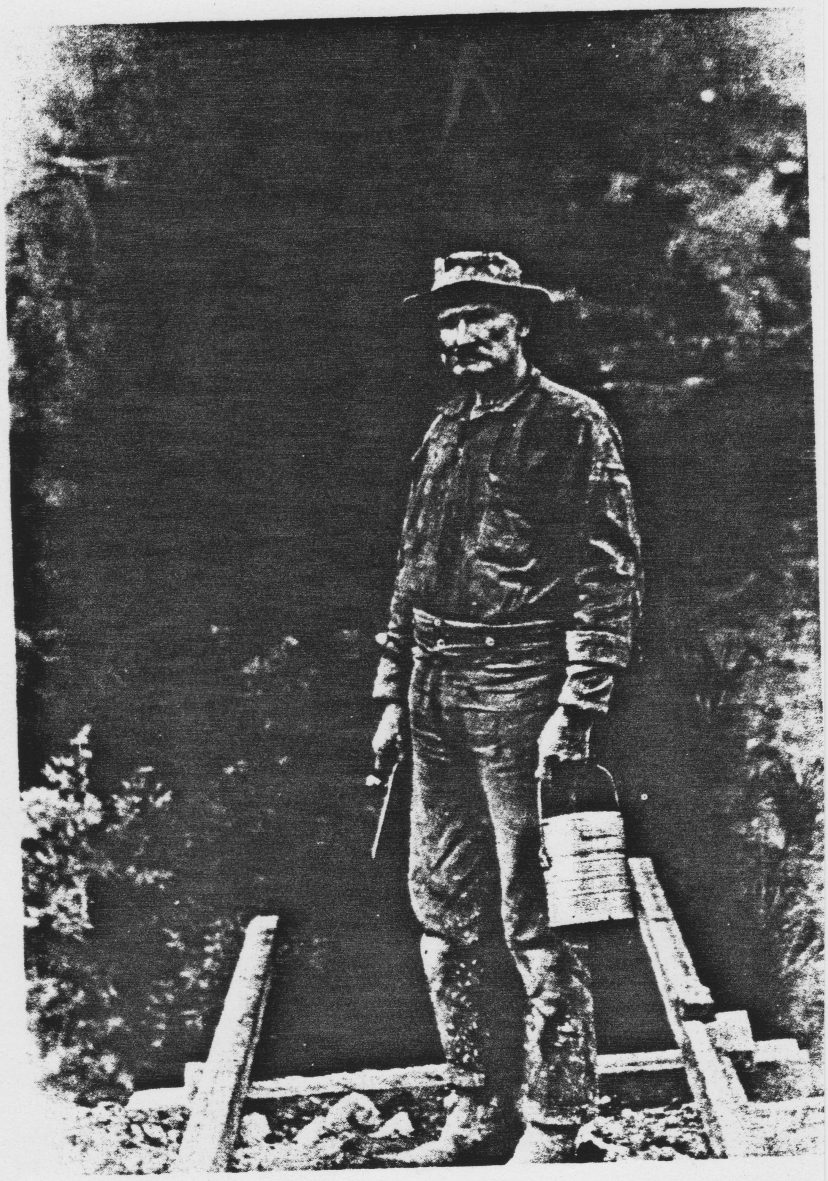
Later in the century Richard Trevithick, the son of a mining engineer from Illogan (near Redruth), was able to introduce smaller, lighter and even more efficient engines, replacing the massive engines that were currently in use. His design used steam under high pressure, "strong steam," and caused the steam to expand within the cylinder for maximum efficiency. These "puffer whims," as the miners called the new engines because they vented into the air, could be transported in an ordinary farm wagon and were first used for lifting ore from the tin mines. Later Trevithick attached one to a steam carriage, which he drove up a hill in Camborne on Christmas Eve 1801. In 1803 he constructed the world's first steam railway locomotive, and soon his engines were hauling miners, equipment and ore along newly laid tramways in Cornwall. With local engineers he also perfected the Cornish pumping engine, which was used in mining around the world. Quick tempered, impulusive and lacking in business skills, Trevithick died in poverty, but today he is remembered as a Cornish hero with a statue standing in front of the Camborne Public Library.[12]

Cornwall's great mining tradition was preserved in the institution of the Camborne School of Mines, one of the oldest institutions of its kind in Europe, and in the Cornish language which into this century was used where ever there was mining.

12. Trounson, i.



RICHARD HICKS
OF REDRUTH



A CORNISH MINER

Dr. A. Cecil Todd, the Cornish historian, wrote of the Cornish miner and his vocabulary--

> This claim to a special position in the hierarchy of the world's workers was perhaps justified since they were by far the most sophisticated exponents of the art of mineral extraction. Long ago they had solved all the practical problems of blasting, timbering, hoisting, flooding and ventilating. They had evolved a language that became a *lingua franca* in mining camps the world over: pits were shafts; shafts from one gallery to another were winzes; horizontal galleries excavated in mineral veins were levels; galleries in rock were cross-cuts; tunnels for drainage were adits; downward excavations were sinkings and upward excavations were risings. Ore that was deliberately left in the mine as an investment against future depressions was known as the "eyes of the mine"; and the process of extracting it was termed "picking out the eyes," a powerful poetic image.[13]

The skills of Cornish miners were recognized throughout Europe decades before any ventured to the New World. Probably generations before they dug for cinnabar ore at New Almaden, Cornish miners had mined for mercury in Spain. Yet, whatever ancient skills or instincts he brought over the seas from the rocky peninsula his ancestors' called home, the Cornishman still had to adapt his skills and technology to the rugged conditions of the American West. That is why Dr. Todd also wrote, "the Cornish had as much to learn from the Mexicans as the Mexicans from the Cornish."[14]

3. PATTERNS OF CORNISH IMMIGRATION

When describing the sizeable Cornish population at New Almaden historians have emphasized the exodus from Cornwall that

13. Todd, *Cornish Miner* 16.
14. Todd, *Search for Silver*, 63. That goes equally well for German and Austrian, who brought the heritage of ancient Saxon mining to New Almaden.

began in the mid-1860s when the collapse of local mining made economic conditions untenable. As **Cinnabar Hills** expresses it, 'For the clannish, conservative Cornishman, the departure from his native soil, where his people had mined tin and copper for a thousand years, was a momentous decision of speculation.'[15]

While that was certainly true, it was also true that the emigration of the 1860s (through the 1890s) was part of a continuing pattern of Cornish emigration that had begun forty years before.

> "The great exodus of the 1880s from towns and villages along the spine of Cornwall is first discerned as the sound of the distant rumbling of wagons in the 1840s down the rough roads and tracks from Camborne and Mullion to the nearest seaport of Falmouth, from where the mail-packets sailed weekly to New York."[16]

Bleak conditions in Cornwall during the 18th and 19th centuries had gaven miners plenty of motivation to leave (see Appendix II). Even in the best of times the life expectancy of a miner was less than forty years, health conditions were deplorable, wages were cruelly low, and the likely prospect for a miner who was injured on the job was the poorhouse.

> "Many were the reasons that drove them away: high rents, scarcity of labour, the unrewarding returns from the cultivation of marginal land, and increases in the poor rate and general taxation. Perhaps the most important of all, they were tired of England and its class distinctions and hatreds; some openly talked of Cornwall as a 'land of bondage' and only desired to taste the liberty that, from their own reading, they presumed existed in America. Politically and socially they were already to some extent Americans even before their ships left Falmouth."[17]

15. Milton Lanyon and Laurence Bulmore, *Cinnabar Hills: The Quicksilver Days of New Almaden* (Los Gatos, California: Village Printers, 1967) 63.
16. Todd, *Cornish Miner* 21.
17. Todd, *Cornish Miner* 20.

The economic situation perhaps made it easier for a Cornishman, but so did the fact that many of them were following after brothers or cousins who had gone before. Mining superintendents from Redruth and their assistants began trickling away to manage silver mines in Mexico as early as 1820s when vessels traveled weekly between Falmouth and the eastern Mexican port of Tampico. In the 1830s the Poor Law Commissioners worked out a scheme to assist passages to Canada. By far the most telling event that was to speed up the whole process of emigration was the British depression of the 1840s, the "hungry forties," when grain shortages brought on a rocketing cost of living and tight money.

> "The census of 1841, the year when parishes were first asked to furnish information about emigration, revealed that from January to June 795 people, or 2.3 per 1,000, had departed from Cornwall. They were mostly miners from Camborne and Redruth intent on reaching the lead regions of southwest Wisconsin. . . ."[18]

The decreasing cost of trans-Atlantic travel, which dropped from L12 in 1816 to L6 in 1843 and just L3 in 1846, further encouraged the adventuresome to seek new lands and richer deposits, and once in America many of them continued westward to mine for quicksilver and gold.[19]

4. 'ENGLISH' MINERS AT NEW ALMADEN

Shortly after the first Mexican miners arrived with their hammers and drills, and several months before gold was discovered at Coloma, Cornishmen were almost certainly among the first

18. Todd, *Search for Silver* 128 and 135. Also Randall 52.
19. Todd, *Cornish Miner* 21.

Anglos working at New Almaden. To understand how they became part of that early contingent of skilled workers, we must back up to Captain Andres Castillero's remarkable discovery.

Early in 1845 the Mexican army captain was in Alta California on business for his government. Having attended the College of Mines in Mexico City and so having a developed interest in mining and mineralogy,[20] Castillero took a little cart out to New Almaden during his stay and gathered ore samples. In late November or early December of 1845 he dined with Padre Real and others at Mission Santa Clara, and after dinner he amazed his companions, as one of them recounted:

> Our general conversation through dinner was about this mine, and of experiments which Castillero had beeen trying, to find out what the mineral was. He made a remark, and said he thought he knew what it was; if it was what he supposed it was, he had made his fortune. We were anxious to know what it was. He got up from the table and ordered the servant to pulverize a portion of this ore; after it was pulverized he ordered the servant to bring a hollow tile full of lighted coals; he took some of the powdered ore and threw it on the coals; after it got perfectly hot he took a tumbler of water and sprinkled it on the coals with his fingers; he then emptied the tumbler off and went to the light to look at it; then made the remark that it was what he supposed it was, 'quicksilver.' He showed all who were there the tumbler and we found that it was frosted with minute globules of the metal, which Castillero collected with his finger and said it was quicksilver. He then said: tomorrow he would test it thoroughly and find out what it was worth, he considered it very rich on account of the weight of the ore, and if it proved as rich as the quicksilver mines in Spain, that the Mexican Government had offered to any one for the discovery of such a mine in the Republic of Mexico, one hundred thousand dollars.[21]

Making no secret of his discovery, Castillero sent letters

20. Joseph Warren Revere, *Naval Duty in California* (1857, Oakland, California: Biobooks, 1947) 55.
21. U. S. v. Castillero, Vol. II, 1102. Quoted in Leonard William Ascher, "The Economic History of the New Almaden Quicksilver Mine, 1845-1863," diss., U of California, Berkeley, 1934, 8.

and samples of the ore to General Mariano Vallejo and Pio Pico, Governor of California.[22] With ten to twelve Indians and two white men doing most of the work, he initiated development of the quicksilver mine beginning in the fall of 1845 and continuing to the following April, supervising the work himself. He then returned to Mexico where he consulted with Mexican and British capitalists about the further development of the mine, leaving two Indians and a superintendent to work the twenty-five-foot long tunnel that had been dug.[23]

Among the capitalists who Castillero consulted was Alexander Forbes, British vice consul in Tepic, Mexico, and at that moment the active partner of Barron, Forbes and Company, a firm that operated a cotton mill and showed an increasing interest in mining investments during the 1840s. As well as investing in New Almaden, the firm also became an investor in the famous Real del Monte silver mine near Pachuca, Mexico.[24] There is no way to know, but one can imagine that the Mexican army captain and Forbes discussed the war that had broken out in April 1846 between Mexico and the United States along the Texas border, and that would soon involve California.

Early in 1847 the British firm ratified an *avio* contract, best translated as "a contract to supply and work the mine."[25] It was just a beginning for the British capitalists as Joseph

22. U. S. v. Castillero, Vol. ii, 1102, 2603 and Vol. III, 1806. Also quoted in Ascher 7-8. An assay of the ore was made at the *Colegio Real de Minera* under the supervision of the director, Ramon del Moral. Castillero, letter to Ramon del Moral, director of the College of Mining, February 19, 1846, quoted in U. S. v. Castillero, Vol. III 1784.
23. U. S. v. Castillero, Vol II, 540 & 1068. Also quoted in Ascher 26 & 27.
24. Professor Randal, telecon with author, January 28, 1919. They invested when the mine was reorganized in 1849.

Warren Revere, a U. S. Navy Lieutenant recounted in his California memoir:

> The commercial house transacting business in Tepic, under the name and style of Barron & Forbes, is a shrewd establishment with a vigilant eye to the main chance. Little cared they who governed the country, what faction was up to-day or down to-morrow; their thoughts were intent on the quicksilver, and they commissioned a score of Mercuries to get hold of it in their behalf and at their expense.[26]

Within a short time Barron & Forbes held controlling interest in the quicksilver mine. Castillero and the other Mexican owners must have had little hope of being able to work the mine themselves with California now under United States control, nor were they likely to think that Americans would feel obliged to give them a fair price for their holdings. Clearly their best opportunity was to get what they could from the property by selling to a British firm that would be able to operate under the new government.

By the Spring of 1847, with the Mexican owners relegated to the wings and all mining having ceased at New Almaden, the stage was ready for a new cast of characters.[27] Again Lieutenant Revere told the story:

> . . .the opulent and sagacious firm at Tepic, who acquired the ownership or control of the whole mine, and sent up Mr. Alexander Forbes with English miners from the unproductive silver mines, and bought up all the empty *"frascos"* (cast iron flasks), which they could lay hands on. The first vessel they sent was the brig *William,* under English colors; but as she was proved to be a Mexican vessel, she was condemned by our admiralty court at Monterey, sold in pursuance to the sentence of that tribunal, bought in by the owners, and

25. Ascher 18-24.

26. Revere 44. Regarding the *Californios'* attitudes toward the British and the Americans, see Walton Bean, *California: An Interpretative History* (McGraw Hill: New York, 1973) 92.

27. U. S. v. Castillero, Vol, ii, 985. Also quoted in Ascher 31. Reportedly in the Spring of 1847 there was only one Indian left at New Almaden.

> sent directly back by those enterprising men under neutral colors, having been purged of her Mexican character by the little formalities exacted by the admiralty.[28]

Two years after these events, the Rev. C. S. Lyman, who had been designated as the new American governor's official surveyor in Alta California, gave a fuller account of the arrival.

> About two years ago it [the New Almaden mine] fell into the hands of Barron, Forbes & Company, who sent on hand tools and funds to commence working it. Unfortunately the vessel fell into the hands of the United States forces, and was confiscated; the operations of the mine were of course delayed till the arrival of Mr. Forbes himself a few months since, with miners, tools, and whatever things he was able to procure in Mexico, to enable him to make a fair experiment on the capabilities of the mine. The great trouble was to obtain suitable apparatus for extracting the ore. At length four potash kettles were found, which were set in a furnance of adobies, with condensers of mason-work immediatley adjacent--a wretched apparatus indeed for managing so subtle a thing as mercurial vapor. Between 15,000 and 20,000 pounds have been extracted in about two months, only six miners having been employed in digging the ore, and the hands of the establishment, all told, miners, furnance men, wood-choppers, & c. & c, numbering only a score. The mine is probably yielding a net profit of $100,000 a year, with its present crude apparatus. With suitable furnances and iron cylinders or retorts, the mine would easily yield $1,000,000 and upwards. Mr. F. sails to Europe shortly for the apparatus necessary. The bed has as yet been followed but a few hundred feet, but the ores grow more and more rich and abundant.[29]

So by 1848 Barron, Forbes and Company had control of the mine and were well underway employing the iron, steel, blasting powder, mining tools and skilled miners they had brought from Mexico. Having bought back his own ship after the Americans had confiscated it, Alexander Forbes himself arrived on board the vessel when she returned to Monterey on September 30, 1847.

28. Revere 45, emphasis mine. The *William* arrived in Monterey on March 27, 1847. The fullest account of the circumstances surrounding the confiscation are found in *The Californian* newspaper, April 10, 17 & 24, 1847.
29. The Rev. C. S. Lyman, letter to James D. Dana in *American Journal of Science and Art*, Conducted by Professors B. Silliman, Jr., and James D. Dana. Second Series. Vol. VI. November 1848. New Haven: Printed for the Editors by B. L. Hamlem, Printer to Yale College. Bound in the "Pamphlets on New Almaden" in the Bancroft Library, University of California, Berkeley.

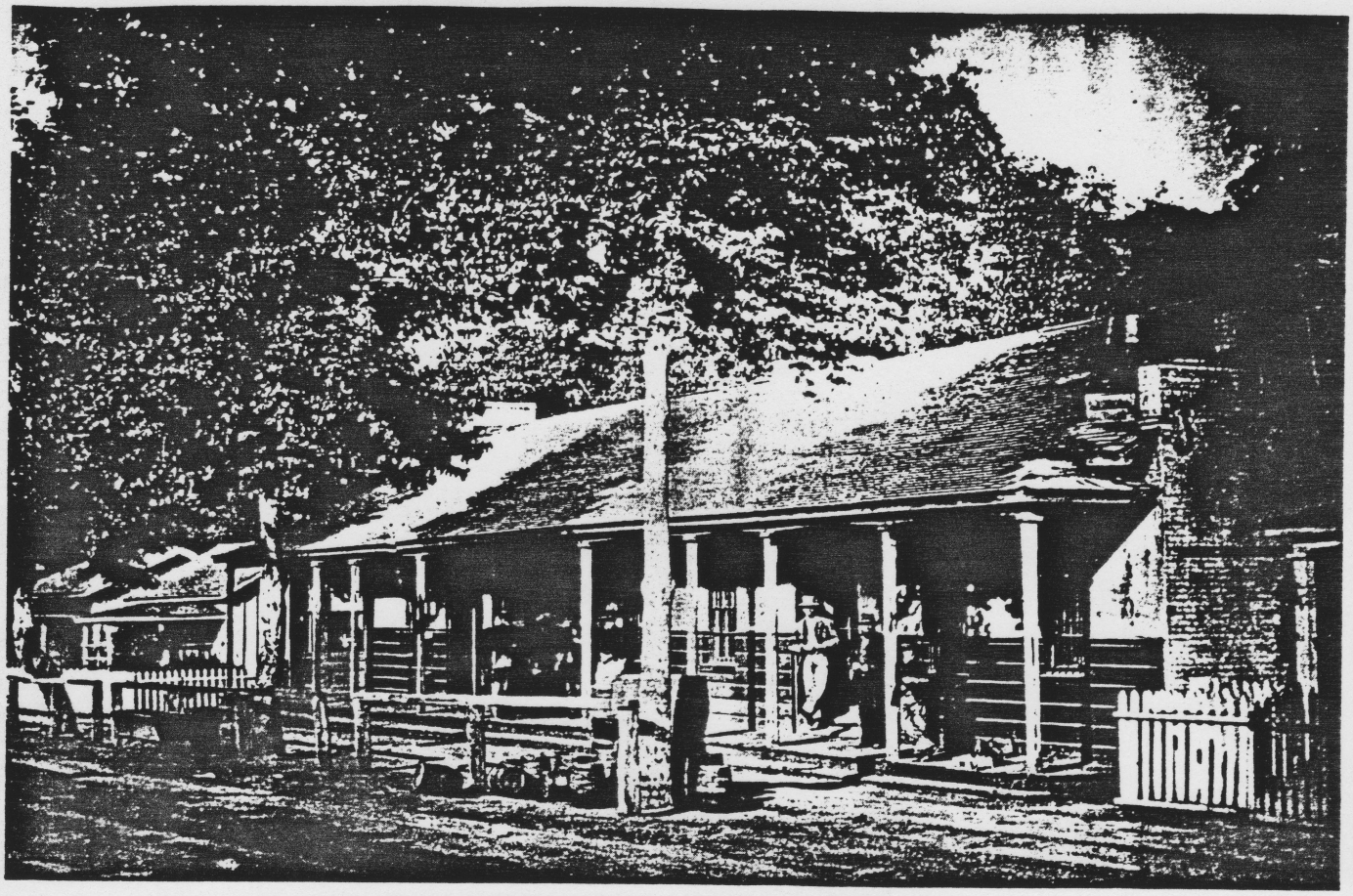
Additional miners came on *The Cayuga*, which arrived late in 1847 or early in 1848.[30]

While accounts of the brig *William* indicate that its master, Miguel Asconi, and its crew were Mexican, I found no account of the *William* or *The Cayuga* that indicated the nationalities of the miners on board. There is no question, though, that the first skilled miners employed in the quicksilver mine were Mexicans. Some years later Lyman testified about his experience in February 1848 when he had surveyed the mine property.

> Q. Please state what improvements were on the land when you made the survey of it.
> A. There were works on it for extracting quicksilver, embracing four furnaces, and there were between twenty and thirty men at work on it. The miners were Mexicans; the other hands at work were principally Americans.
> There was a store house of considerable extent, where the quicksilver and some goods were kept.
> There were four or five lodging or boarding houses. The principal house was occupied by Mr. Forbes for an office and lodging places.[31]

About the time Lyman was making his surveys Barron, Forbes & Company began opening accounts in the names of various Anglos at a company store it operated from a small adobe warehouse near the New Almaden Hacienda[32] In an entry dated January 10, 1848, David Hammaker is the first name to appear in the "Account Book of Employee Purchases" which I located in the Special Collections of the Green Library at Stanford University (For complete listing see Appendix III). He was joined late that month by Jeddiah

30. Alexander Forbes, letter to James Alexander Forbes, 1 October 1847. Quoted in Ascher 32; also see 37. Alexander Forbes returned to Mexico late in '47 and returned to New Almaden early in '48.
31. U. S. v. Castillero, Vol.1, 11. Also quoted in Kenneth M.Johnson, *The New Almaden Quicksilver Mine* (Georgetown, California: Talisman Press, 1963) 29. In June 1848 William Tecumseh Sherman visited the area and noted "quite a number of Sonoran miners blasting and driving." W. T. Sherman, *Memoirs* (New York: Appleton & Co., 1857) Vol. 41.



The general store in the Hacienda as it appeared in 1885.



The general store as it appeared in 1937.

The company store where employees were opening accounts as early as 1848.
(Courtesy of New Almaden Museum)

Cobb. As Lyman was completing his work in March, five new accounts were opened in the names of William Bashure, Henry Grower, William Anderson, Thomas Parks and Thomas Lumberson. Judging from the account books, seven more Anglos came to work at New Almaden around July and August, and the biggest influx was in November 1848 when sixteen new accounts were opened. In total, thirty-nine accounts were opened by Anglos in 1848 and fifty-two in 1849.

How these employees came to New Almaden is largely a matter of speculation, and one can only offer an educated guess. They may have come from areas surrounding Tepic and San Blas (the nearest seaport to Tepic), as did some of the early Mexican miners, or they may have come from the Real del Monte silver mine in Pachuca, where Cornish miners had worked since the mid-1820s, or from other mining districts where the Cornish had dispersed.[33] Such speculation is based on the fact that Alexander Forbes was acquainted with the Real del Monte and that he took a Mexican capitalist named Mr. Escandon as a partner in the New Almaden operation. Escandon's primarily interest was the Real del Monte.[34]

It would have been an opportune time to recruit miners from that mine because it faced serious financial difficulties in the mid-1840s, and its operations were temporarily suspended in March 1848. It may be, too, that the quicksilver mine needed Europeans to operate equipment since, no doubt because of prejudice,

32. For this brief description of the building that housed the store I am indebted to Francisco Valencia, "New Almaden and the Mexican," masters thesis, San Jose State University, 1977, 71.
33. California Census 1852, 69; Todd, *Search for Silver* 36 & 130-1
34. Randall 210; also Ascher 22-23; also Revere 56.

Mexicans did not operate steam pumps or other equipment in the Mexican mines and so had no experience.[35]

If these are the same "English miners" that Revere said came to New Almaden, however, it is not obvious from their names. None of the names are unquestionably Cornish, with the exception of Jacob Crouse, who arrived in November 1848. But as the Cornish historian A. L. Rowse has pointed out, most Cornish bear common English surnames, such as Williams, Johns or Thomas, and in much the the same order of popularity as English people. Only a minority bear Cornish names from the old Celtic language, such as Trevelyan, Polglase or Penrose, which are immediatly recognizable.[36] While none of the names then are distinctly Cornish, although many could be English, others--Schuller, Shindler and Heinlen--are German. So although there were apparently a number of Anglos helping to develop the New Almaden mine, and it seems very probable that a portion of them were Cornish, there appears to be no precise way to tell.

The actual accounts give no clues about the identity of the employees (although they drank a lot of tea). The common items purchased were tobacco, coffee, tea, whisky, muslin, gloves, boots, tools, potatoes, eggs, butter, and several general categories including "goods," "trimmings," "sundries" and "summer stuff." Payment was accepted in eggs and butter as well as in cash. In a few cases accounts were in the names of women, including Margaret Bickel, Leah Prefler and Widow Paefer.

The one thing that is clear about the first skilled miners in Santa Clara County is that they were highly effective. In only

35. Todd, *Search for Silver* 147-9; also Randall 127.
36. A. L. Rowse, *The Cousin Jacks: The Cornish in America* (New York: Scribner's, 1969) 427.

a few months, an observer reported in March 1848, eight or ten miners working at the quicksilver mine produced more than one thousand quintals (approximately 220,000 pounds) of mercury.[37]

As obviously as it shows the arrival of Anglo employees, the account book also indicates departures, and in the year when the discovery of gold was announced the Anglo miners were not destined to stay. Nearly every account that was opened in 1848 was closed late in the year or early in '49. Many accounts opened in 1849 showed only one transaction, and it appears that nearly all of the accounts were closed by summer. David Hammaker, for example, closed his account in March 1849. William Anderson, who opened an account in March 1848, made his last purchase in December and paid off the balance three years later. Alfred Cobb opened his account in November 1848 and only made purchases until December when he apparently left New Almaden, leaving three brothers behind. Within a few months they had all left, too. With employees apparently leaving the mine with such regularity perhaps only twenty or thirty were employed at any one time.

What the account book suggests is consistent with a report in early 1849 from Thomas Larkin, American counsel at Monterey, who said that the miners were leaving New Almaden for the gold fields[38] A collaborating report was also written from New

37. M. Gasquet, French consul in California, letter to the French Minister of Foreign Affairs, dated Monterey, California, March 15, 1848, from the manuscript of Mr. Nasatir as quoted in Ascher 34-35. A quintal equals approximately 200 English pounds or 100 kilograms.

38. Thomas O. Larkin, *Official Corresponence* (manuscript in the collection of the Bancroft Library) vol. VI, No. 74; quoted by Ascher 37. This letter does not appear in *The Larkin Papers: Personal, business & Official Correspondence of Thomas Oliver Larkin, Merchant and United States Consul in Californa*, ed. George P. Hammond (Berkeley & Los Angeles: U of California P, 1951).

Almaden by James Alexander Forbes (no relation to Alexander Forbes), assistant British consel in Alta California who was temporarily responsible for the quicksilver operation. His letter also praised the work of the miners:

> The work of the operatives you sent up in the first voyage of the *Cayuga* will always be useful. Those people will doubtless wish to go to the placer [gold diggings] in the spring. Your information respecting Alden is incorrect, he has <u>not</u> been instrumental in detaining the people at the mine. I myself had great trouble by persuasion and threatening to keep the barreteros from going, and at the request of Mr. Walkinshaw was present at their new agreement with him to work by the 'carga.' But Alden is an efficient man if he be properly governed. He had no reason of complaint, for you have done more for him than any other man would have done; and if he studies his own true interest, he will not abandon your service. The foreign workman left the mine by advice of Alden, and he himself would have left had he not been awaiting the arrival of his family.[39]

The 1850 census suggests that several of those who had worked at New Almaden were in the Sierra foothills working placer claims in Placer, El Dorado, Yuba and Tuolumne counties, but where they went from there is unclear. The only one to return to New Almaden was John Caldwell, a Scottish miner, who was living on Mine Hill with his wife Mary in 1860. Where ever the fortunes of mining took them, the gold rush brought to a close the first chapter of Anglo, and in all probability Cornish, mining at New Almaden.[40]

39. James Alexander Forbes to Alexander Forbes, Santa Clara, January 13, 1849 in U. S. V. Castillero, Vol. IV, pp. 3050 ff; quoted by Ascher p 37.

40. Recently Dr. A. C. Todd ventured his own educated guess about these early employees at New Almaden. After commenting that only "Crouse" seemed remotely Cornish, he wrote: "I remember that by 1847 Real Del Monte was running down until placed under new management. I imagine that was why Barron, Forbes & Co. was eager to entice the Cornish to New Almaden. They were high skilled and hard-rock miners. Yet I suppose that the call of placer mining was too much for them and they went to places like Placervile and disappeared almost wihout trace, some finally pushing off even to Australia." Letter, A. C. Todd to author, 12 February 1991.

5. CORNISHMEN IN THE GOLD FIELDS

The arrival of many Cornish in California in 1849 anticipated a second chapter in Cornish mining at New Almaden. Some of the first to appear were Wisconsin Cornish who crossed overland as soon as they heard of gold discoveries. The news reached Cornwall more quickly than it reached some parts of the United States, and a personal account of a miner in California appeared in the **Royal Cornwall Gazette** in January 1849. In 1850 a company was organized in the western mining parish of Breage to send parties to California, and reportedly a substantial terrace of houses in the parish was built from the proceeds of California mines. A casual review of the 1850 census for counties of the Sierra foothills show a liberal sprinkling of Cornish names, such as Thomas Trevithock in Tuolumne; O. C. Polley, (first name unknown) Petitgrew and William Pennon in Yuba; Francis and Jason Trevilcock, Thomas and William Rowe, Edward Penberthy, John Penman, Mark Polfryman, Josiah Tremillen, and Ambrose Treganowan in El Dorado. One of my ancestors from Redruth with a name that is not distinctively Cornish, Thomas Hicks, was working a claim along Mathinias Creek near Placerville.[41]

Some of the first Cornishmen in California came north from Mexico and, along with the Mexicans from the silver mines of Sonora (Mexico), they were some of the first real miners in the gold fields. Probably one of the earliest was a Cornish miner named Uren, who worked at the Real del Monte in Pachuca. He asked the mining company to pay him twenty-six pounds due to him

41. John Rowe, *The Hard-Rock Men: Cornish Immigrants and the North American Mining Frontier* (Great Britain: Barnes & Noble, 1974) 96-101. Also Todd, *Cornish Miner in America* 22. Also 1850 U. S. Census.

after the accidental death of his son, Thomas, so that he would make the journey north.[42]

During his three years in the California goldfields J. D. Borthwick came across several Cornish miners in Hangtown (Placerville) in 1852 who told him that they had originally worked the Mexican mines. Brothwick reported that "two Cornish miners had got what was supposed to be the most likely claim, and declared they would not take ten thousand dollars for it," but he wanted it understood that they had nothing over the adaptable Americans.

> The Cornish miners, of whom numbers had come to California from the mines of Mexico and South America, generally devoted themselves to these deep diggings, as did also the lead-miners from Wisconsin. Such men were quite at home a hundred feet or so under ground, picking through hard rock by candle-light; at the same time, gold mining in any way was to almost every one a new occupation, and men who had passed their lives hitherto above ground, took quite as naturally to this subterranean style of digging as to any other."[43]

The first gold discoveries in California had been alluvial or placer deposits, similar to stream tin workings in Cornwall. They were "poor men mines," affording mineral that could be worked by individual laborers or, more generally, by small partnerships of two or three working miners. During this period the skilled Cornishmen were seen as competitors, although they were not persecuted, as were the Sonoran miners who were chased

42. Todd, *Search for Silver* 150. Dr. Todd has pointed out that not all Cornishmen in California were miners. "Only last week I saw several letters from two brothrs in Penzance who were writing from the California Trail in 1850 and heading for the Sierras--and they were not miners--but pawn brokers!" Letter, A. Cecil Todd to author, October 6, 1990.

43. J. D. Borthwick, *Three Years in California* (1857; Oakland, CA.: Biobooks, 1948) 112-114. Also mentioned in Todd, *Search for Silver* 131.

from their claims.[44]

By the summer of 1851, however, the heyday of the placer mine was over, and the quartz mine had become the new basis of the industry.[45] Such hard-rock mines called for a different type of miner--one who was not interested in prospecting for himself and getting rich quick--but who was willing to work for wages. In the Southern mines of the Sierra the burden of work fell on the Mexican miners, who were the first to go into quartz mining.

> In fact, the only successful quartz miners as a group were the Mexicans; they were willing to take the special pains that made success in this type of mining too slow for most Americans. They used the arrastra, and worked only the richest bodies of ore. Profits came slowly, but with experience in the observation of quartz, and a mode of working in which failure was almost impossible, these Mexicans frequently did very well.[46]

Much of what Morefield said of the Mexican experience applies to the Cornish as well. There were plenty of Cousin Jacks who worked solitary diggings, especially on the Mojave desert. They succeeded as a group, however, in places where they were employed by large mining concerns, such as in the Northern mines around Grass Valley and Nevada City. They, too, were willing to work underground for wages, as they had for generations in Cornwall.

44. Richard Henry Morefield, "Mexicans in the California Mines, 1848-53," *California Historical Society Quarterly* XXXV (1956): 37-46.
45. Morefield 41. Also F. D. Calhoon tells a humorous story of how George McKnight discovered quartz mining on Gold Hill in Grass Valley, California, in October 1850. See his *California Gold and the Highgraders* (Sacramento:Cal Con Press, 1988) 137-167.
46. Morefield 43.

6. THE CORNISH RETURN

A miner who would work for wages was the kind needed at New Almaden, where almost from the beginning a company was involved in developing the property. As early as September 1849, as Anglo miners were leaving, the mine was advertising for Hispanic employees of "good conduct":

> VISO LOS HISPANO AMERICANOS
> A de buena conducta que quisieren dedicarse a un trabajo productivo y tranquilo lo encontraran en la Hacienda de la mine de asogue de Nuevo Almaden. Ocurrant a DIEGO ALEX. FORBES, in Santa Clara.[47]
> [NOTICE TO HISPANIC AMERICANS
> If you are of good conduct and want to commit yourself to productive work in a tranquil setting, you will find it at the Hacienda of the quicksilver mine at New Almaden. Contact JAMES ALEX. FORBES, in Santa Clara.]

By 1851 the mine was in full operation, employing some 200 workers, and in 1852 a visitor reported that all the workers were either Mexicans or Californians.[48] By 1854, however, Cornishmen were back, according to W. P. Blake, a man of mining interests who visited the operations early that year.

> An adit level has been run in for 900 feet, cutting the old workings about 200 feet below the former entrance to the mine; this adit is 10 feet by 10 feet, and is well timbered. A railroad of 4 feet gauge has been laid down throughout its length, and all the ore and refuse rock of the mine is brought out in cars that are weighed as they pass the office of the mine, and pass to the dressing floors, or to the attle heap.
>
> The mining is principally performed by Mexicans and by Yaqui Indians. They are from the Gulf of California, and are of the same tribe that are employed in the pearl fishery. They make excellent miners, and endure much hard work. <u>One or two Cornish men had recently commenced work.</u>
>
> The drilling is all done with long, heavy drills,

47. *Alta California* Sept. 20, 1849: 4.
48. Bartlett, *Personal Narrative of Explorations and Incidents in Texas, New Mexico and California* (New York: Appleton & Co, 1854) Vol. II. 63; quoted by Ascher 46.

> and the hammer is not used. I saw one bed of cinnabar about 8 feet thick, into which a powerful Yaqui Indian was drilling a hole; the crimson vermillion mixed with water was flowing from it in a stream and bespattering the surrounding surfaces. It is really delightful to see such quantities of beautiful ore as are displayed in this mine.[49]

One of the Cornishmen to arrive in '54 was William Grey, who worked his way up to become superintendent from 1873 to 1880.[50] Another, if his recollections were accurate, was William L. Pearce, who said that he worked at New Almaden for fifteen years before quitting in 1869 to buy a ranch in Los Gatos. He could not remember where he was born, but vaguely thought the place to be "twenty miles east of Land's End," which would be in the neighbourhood of Redruth and Camborne. As a boy he worked under ground at old Balleswidden mine near St. Just. He emigrated to America in 1848, working first in the Bristol copper mines in Connecticut, then in the lead mines of Wisconsin, and later in the gold mines of William Creek, British Columbia, before finding his way to the Santa Clara Valley. In 1864 his son, Dick Pearce, was the first Anglo child born on Mine Hill. [51]

7. MEN AND MECHANIZATION

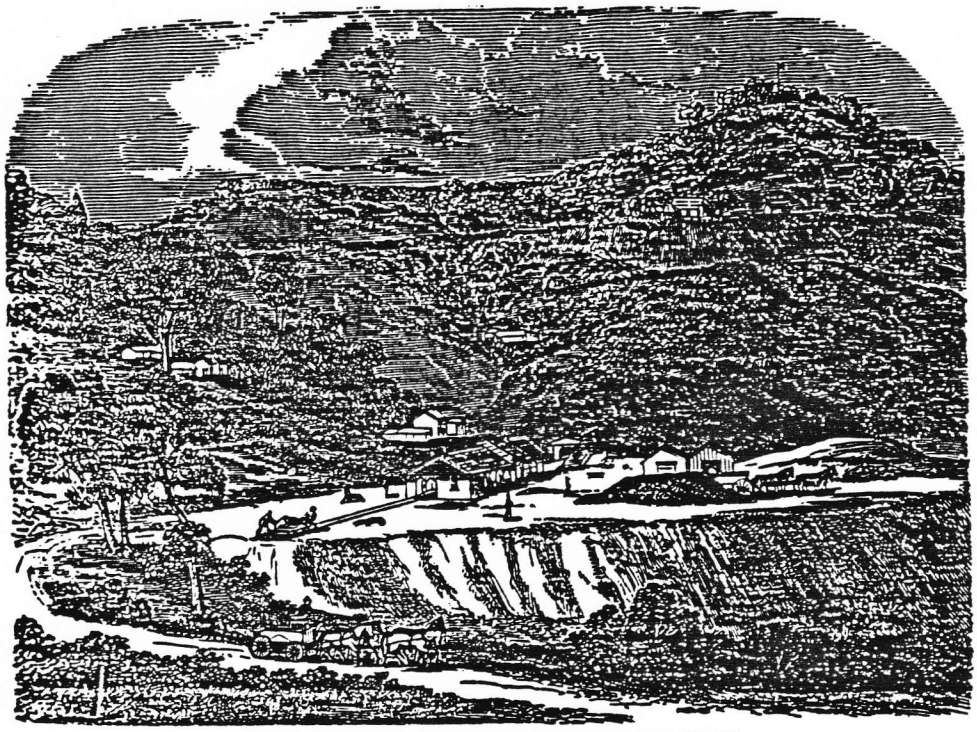
Among the early visitors to Mine Hill were two journalists, Mrs. S. A. Downer, who visited late in the summer of 1854, and W. V. Wells, who visited in 1857. Neither of them shared Lyman's technical understanding of mining, and neither of them noted the presence of Cornishmen or nationalities other than the Mexicans

49. W. P. Blake, "Letter to J. D. Dana, San Francisco, February 14, 1854." *The American Journal Science and Arts*. 2nd Series, Vol. XVII, 437-440; emphasis mine.
50. Valencia 50.
51. Todd, *Cornish Miner* 85-86. I am grateful to Clyde Arbuckle for telling me Dick Pearce's story.

HUTCHINGS'

CALIFORNIA MAGAZINE.

VOL. I. SEPTEMBER, 1856. NO. III.



METAL YARD AND ENTRANCE TO THE MINE.

THE QUICKSILVER MINE OF NEW ALMADEN.

Sixty-five miles south of San Francisco, near the head of the beautiful and fertile valley of San Jose, and in an eastern spur of the coast range of mountains, is the quicksilver mine of New Almaden.

With your permission, kind reader, we will enter the stage as it waits on the Plaza, and as the clock strikes eight, start at once on our journey. Lucky for us, it is a fine brght morning, as the fog has cleared off and left us, (on a dew-making excursion no doubt, up the country) and as we are to be fellow travellers—at least in imagination—and wish to enjoy ourselves; while the stage rattles over the pavement, and rumbles on the wood planking of the streets, let us say "good bye" to our cares, as we did to our friends, and leave them with the city—behind us.

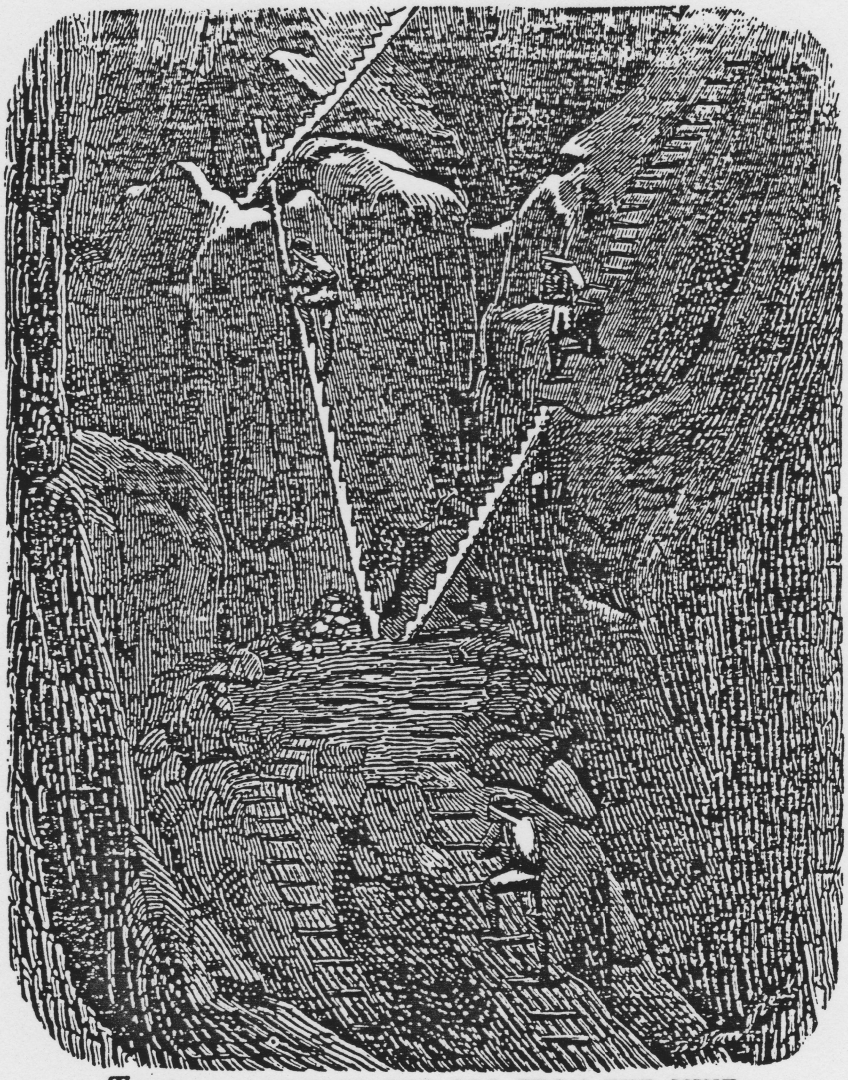
An early account from the collection of

the New Almaden Museum

they so colorfully described. Both seemed to have relied uncritically on information furnished by their guides, so they were misinformed about the history of the operation and probably about the character of Mexican miners. Nevertheless, they seemed to have accurately, and often vividly, described what they saw. Though they did not record it in these terms, to a large extent they saw Mexican and Cornish mining techniques working side by side, carving their distinct signatures into the cinnabar hills.

Along with Lyman, Downer and Wells described a "railroad" extending into a tunnel that was 900 feet long when Lyman reported, 1100 feet at Downer's visit, and 1800 feet long, 10 feet by 10 feet, arched and heavily timbered by the time of Wells' visit. The iron rails are no doubt the work of the Cousin Jacks who were then employed, the laying of tramroads being one of the innovations they brought to the New World from Cornwall.[52] While in the Mexican silver mines the steam boilers and railcars had put an end to more primitive forms of lifting ore, this was not entirely the case at the quicksilver mine because Downer and Wells also witnessed the *tenateros* (ore carriers) probably Yaquis, lifting ore from the deepest diggings:

> They are the *tenateros,* carrying the ore from the mine to deposit it in the cars; and like the miner he is burdened by no superfluous clothing. A shirt and trowsers, or, the trowsers without a shirt; a pair of leather sandals fastened at the ankle, with a felt cap, or the crown of an old hat completes his costume. The ore is placed in a flat leather bag, *(talego)* with a band two inches wide that passes around the forehead, the weight resting along the shoulders and spine. Two hundred pounds of rough ore are thus borne up, flight after flight, of perpendicular steps; now winding through deep caverns, or threading the most tortuous passages; again ascending over earth or loose stones and up places that have not even an apology for steps,



Tenateros CARRYING THE ORE FROM THE MINE.

from HUTCHINGS' CALIFORNIA MAGAZINE

> all the while lost in Cimmerian darkness, but for a torch borne aloft, which flings its sickly rays over the dismal abyss, showing that one unwary step would plunge him beyond the possibility of human aid or succor.[53]

Once down in the mine Downer and Wells seem to describe the Mexican's *el sistema del rato* in practice beside Cornish techniques of digging test pits, tunneling and sinking shafts. Downers wrote "the crossings and recrossings, the windings and intricacies of the labyrinthine passages could only be compared to the streets of a dense city." Wells describes the mine as "a gigantic rabbit warren, extending in innumerable holes and crooked windings." He next points out, however, that "a German overseer is gradually putting matters to rights." Before their tours were through both Downer and Wells witnessed the patterned practice of boring holes in the rock, inserting charges of gunpowder, blasting, and then hoisting the loose rock to the surface in buckets or skips--and all followed by timbering or tulling.

> Another turn brings us upon some men at work. One stands upon a single plank placed high above us in an arch, and he is drilling into the rock above him for the purpose of placing a charge of powder. . . . How he can maintain his equilibrium is a mystery to us, while with every thrust of the drill his strong chest heaves, and he gives utterance to a sound, something between a grunt and a groan, which is supposed by them to facilitate their labor. Some six or eight men working in one spot, each keeping up this agonizing sound, awakens a keen sympathy.[54]

Compared to the Mexican practices, these methods, standard in Cornwall for generations, were revolutionary.[55]

52. Todd, *Cornish Miner* 85. 53. Mrs. S. A. Downer, "The Quicksilver Mine of New Almaden," *The Pioneer or California Monthly Magzine* October 1854: quoted in Johnson 50. Some of Mrs. Downer's moralising, --such as, "there is not a suffering that has not its counterpart in some latent good"--is grating to a contemporary reader.
54. Johnson 49 & 50; W. V. Wells, "The Quicksilver Mines of New Almaden, *Harpers New Monthly Magazine*" June 1863: 3-19. 55. Todd, *Cornish Miner* 85.

In addition to the work of miners both Downer and Wells described a system for compensation at New Almaden that was in the age old tradition of Cornish business practices.

> The price of the ore is settled by agreement of each week. Should the passage be more than commonly laborious, they do not earn much; or if on the contrary it proves to be easy, and of great richness, the gain is theirs; it being not infrequent for them to make from thirty to forty dollars a week a piece, and seldom less than fifteen. In those parts of the mine where the ore is worthless, but still has to be extracted in order to reach that that will pay, or to promote ventilation, they are paid by the vara [two feet nine inches], at a stipulated price.[56]

In part at least Downer has described the Cornish system of tribute mining, whereby miners contracted to work certain perpendicular shafts (or "pitches") and were paid a "tribute" based on a percentage of the value of the ore that was removed. She also described what the Cornish called "tut-work," the sinking of shafts and the driving of levels with payment based on how far or deep the work was completed. These methods of payment differed from ones preferred by Mexican miners, who commonly worked by the hour and then expected a certain amount of overtime work for which they would be paid in ore, their traditional *partido.* Though English and Cornish mine managers tried to impose the Cornish tribute on miners in Mexico as early as the 1820s with only partial success, the system eventually became the standard in Western mining.[57]

Wells reported that New Almaden was operating on a bigger scale than the famous quicksilver mines of Austria and Spain, and by 1858 considerable mechanization had been added to the New

56. Johnson 51-2.
57. Todd, *Quest for Silver* 62. Also Randall 9-10, 141.

Almaden operation as Sherman Day, the civil engineer at the mine, reported. "The mining operations here are on a larger scale than any other I have known in California," he wrote in a letter to the East.[58] No doubt Day, who let a certain Yankee utilitarianism prevented him from appreciating the graceful qualities of Mexican culture, did not credit the Hispanic miners for the operations' success. In the Mexican's aesthetic sensibility, and in the fatalism represented by bull fights, he apparently could see little more than so many impediments to production.

> Tomorrow, Sunday, the Catholics at our mine of whom there are more than 100, are to have a grand ceremony on the occasion of the fest of the Holy Cross. From their religious ceremony they proceed in the afternoon to a bullfight, and taper off in the evening with a ball and a theatrical performance. Such is the religious and civilization imposed upon the Mexican people by the Catholic Priest. We are gradually getting rid of these Mexican miners and substituting Cornish miners in their stead.[59]

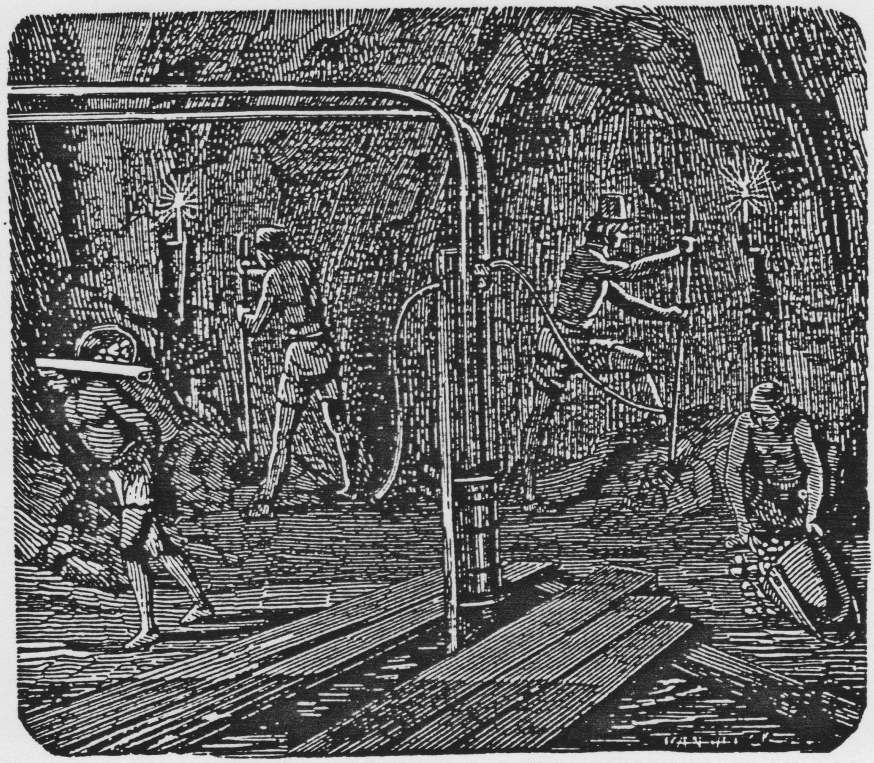
Day's attitudes, however, in no way discounts the opinions of others who valued the courage of the Mexicans and their willingness to shoulder the most back-breaking and dangerous work.

> By far the larger portion of the work people in the mines are Mexicans, who are found to be more adventureous than the Cornishmen, and willing often times to undertake jobs which the latter have abandoned.[60]

58. Todd, *Cornish Miner* 85 (quoted from Laurence Bulmore's collection). See also Wells 15. One of the misunderstanding in Well's account is that he attributes the sucees of the mine to "American ingenuity" and "Yankee industry," apparently unaware that despite an American general manager at the time it was an Anglo-British operation employing primarily foreigners, especially Mexicans, Cornishmen and Europeans.

59. Sherman Day, letter to the Rev. Jeremiah Day, May 2, 1857, New Almaden Museum. Quoted in Valencia 48, and Todd, *Cornish Miner* 84-85; emphasis mine.

60. B. Silliman, Jr., "The New Almaden Mine," *American Journal of Science and Art, Conducted by Professors B. Silliamn, Jr., and James D. Dana*. (New Haven: September 1864): 311. Bound in the "Pamphlets on New Almaden" (Vol. I, no. 13) in the Bancroft Library, University of California, Berkeley. This is a latter-day account, coming as it does in 1864, but I believe that it is safe to presume that labor conditions were similar in the 1850s.



Mineros AT WORK IN THE MINE.

from HUTCHINGS' CALIFORNIA MAGAZINE

According to the stories told in my family, one of the Cornishmen who came to New Alamden about the time that Day was complaining about bull fights was my great-great grandfather, Richard Hicks, born in Redruth in 1838 near the South Turnpike, the ancient road that lead southwardly toward Falmouth. As was the custom for boys, at ten years old he followed his father and older brothers into the mines. By the time he was eighteen, having become a skilled hard-rock miner, he was prepared to leave his homeland. The partings of Cornish children and parents must have been agonising, as were the partings of husbands and wives, because they could not know whether they would meet again. It may be that Richard Hicks never expected to see his parents again, and he never did, although his father lived another forty years.

Hicks sailed to Liverpool, and from there to New York City, where he slept on the streets and ate food left for him by a kind restauranteur. Rather than going overland, Hicks took the shorter, but dearer route across the Isthmus of Panama, running the risks of yellow fever and cholera. On the way he befriended a pregnant woman, who was traveling to San Francisco to join her husband, and he lead the burro she rode all the way to the Pacific.

When Richard Hicks at last arrived at New Almaden, his two older brothers, Thomas (who had been in the gold diggings) and Benjamin, were waiting for him. Thomas was eleven years older than Richard, and had been among those who left Cornwall in the 1840s It's uncertain whether he had come to California via the

Lake States or whether he had worked in Mexico. Benjamin was four years older than Richard, having been born in 1834, and presumably followed Thomas to America. Another brother, William John, left a wife and daughter in Redruth in order to come to California by the close of the decade.[61] (For more on the Hicks brothers see Appendix IV).

8. MINE HILL IN THE ANGLO-MEXICAN PERIOD

The Mexicans and the Cornish who lived on Mine Hill during the Anglo-Mexican era shared the instincts of many generations of miners. Most accounts emphasize that the segregation of the two communities at New Almaden into Mexican camp and English Town, but those accounts are from a later time, after an American company took over the operations in 1864. Probably no one knows in any detail what the life was like in the mid-1850s when the Mexicans were so numerous and the Cornish so few.

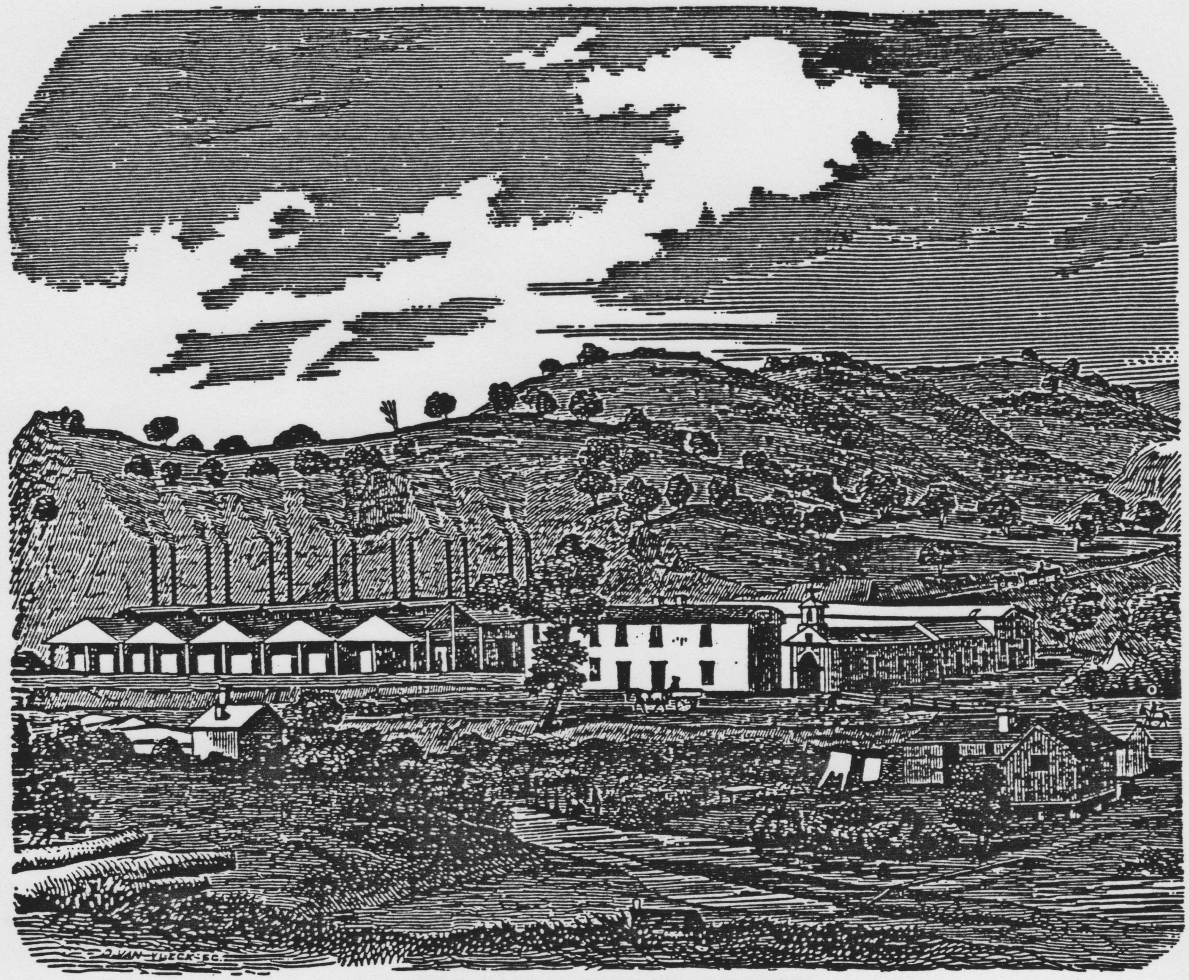
An early description by Dr. W. S. Thorne, who in later years became a resident doctor at the mines, paints a critical picture of life on the hill at that time.

> Upon my first visit to Nuevo Almaden in 1858, the general enviroment and its population was not too favorable. The general conditions in the settlement were somewhat unrestrained, turbulent and with little concern for law and order. Many renegades, murderers and thieves were frequent visitors to the locality. However, the standard of living was comparable to other mining camps throughout the West.[62]

When the doctor goes on to say that most of the workers were

61. For the account of Richard Hicks' life I am grateful to my grandfather's first cousin, Lois Collins of Castro Valley (formerly of Grass Valley), and to my grandmother, Jessie H. Hughes of Grass Valley. Also I am indebted to Anne V. Balejka-Hoffman of Hayle, Cornwall, for preparing the "Hicks Family Trees" (1990) which are now in my possession.

THE QUICKSILVER MINE OF NEW ALMADEN.



GENERAL VIEW OF THE WORKS.

from HUTCHINGS' CALIFORNIA MAGAZINE

"peons from Mexico and renegades from justice" he seems to betray a prejudice that calls the totality of his account into question. Wells, on the other hand, seems to simply parrot the prejudice of his guide when he suggests that Mexican miners were capable of inserting a knife under your ribs while taking your purse.[63] In the early years life at the quicksilver mine was certainly primitive and sometimes violent, but there is no reason to think that it was any more so than other mining camps.

Whatever violence existed, accounts from the American period at New Almaden suggest that there had long been harmony between Mexican and Cornish who lived on Mine Hill. Judge Alexander C. Innes, long-time justice of the peace at New Almaden, and so a person in a position to know, said the two groups "got along famously."[64] They had a kind of division of labor, the Mexicans breaking the ore and prospecting, the Cornish performing the drifting and sinking of shafts.

Perhaps the danger of mining itself was a bond between them --the kind of comradeship that comes from shared danger, such as soldiers experience in combat. There was no single moment that could have shown that bond better than the moment when they entered the mine. In Mexico miners progressed into mines singing *Ave Maria* and crossing themselves as they passed before a crucifix and an altar with an image of the patron saint at the entrance. Fresh flowers were placed on the altar each morning, and candles burned as the men worked below in the mine. As Mrs.

62. Lanyon and Bulmore 14. 63. Wells 17.
64. Alexander C. Innes, "Sidelights of the Administration of J. B. Randol, 1870-1891 (written in 1937), in the possession of Clyde Archbuckle. I am grateful to Mr. Arbuckle for allowing me to read it in his home.

Downer reports, this was also the practice at New Almaden were miners passed the image of *Nuestra Senora de Guadalupe* as they entered the mine.[65]

While the Cornish had no altars with flowers, the moment of seeing the light close above one's head would put a chill into anyone. Underground the Cornish had their Methodist hymns which they heartily sang in the depths of the mines from Cornwall to California. Perhaps no Cornishman would have ever gone underground had it not been for a faith in heaven and for the fact that he was taken there by his father or older brother, and that in the darkness he found himself surrounded by kinsmen and neighbors.

Once they had mastered a little Spanish, either in Mexico or at New Almaden, it is easy to imagine that Cornishmen would have appreciated the Spanish expression, *"La mineria es una loteria."* Knowing the mysterious windings of ore veins, the caprice of a cave-in, and constantly sensing the nearness of death, both Mexicans and Cornish were as prone to superstitition as they were to religious fervor. While the Spanish had legends of ghosts miners who pushed ore cars and induced rockfalls, the Cornish had their famous tommyknockers, mischevious elves who inhabited the mines.[66]

Although the Cornish had a reputation for saving their

65. Johnson 49; Todd, *Search for Silver* 51.

66. My grandfather, Kenneth W. Hughs, who worked in the quartz mines of Grass Valley, used to tell me that tommyknockers were the miners' friends, warning them of impending cave-ins. But woe to the miner who scoffed at the underground elves or who refused to leave them a crust of pasty, because he would become the target of their mischevious nature and might come to real harm. I can't say, of course, how much of this the miners believed and how much was embellished to entertain me as a child. For more on tommyknockers see Jack R. Wagner *Gold Mines in California* (Berkeley: Howell-North, 1970) 165; for Mexican superstitutions see Young 66 (footnote) and 87.

money in order to buy passage for their "cousin Jack" back home, many Cornishmen and many Mexicans let their weekly wages slip through their fingers. What Wells said of the Mexicans--"with them the only use for money is to get rid of it as quickly as possible"--no doubt applies to many who were living far from home and in camps on the edge of civilization. Dependent as they were on the chances of mining, both Mexicans and Cornishmen were susceptible to hard drinking and gambling, and to place too much emphasis on the importance of luck. Both were inclined to think of ore as the earth's wealth that belonged to them as much as to mine owners or stockholders, and so they would pilfer or "high grade" when they had a chance.[67]

Neither group would ever consider working on Sunday, their only day to enjoy the sunshine and clouds. They enjoyed celebrations, such as Mexican and American independence days, which were always celebrated on Mine Hill. The Mexicans had the most colorful celebratons, such as on *Noche Buena* (Christmas eve) when figures of Joseph and Mary would be carried through the community looking for lodging in a ceremony called *Las Posadas,* and the burning of an effigy of Judas on Holy Saturday. On the Saturday before Ash Wednesday Cornish miners and senoritas danced together at a great ball, and as the music played egg shells filled with confetti were broke over the dancers heads.[68]

67. Wells 12 (quoted above.) For a negative view of the Cornish see "How Cornish Jack Showed a Pious Bringing Up," *The Overland Monthly* November 1890: 449-455. This was no doubt true for European miners as well. My wife and I learned when we visited Frieberg, Germany (the center of old Saxon mining) last October that the common greeting on the street is still "Glück auf"--literally "luck up," or "good luck returning from the bottom of the mine." My comments here are based in part on the experience of my own family and on popular stories told by F. D. Calhoun in his books about the Grass Valley area. See also *Cinnabar Hills*, 66.

68. R. J. "Dick" Pearce, "Visiting My Old Home Town," a manuscript in the possession of Clyde Archbuckle. I am grateful to Mr. Arbuckle for allowing me to read it in his home.

The experience of Cornish miners in Mexico suggests, as Cecil Todd put it, the possibility of a mingling of the two groups that goes beyond dancing. Cornish miners in Mexico were fascinated by the dark beauty of the senoritas, and many of them married into Mexican families. "The Cornish miner often displayed a preference for Spanish wives in Spain and Mexican wives in New Spain, while in any case Celtic blood runs in all their veins."[69]

Laurence Bulmore, who knew more about New Almaden than anyone in recent memory, wrote that constant interaction between Mexicans and Anglos at New Almaden lead to many intermarriages,[70] although there is only limited evidence of Cornish-Mexican families during the Anglo-Mexican period. One case, revealed in the 1860 Census, is Quillermo Gages, an English miner, age 26, who had a Mexican wife recorded as Senora Gages. In Santa Clara County in 1859 Alfred Royce Thompkins, a Cornishman at New Almaden, married Maita Francisco Forbes of California, whose name suggests an earlier blending of English and Mexican ancestry.

Another case is my own ancestor, Thomas Hicks, who came into 160 acres near the Guadalupe Mine when he embraced the Catholic faith and married Josefa Bernal in 1866. Josefa was almost surely a descendant of Jose Joaquin and Josefa Bernal, who came to Alta California in the De Anza expedition in 1776.[71] In their marriage and their descendants Thomas and Josefa Hicks brought together the two mining heritages of their ancestors, and their

69. Todd, *Quest for Silver* 5.
70. Bulmore, Laurence. "Academy of California Church History," *Academy Scrapbook*, (Concord, California, July 1950; quoted in Valencia 110. Mr. Bulmore's own parents were English (not Cornish) and Mexican.
71. Letter from Dorothy Kottinger Wuss, editor *Santa Clara County Connections*, to author, 17 December 1990.

name lives on in "Hicks Road" which runs the length of Guadalupe Canyon, bordering on the Almaden Quicksilver Park.[72] (See Appendix V, "The Origins of Hicks Road").

9. MINING SUSPENDED

Ongoing litigation over the title of the New Almaden property brought the operation to a halt in November 1858. Many of the Mexicans remained in the settlement at Mine Hill as the company did not anticipate a lengthy controversy, but many of the Anglos, who were able to find other employment, moved on. Sherman Day, who left to take up surveying, wrote the following to his father.

> On Wednesday, November 16, we packed our trunks and left our beautiful home at New Almaden, to wander like gypsies, in search of other employment. The U. S. District Court issued an injunction against the extraction of any more ore from the New Almaden mine until some more definite ascertainment of the title should be had. The reasons for this action you will find in a pamphlet I sent by mail to Mr. Lyman. One side of the Court wants to appoint a person to carry on the business on account of unknown ownership. The mines, therefore, are likely to be suspended for many months, perhaps years, and my occupation's gone in that locality.[73]

Mining did not resume until January 1861 when the United States Supreme Court took up the question of title at New Almaden. In the meantime, notes written on the pages of the 1860 Census saying, "miners' cabins abandoned since New Almaden mines was suspended," verify that many had left. Among those were the four Hicks brothers, who took up placer mining in Tuolumne County. Later Thomas and Richard joined with others in operating

72. Hicks Road file, County Clerk office archives, Santa Clara County.
73. Sherman Day, letter to the Rev. Jeremiah Day, November 1858; quoted by Lanyon and Bulmore 15.

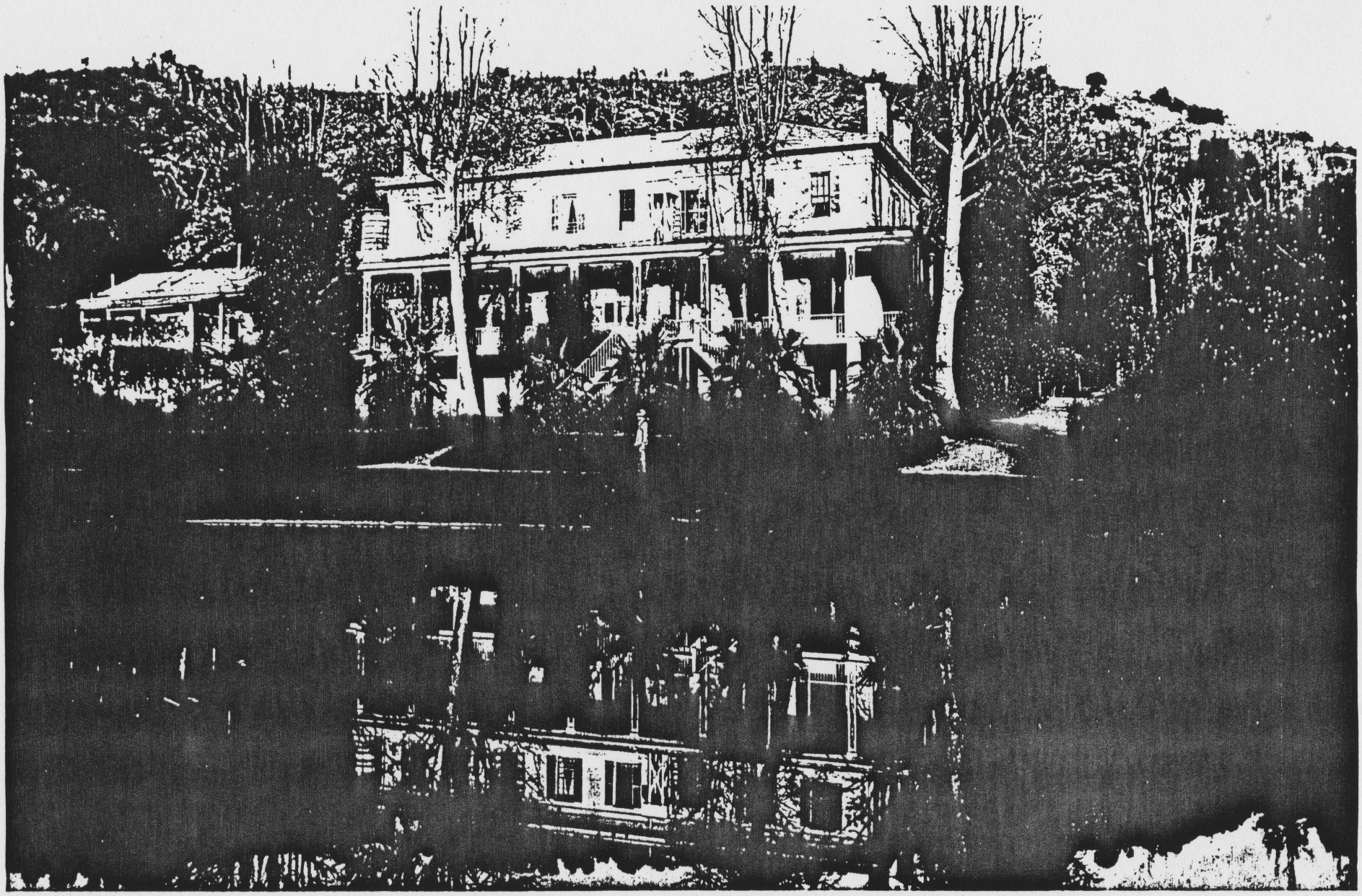
the New York Canal Company at Brown's Flat, near Sonora, while Benjamin and William John worked in quartz mining at Soulsbyville.[74]

Despite the suspension of mining, however, thirty-three English miners were still living on Mine Hill in 1860, along with three miners with English or Cornish surnames who had been born in Mexico. Among them were Phillip and Jane Doble who, based on the ages of their daughter Emily, had been in California for at least four years; and John and Susana Martin, who had been in the state for at least six years. Along with them were 156 Mexican miners, seven Chilean miners, and others from ten countries. (See Appendix VI, "1860 Partial New Almaden Census").

When the mine did re-open William Brewer visited to find Sherman Day back at work in a fully mechanized operation that featured a Cornish pumping engine:

> Saturday, August 10 [1861] we visited the principal shaft of New Almaden, with Mr. Day to guide and conduct us. It is probably the richest quicksilver mine in the world, and is worth one or two million dollars. The pure red cinnabar (sulphuret of mercury) is taken out by the thousands of tons, and the less rich by the hundreds of thousands of tons. The mine is perfectly managed and conducted. The main drift is as large as a railroad-tunnel, with a fine heavy railroad track running in. Six hundred feet in and three hundred feet below the surface of the hill is a large engine room, with a fine steam engine at work pumping water and raising ore from beneath. The workings extend 250 feet lower down. We went down. The extent of the mine is enormous--miles (not in a straight line) have been worked underground in the many short workings, and immense quantities of metal have been raised.[75]

74. Thomas P. B. Hicks, "Ledger journal pertaining to Toulumne County," unpublished document in The California Room, San Jose Public Library, 1861-63. I am grateful to curator George Kobayashi for locating the journal, and also to Thomas Hick's great grandson, Donald Prouty of Tahoe City, who informed me of its existence.
75. William H. Brewer, *Up and Down California in 1850-1864I* (Yale U. Press, New Haven, 1930) 158. Also quoted in Ascher 50.



PRETENTIOUS ELEGANCE IN THE CINNABAR HILLS

At the gateway to The Hacienda, stood the stately structure of massive stone walls, called Casa Grande. Planned originally as a hotel which did not materialize, this building, constructed by Francis Meyers in 1854, became the residence of the company managers. The five acre setting was formally landscaped with lawn, flower gardens and shrubs bordering the Alamitos creek from which water was diverted into a man-made lagoon. This sturdy structure still stands today and continues in service as Club Almaden. The building and grounds have been altered to offer recreational facilities to the public at a nominal charge.

(Courtesy New Almaden Museum)

10. THE AMERICAN PERIOD BEGINS

In April 1864 fourteen years of legal wrangling over the New Almaden property finally came to a close when the United States Supreme Court ruled by a split-decision against the British operators of the mine and in favor of a claim supported by the Quicksilver Mining Company of New York and Pennsylvania. In order to gain full possession the company entered into negotiations to purchase acreage and property improvements, ultimately paying Barron, Forbes and Company $1,750,000. Despite making a miminum investment and the continuing uncertainty caused by the litigation, Barron and Forbes produced $15,000.000 worth of quicksilver during their tenure. That ended, though, in July 1864 when Samuel Butterworth arrived in New Almaden as general manager for the new American owners. "Systematic routine and the establishment of complete authority became the keynote in the operations of the dynamic Mr. Butterworth," or, put another way, "New Almaden assumed all the appearances of a feudal estate."[76]

It appears that to many of the Cornishmen who had left the Santa Clara Valley when mining had been suspended in 1858, the arrival of the American owners signaled that steady employment was available again. The Hicks brothers returned from Tuolumne County about this time and, while Thomas and William John became involved with property near the Guadalupe Mine, Benjamin returned to the New Almaden mine for the rest of his short life. He was living at the company boarding house at Englishtown in 1867, sharing quarters with several Cousin Jacks, including Frank and

76. Lanyon and Bulmore 19.

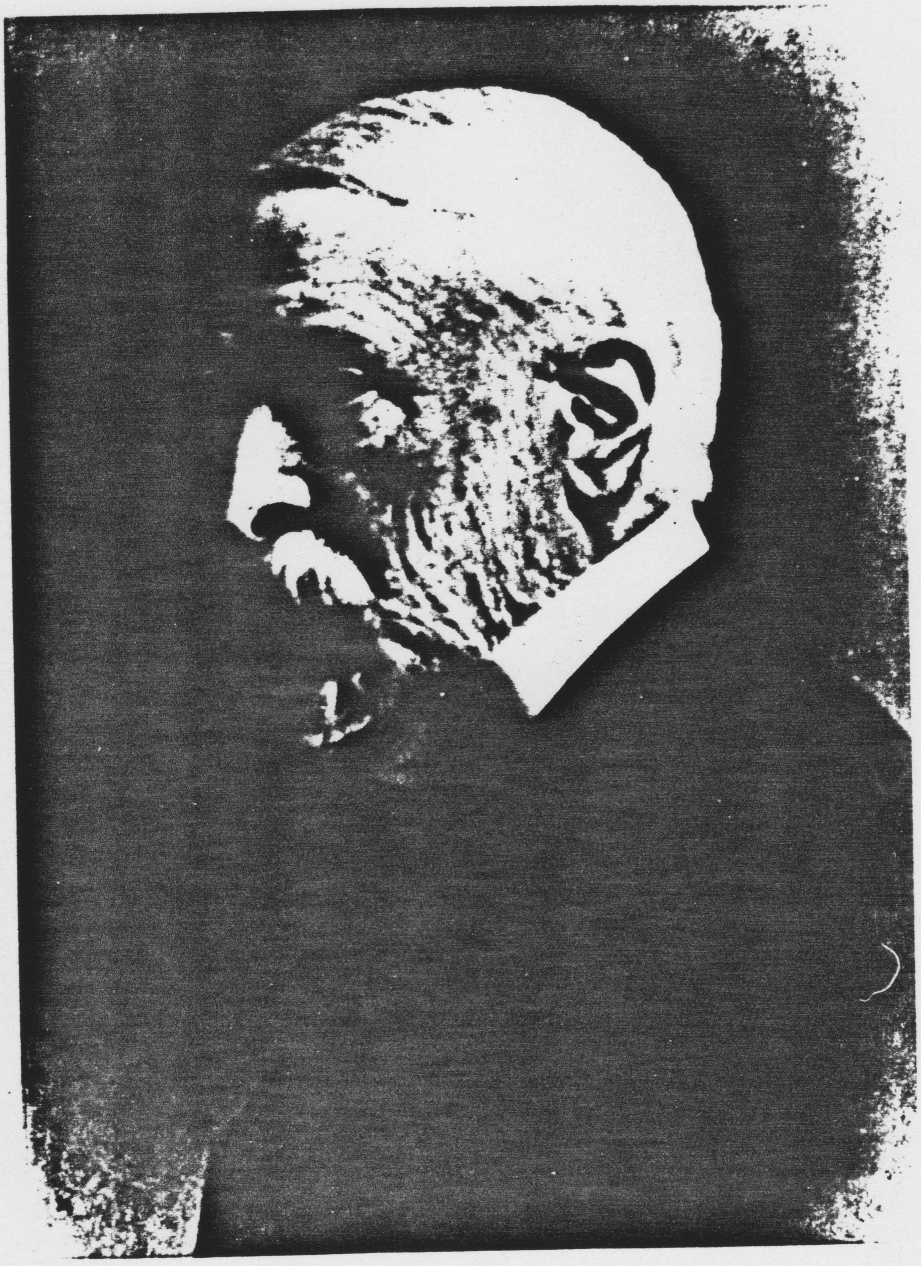
John Pierce, Charles Tonkins, John Tragonning and John Rickard; and several Hispanics, including Lorenzo Carrano, Augusto Garcia and Richardo Marques. Six years later he died of consumption and was buried in the Hicks plot in what is now an old section of Oak Hill Cemetary.[77] Brother Richard married Jane Murray of New Almaden in 1865 and became a U. S. citizen in Santa Clara County two years later. He left the state for a time but was back in the county in 1875. After that he spent most of his life in Virginia City and in Grass Valley, where he worked above ground at the Idaho-Maryland gold mine.

Others who had been at New Almaden in 1860 stayed on until late in their lives, including Nicholas Grey, James and William Pearce, John Talbot and his wife Eliza, and John Martin with his wife Angelina. Captain William Grey, who resided at New Almaden until his death in 1890, became notorious during his tenure as superintendent for giving the best jobs to his fellow Cornishmen, thus encouraging their displacement of other workers.

While Randol did not bring the first Cornish miner to New Almaden, he clearly appreciated the stability and skills of the Cornishman he found there when he arrived from New York to take over the management of the mine in 1870.

> . . . it was the most reasonable thing in the world to find English miners at Almaden when Mr. Randol arrived. Many of them had been there during the Mexican occupation, and with their strong national clannishness, their numbers had been wonderfully increased by additions from the old country.[78]

77. Bulmore papers #F5, San Jose Historical Museum Archives; County Recorder's Office, Santa Clara County; records of Oak Hill Cemetary, San Jose.
78. Alexander C.Innes, "Sidelights of the Administration of J. B. Randol, 1870-1891," unpublished essay (1937) 14. I am grateful to Clyde Arbuckle for allowing me to read this in his home.



JAMES BUTTERWORTH RANDOL

Cornish miners were already working at New Almaden when he became general manager in 1870. He encouraged many more to come. Courtesy New Almaden Museum

Randol tried to increase their numbers further by advertising in California newspapers and in the **West Briton** (published in the cathedral city of Truro), the most prominent Cornish daily.[79]

By this time Randol was competing for labor against the gold and silver camps of California and Nevada, and he was competing against already established Cornish communities, such as the one at Grass Valley, where by 1870 nearly a fifth of the population of 7,000 had been born in England, and most of those were Cornish miners.[80] To attract skilled workers away from such prospects Randol had to offer a company camp that provided amenities as well as the necessities. Along with these benefits his own style of authoritarian, but benevolent management provided a sense of permanency and security that was unknown in Western mining camps.[81]

During his tenure the Cornish families who established themselves in the company's service lived in what has been remembered as an almost idyllic community called "Englishtown," (on some maps "Cornishtown"[82]) where they had their own social club, medical facilities, and a school for their children. Their story is well told in **Cinnabar Hills**, the fullest account of New Almaden.

When Randol advertised for miners in Cornwall it could not have been more opportune. Copper production there had reached a peak of 209,305 tons in 1856 and then began to plummet, dropping

79. Lanyon and Bulmore 66.
80. Rowe 113
81. There were other examples of such company camps in the copper mines on Lake Superior and at the Blue Point Gravel Mining Comapny at Smartsville, California: Rowe 287-8.
82. Rowse 267.

to 81,278 tons by 1870. (See Appendix VII, "Mining Production in Cornwall). Conversely copper production was on the rise in Michigan from a mere 24,880 lbs in 1845 to 14,358,592 lbs in 1865 and 36,039,490 in 1875.[83] It was becoming clear in England that the mines of Cornwall, which were near exhaustion after a century of exploitation, could no longer compete with less expensive copper coming in from the United States, not to mention from Chile and Australia. Tin mining could not absorb the displaced cooper miners as it was also in difficulty, and the china clay industry did not become important in Cornwall until the end of the century. For most Cornish miners the only option left was emigration.

Many Cornishmen were prepared to take up an offer to come to America, and in 1866 5,000 emigrated. According to the **West Briton** newspaper of May 1867, "During the last twelve months, Cornish miners to the number of 7,380 left the country." The newspaper's description of the village of St. Day (walking distance from Redruth) tells the story:

> Since 1871 six mines have been abandoned in that parish, which at that time employed 3,450 persons. The population in the parish has decreased about twenty per cent; twelve per cent of the houses are now unoccupied, and many that are inhabited are dilapidated; the markets are almost destitute of stalls and are very badly attended; in the last few years one third of the shops have been closed, and the shopkeepers who now sell goods have great difficulty in getting money.[84]

So twenty years after the first Cornish miners began working at New Almaden came the great Cornish exodus that brought so many

83. Todd, *Cornish Miner* 19.

84. Alan Bennett, *Cornwall through the Mid Nineteenth Century* (Southampton: Kingfisher Railway Productsions, 1987) 30-31.

more. A conservative estimate places at least two thousand Cornish immigrants in California by 1870, and another thousand on the way. "Such numbers, in California, might seem very small, until it is remembered that they came out from a single English county, that they were almost notoriously prolific, and that their descendants were numerous."[85] It is remembered, too, that their numbers were concentrated in the mining areas.

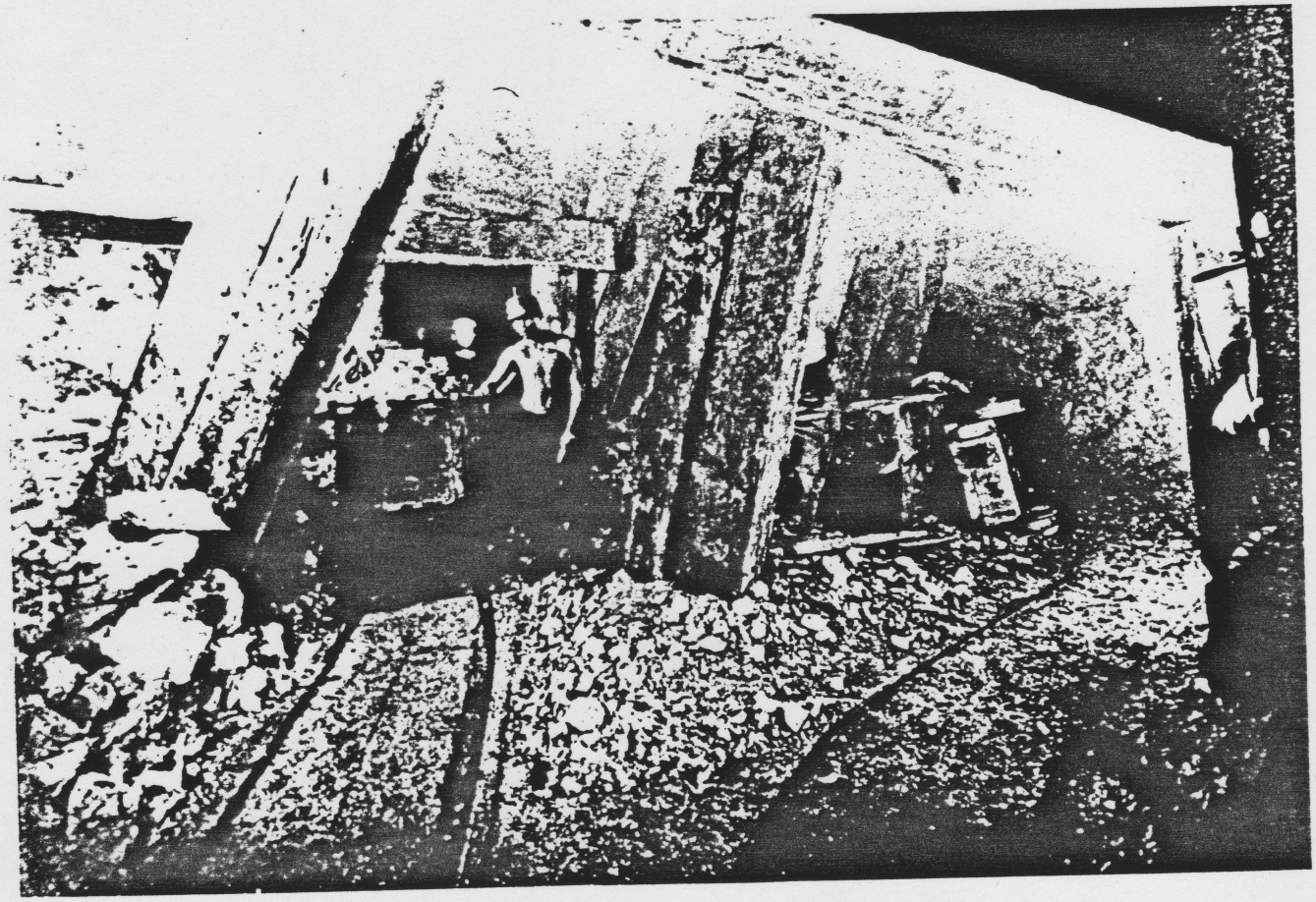
Within fifteen years of advertising for workers overseas, however, Randol's had lost his enthusiasm for the Cornish, as indicated by a letter to his superintendent, Hennen Jennings:

> Looking over the payroll I find too many Cornishmen on payroll . . . three Pearces, four Tonkins. Hope you will change this and give some Mexican boys and men a chance. I notice that E. Tregoning on returning to the mine last month was immediately put to work on day pay of $2.25, when we wanted men some time ago he cleared out. What I wish to impress upon you is the absolute necessity of putting down this Cornish promotion which is becoming as bad or even worse than in the day of "Grey." Hereafter, new men should not be given day's work except at one half current rate. Be good enough to use your best interests to suppress the growth of the Cornish clique.[86]

Why Randol's attitude had changed isn't clear. It seems safe to assume, though, that Randol like most capitalists would have preferred to see laborers competing for jobs rather than a labor force that was united by kinship and clan. He may have preferred to see Mexican miners trying to show that they were braver or harder workers than the Cornish, and Cornishmen trying to show that they were more efficient. If this was the case, he would not have been the first or the last to try to divide his workers.

85. Rowe 114.

86. James Randol letter to Hennen Jennings, November 18, 1884 (Cecil Green Library, Stanford University). Also quoted in Valencia 49.



Mexican Miners on the 1500-foot level of the Randol Shaft. Courtesy New Almaden Museum.

Despite Randol's misgivings, many of the Cornish who were in New Almaden when he arrived were still there when he closed his career in 1892. They stayed until the great cinnabar deposits gradually wore out at greater and greater depths. Many of the miners faced the inevitable and began to pull out, but others delayed until the closing of operations by the Quicksilver Mining Company in 1912. For a time Englishtown remained as a ghost village overgrown by vines, and after many years of curious visitors, vandals and weather, it exists now only in the memories of a few who knew it as small children, in photographs and recollections, and in the thoughts of those of us who try to imagine how it might have been.

Until the end there were links between between New Almaden and Mexico, a traffic back and forth. Just as a need for skilled miners and machinery brought the first Cornishmen to the quicksilver mine, mining opportunities to the south lured New Almaden's residents to Baja California and Sonora. As they worked in Mexico many of them thought of returning to Santa Clara County, though some, like James Pearce, never did. He left his family in San Jose to take the position of superintendant at a silver mine in Triunfo in Baja, dying there while trying to rescue others from a mine fire. (See Appendix VIII for a full account).

One of the last links to those times when Cornish miners traveled between New Almaden and the Mexican mines is Sylva Climo Miller. The daughter of a Cornish miner, James Climo, and a Cornish-American dressmaker, Jemima May Andrew, she was born on Mine Hill in 1900. At the age of six she was taken by her mother

to Cananea in Sonora, where her father was already employed in the copper mines, arriving in the midst of a riot by the Mexican miners who wanted five pesos for an eight hour day.

After the unrest, the mines were stable for a time. "We were there two years," Sylva Miller wrote. "I attended two English speaking schools--one on the Upper Mesa and one on the lower. My father's health started declining and we returned to San Jose."[87] Suffering from asthma like so many who had worked underground, James Climo refused state aid which he considered charity, and the family lived on his wife's dress-making and a small pension from a fraternal organization. Recognizing that he was a burden, James Climo tried to take his own life, and a short time later died of pneumonia. He was forty-five.

Today the shafts are closed at New Almaden, covered by iron grates, vented by steel pipes or covered over by bulldozed earth. Just as opening the shafts was an engineering feat, so was closing them in a way that permits none of the hundreds of miles of tunnels and earthenworks to collaspe, while allowing the whole hill to breathe like a huge, though silent, eolian harp. The former settlements of the Mexican and Cornish miners are silent, too, as one of the last remaining structures, the old school house, leans against the wind, its timbers rotting in the ground. The mine property, today known as the Quicksilver County Park, is dedicated as much to nature as it is to the memories of those who defiled nature in ripping away its rocks and trees in their search for riches or just for a livelihood. Now it is

87. Sylva Climo Miller, letter to author, Feb. 14, 1991. Also Lynn Miller Hughes, "Grandfather Project," an unpublished essay, May 2, 1983.

set aside to those who enjoy hiking, jogging or horseback riding, for those who are descendants of the people of Mine Hill, and for all those who find interest, value and sometimes even strength in the experiences of other people in other times.

APPENDIX I

from *THE CALIFORNIAN*
published in San Francisco

December 22, 1847
page 2

MINERALS

It has long been known that California abounded in Mineral products of almost every description, but until the influx of energetic men from the United States, these have lain, like the unfaithful Steward's talent, buried in the earth. Mines of Gold, Silver, Lead, Coal and Iron, are at length opening on all hands, of various productiveness. The Quicksilver mine of Messrs. Forbes's at Santa Clara, although somewhat difficult of access, and scantily supplied with water, is estimated to yield 35 per cent, and is very rich; but another, we hear, has very recently been discovered and opened, about three miles nearer the embarcadero of Santa Clara, at the base of the same mountain, tending inward, which lies continuous to water, and, according to the tests already made, is believed to be equal, if not of superior richness. Its owners are Sen. Don Jose Abergo, Hon. John Ricord, late Attorney General of the Hawaiian Islands, William Blackburn, Jacob R. Snyder, John G. Christie, Henry J. Pitts, Joseph Belden and Grove C. Cook. We wish them success and prosperity.

March 15, 1848
page two, near top

Quicksilver Mines.-- By a gentleman recently from the vicinity of the quicksilver mine at Santa Clara, the property of Messrs. Forbes & Co., we learn that the average quantity extracted per day, is about two hundred pounds, and that with quite inferior machinery and with but few hands. Other mines have been found in different parts of the country.

March 15, 1848
page two, bottom

GOLD MINE FOUND.-- In the newly made raceway of the Saw Mill recently erected by Captain Sutter, on the American Fork, gold has been found in considerable quantities. One person brought thirty dollars worth to New Helvetia, gathered there in a short time. California, no doubt, is rich in mineral wealth; great chances here for scientific capitalists. Gold has been found in almost every part of the country.

APPENDIX II

Leaving Cornwall in 1842

In December 1840 a Cornishman named "Samuel" listed twelve reasons why he was emigrating from his native land. I found this printed text, apparently cut from a book or other publication, in the archives of the New Almaden Museum. Though I know neither the author or the source, I found it compelling.

1. To escape the heavy charges of supporting *certain useless institutions* [by which he means the Anglican Church, Parliament, the Methodist Conference and even perhaps the monarchy of the new and young Queen Victoria].
2. To escape from supporting a State religion which in Tithes, Church rates etc. acquires 1/5 at least of the landed produce of the Kingdom and is at the same time *worse* than useless—spiritual opium druggers.
3. To escape from the pressure of the enormous load of national debt, £800,000,000 which cramps and bars all rational improvement, prevents free trade and drains our pockets and no attempts are made to reduce it.
4. To avoid the horror that would attend war under the above circumstances.
5. To enable me to support myself and my family comfortably without its requiring all the energies of my body and mind.
6. To live under free and useful institutions in a country where taxes are almost nominal and where those which are paid are merely for conducting public business in an economical manner and for public instruction.
7. To live in a country and settle my family where there is the least probability of present or future wars.
8. To be where I hope to be most useful and to be able to assist those to emigrate who are otherwise unable.
9. To go where the light of heaven, the vital air, the fish of the sea and the produce of the earth, necessary for the sustenance of man, are free for all as intended by their Great Creator.
10. To go where industry reaps its own reward.
11. To avoid the painful scenes and supporting the abominable oppression of the Poor Law Bastilles.
12. To avoid having the trouble and difficulty of managing so many servants and so much business and so much property for overbearing despots who will bear no part of the loss attending it.

APPENDIX III

Account Book of Employee Purchases
New Almaden Store, 1848-1870

New Almaden Collection*
Cecil H. Green Library, Stanford University
OS Book 62

Accounts Opened in 1848:

David Hammaker	Jeddiah Cobb	Wm. Bashure
Henry Grower	Wm. Anderson	Tho. Parks
Tho. Lumberson	Harris Garton	Jacob [L]Gummerday
Joseph Warner	Griffy Thomas	Christian Shindler
Jones Heller	Adam Ream	Jacob Bower
Daniel Fraley	Henry Miller	J. B. Mafsey
Andrew Fate [Tate]	John Staufer	Geo. Fried
John Swab	M. T. Reen	Charles Schuller
Adam Gabhart	Christopher Brenhmare	Frederick Heinlen
Samuel Shofner	Frederick Schuler	M. J. Hawley
Andrew Bower	Jacob Crouse	John Claubaugh
Alfred Cobb	John Kinninger	John Thompson
John Markley	Wm. Mount	Samuel Foster
Wm. K. Armstrong		

* I am grateful to the Stanford University Libraries for permission to quote from The New Almaden Collection.

Accounts Opened in 1849:

Joseph Jemison	Aaron Cary	Jacob Jefner
Allen McMichael	Emil Seele	Wm. Fellers
Geo. Houpt	John Caldwell	Peter Fultz
Warren Norton	Emil Cobb	Samuel Calpper
Geo. DeBell	Michael Prefler	Leah (?) Prefler
John Steen	Widow Paefer	Ichabod Rogers
Edmund Ferl [Fell]	David Keen	Fisher Quaintance
John Preske	Jacob Zimmerman	Peter Shoop
Margaret (?) Bickel	Godfried Meyers	Johnathan Miller
John Coleman	Cyprian Cobb	Wm. Shoop
Wm. Feller	Wm. Bashure	Geo. Prefler
James Houston	John Mullencup	Stitwell Gordon
Wm. Quaintance	David Bair	Solomon Shofstall
Sam. Frofsnickle	Levi Rhine	Franklin Stuck
Jeremiah Flickinger	Johnson Henry	John Lawyer
James Kelley	Christian Ginerick	John Deagle
Geo. Deagle	Geo. Kaler	Daniel Beck
Nicholas Baler		

Nearly all of the above accounts were closed in 1849, and many who arrived in '49 only made purchases once or twice. In some cases the employee left a note and made off the account two and three years later.

The common items purchased were tobacco, coffee, tea, whisky, muslin, gloves, boots, tools, potatoes, eggs, butter, and several general categories including "goods," "trimmings," "sundries,"and "summer stuff." Payment was accepted in eggs and butter as well as in cash.

In some cases it was difficult to make out the spelling because of penmanship. After 1850 individuals accounts are no longer listed. No Hispanics are listed, although many were employed at the time.

APPENDIX IV

Times lines: The Hicks Brothers in California

Thomas Hicks

1827 - Sept. 2 - Baptized in Redruth Cornwall

1841 - copper ore dresser, Redruth

1846 - [Josefa Bernal born in California; descendant of Spanish land grant family]

1850 - Sept. 26 - gold mining on Mathinias Creek (near Placerville), El Dorado County, Ca. (Census)

1860 - In Tuolumne County (Census, p. 276, TWP 2)

1861 - November - working placer claim, living in a cabin at Pine Log, near Sonora

1862 - Living in a house at Brown's Flat, near Sonora

October - Visits his "old partner" Charles E. Hoffman at Guadalupe Mine, near New Almaden, Santa Clara County. Tho. Hicks - black eyes, black mustache, weighing 184 lbs, 6'1" tall, light complexion (Tho. Hicks journal)

1862 - Partner with brother Richard Hicks & others in Raging Canal Co. at Brown's Flat

July 21 - Naturalized U. S. Citizen in Tuolumne County

1866 - April 27 - Obtains marriage license in Santa Clara County, Ca.

- June 13 - Marries Josefa Bernal, a native of California (Catholic priest officiates)

1868 - Hicks Road built through Guadalupe Canyon

- April 13 - Named as a plantiff in case #571 filed in the Circuit Court by the Quicksilver Mining Company. Hicks apparently refused the company a right-of-way across his property.

1870 - Living with family in New Almaden Township: son Fred, age 5; son Thomas, age 2; daughter Orora (?) age eleven months (Census)

1879 - A merchant near New Almaden (Perhaps proprietor of the U. S. Hotel near Guadalupe Mine) (City Directory)

1881 - "Josefa Hicks, 160 acres" (San Jose City Directory)

1887 & '88 - "Merchant at Guadalupe Mine" (City Directory)

1890 - A merchant at Guadalupe Mine (City Directory)

1901 - April 24 - Dies at Guadalupe Mines, age 76, services at St. Joseph Catholic Church, San Jose. Buried at Hicks' plot at Oak Hill

1901 - November 7 - Josefa Bernal Hicks dies of dropsey

William John Hicks (called John)

1833 - Born, Redruth, Cornwall

1840 - April 19 - Baptized in Redruth

1854 - May 13 - Marriage to Sarah Jane Evans in Redruth

1854 - Daughter Ann Maria born, Redruth (She marries John Pethic

1860 - In Tuolomne County (Census p. 213, TWP 1)

1862 - June - Hard-rock mining at Soulsbyville with Benjamin (Tho. Hicks journal)

1868 - April 13 - Named as a plantiff in case #571 filed in the Circuit Court by the Quicksilver Mining Company

1888 - Sept 7 - Marries Lizzie Millard in Santa Clara County

Benjamin Brown Hicks

1834 - Born in Redruth, Cornwall

1840 - May 24 - Baptized in Redruth

1851 - Already departed from Redruth

1860 - In Columbia, Tuolomne County (Census p. 293)

1861 - Dec - Working placer claim at Pine Log, near Sonora

1862 June - Hard-rock at Soulsbyville with William John (Tho. Hicks journal)

1867 - Feb. 9 - Living at boarding house at New Almaden Mine (Bulmore papers)

1870 - Age 35, living with (or near) Thomas Hicks (Census)

1873 - June 14 - Dies of consumption at 38. Buried in Hicks' plot at Oak Hill

Richard Hicks

1838 - March 14 - Born in Redruth, Cornwall

1846 - June 15 - [Margaret Morrissey born in Galway, Ireland]

1857 or '58 - Arrives at New Almaden from Cornwall (Lois Collins account)

1860 - Two Richard Hicks' recorded (Census: Napa, Yount p. 36; SCRU, Santa Cruz, p. 629)

1861 - In Tuolumne County

1862 - Apparently living in Bear Valley, Mariposa County (Tho. Hicks journal)

- June - Partner with Thomas & other in Raging Canal Co. at Brown's Flat, Tuolumne County

1865 - December 21 - Marries Jane Murray in Santa Clara County

1867 - August 3 - Made naturalized U. S. Citizen in Santa Clara County

1875 - Registers in Santa Clara County

1877 - Working in Virginia City

1878 - June 1 - Marries Maggie Morrissey in Virginia City, Nevada

1880 - Feb. 10 - daughter, Irene, born in Virginia City

1882 - Living with family in Virginia City (Margaret Hicks letters)

1890 - Living in Grass Valley, working at Idaho-Maryland Mine

1892 - Wife Maggie dies in Grass Valley

1896 - Living at Hills Flat, Grass Valley

1900 - Daughter Irene attending San Jose Normal School (later San Jose State University)

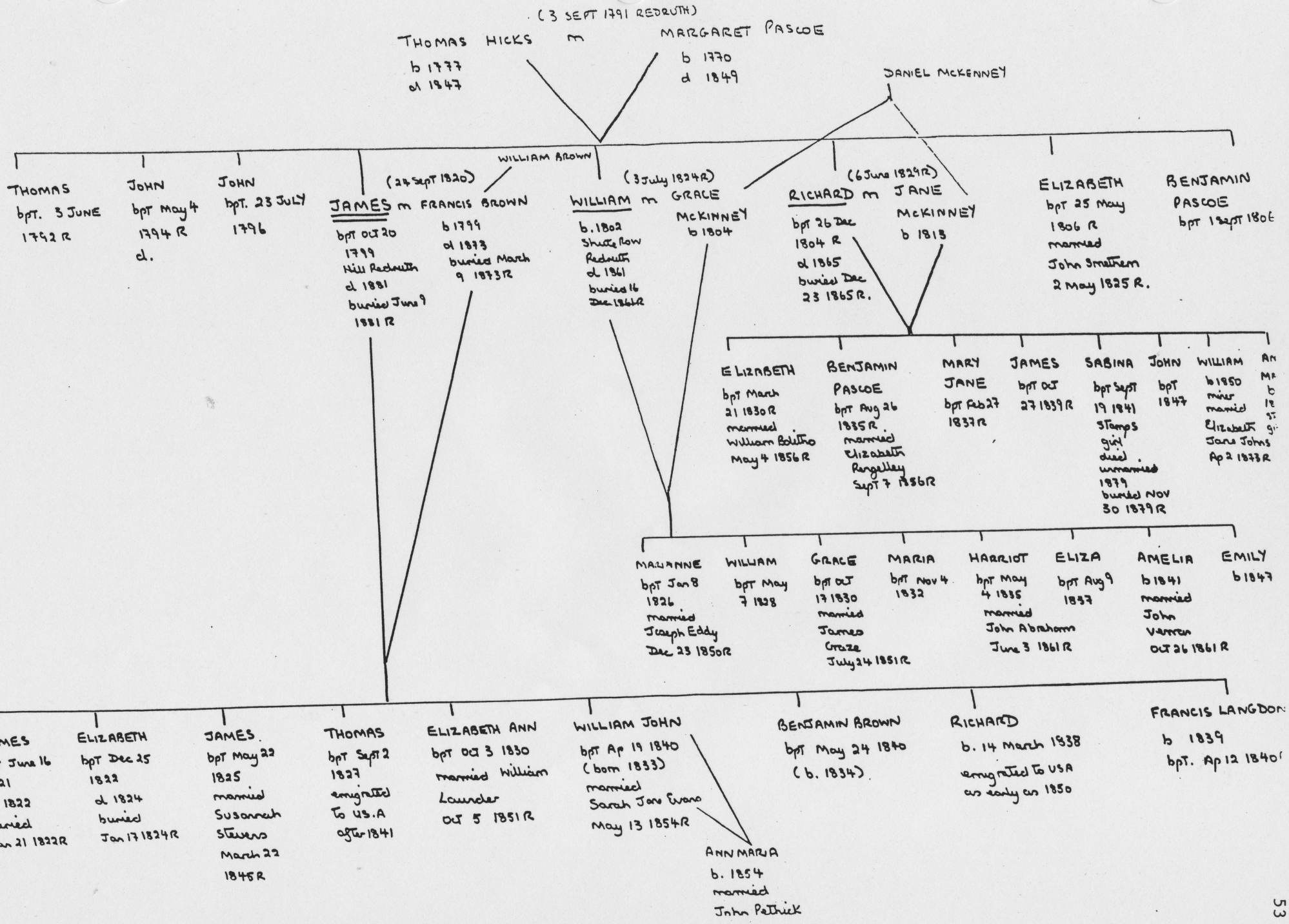
1907 - Living in San Jose; visits Grass Valley

July 16 - Dies in Grass Valley, 69 years old

James Hicks

1825 - Born in Redruth

1862 - March - Working in Chile. Apparently came to California sometime later as he autographed Thomas Hicks' journal



from Anne V. Balejka-Hoffman, "Hicks Family Trees," unpublished, 1990.

QUICKSILVER COUNTY PARK NEWS

Newsletter of the New Almaden Quicksilver County Park Association

ISSUE 25 WINTER 1991

APPENDIX V

The Origins of Hicks Road

Hicks Road, which borders the Quicksilver Park, was named for one of the first Cornishmen to work at New Almaden and for his wife, the descendant of early Hispanic settlers.

Thomas Hicks, born in Redruth, Cornwall, in 1827, was working at New Almaden by the mid-1850s. He was joined by his brothers Benjamin and Richard. In 1866 he married Josefa Bernal. Presumably through marriage he came into possession of 160 acres in the vicinity of Guadalupe Reservoir.

In 1868 Hicks led a group of about 15 landowners who petitioned the County Board of Supervisors to build Hicks Road. The Supervisors unanimously voted to build the road over the objections of the Gualalupe Mining Company. The mining company was compensated $100.

The original road, which was 40 feet wide, began near the current intersection of Camden and Kooser and ran the length of Guadalupe Canyon to intersect with Alamitos Road. The road was repaired in 1878 after local residents complained that it had become "a mire." In 1895 it was widened and improved by the addition of culverts and turnouts.

One of the people to benefit from the road was S. F. Butterworth, of the New Almaden Mining Company*, who owned property nearby. Josefa and Thomas Hicks lived on their property and used the road into the early years of this century.

Gage McKinney

Postscript: Thomas Hicks was Gage's grandfather's great uncle; Richard Hicks was his maternal great-great grandfather.

* Should read: "Quicksilver Mining Company."



APPENDIX VI

1860 Santa Clara County Census
(Partial listing for New Almaden Township)

page no.	name	age	place of birth
457	Quillermo Gages	26	England
466	William Barton	35	England
	_____ Poale	26	England
41	Richard P. Fall	23	England
46	Phillip Doble	35	England
48	William Fall	30	England
	Santiago Dilliman	36	England
50	Richard Burris	39	England
53	Uria Penal	30	England
	William Jeffrey	30	England
	William Collins	39	England
	Thomas Stephens	30	England
	_____ Grey	35	England
	Richard Pierce	30	England
	James Pierce	28	England
	Daniel Perry	45	England
	John Mitchell	30	England
	William Mitchell	27	England
	William Grey (engineer) (came to California by way of Michigan)	35	England
	Nicholas Grey	30	England

page no.	name	age	place of birth
54	Joseph Robert	21	England
	Francis Gary	27	England
	Henry B. Man	23	England
	Richard Talbath	55	England
	John Talbath	34	England
	Richard Talbath	28	England
	Thomas Ervin	34	England
	William Tinbath	23	England
	Robert Purey	35	England
	Stephen Tabillion	30	England
	Nicolas Lion	40	Mexico
	Francis Dulin	35	Mexico
	William Bartal	36	Mexico
	Henry Pierce	30	England
	John Riley	35	England
	John Martin (in Calif. 6 yrs. or more based on age of his children who were natives).	32	England

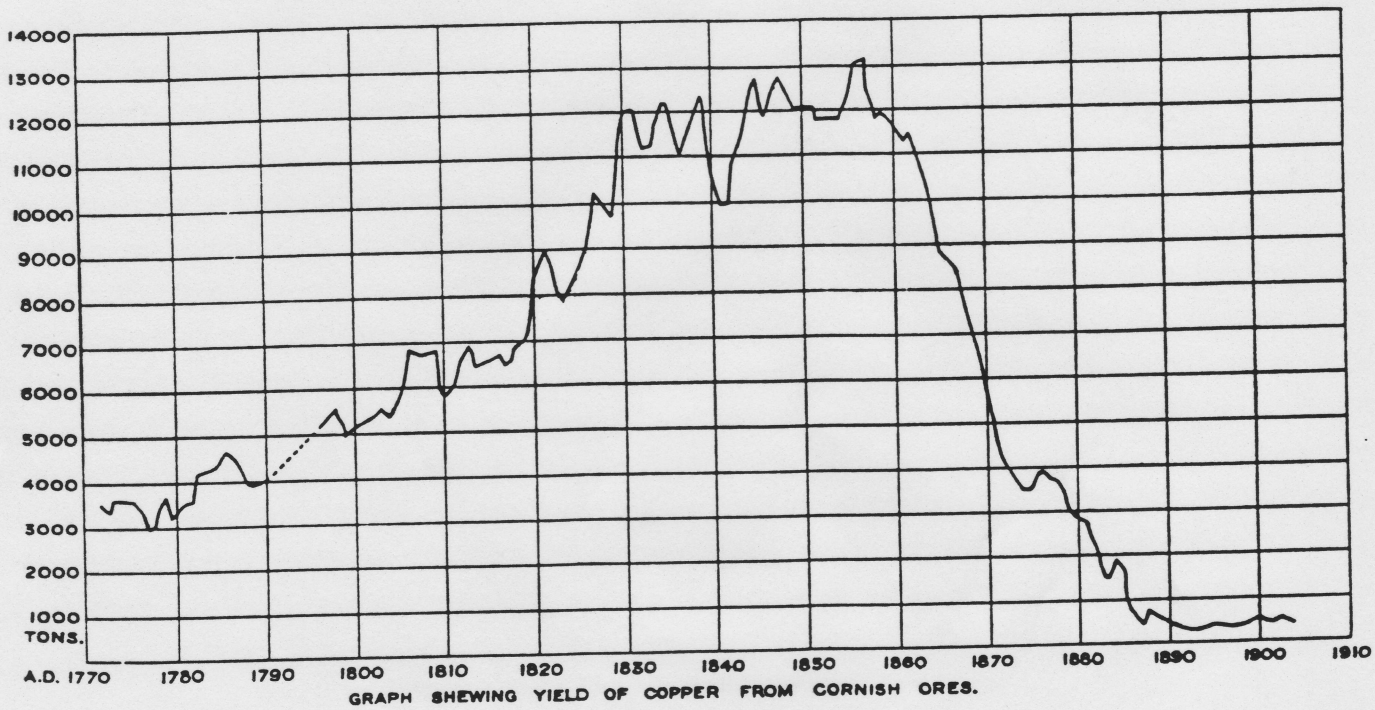
Miners from U. S. - 2
Miners from Chile - 7
Miners from Canada - 2
Miners from Belguim - 1
Miners from Italy - 1
Miners from Australia - 1
Miners from Scotland - 2
Miners from France - 1
Miners from Denmark - 1
Miners from Bavaria - 1
Miners from Ireland - 1
Miners from Mexico - 156

Also two day laborers from England were listed: Thomas Fall, age 45; and Thomas Baker, age 29.

Notes in the cenus reading, "miners' cabins abandoned since New Almaden mines was suspended," indicat that many residences were unoccupied.

APPENDIX VII

COPPER PRODUCTION IN CORNWALL
1770 - 1910



GRAPH SHEWING YIELD OF COPPER FROM CORNISH ORES.

from Alan Bennett
Cornwall Through the Mid-Nineteenth
Century (Southampton. 1987) 27

APPENDIX VIII

James Pearce

His death at Triunfo, Lower California

He attempts to Rescue Miners Caught by Fire and Loses His own Life

Mrs. James Pearce, residing at 129 North Ninths Street, in this city, yesterday received a letter from Lower California, conveying the unexpected and startling news of the death of her husband at that place on 12th inst.

About a year ago James Pearce left San Jose for Lower California to visit his brother who owns a ranch there, and while in that country he was offered and accepted the foremanship of the Argimarra Mine, near La Paz.

At the time of his death he was attempting to rescue some miners from the mine, which was on fire. The fire was noticed about 3 a. m. on the 12th inst. Mr. Pearce was immediately notified. Hastily dressing himself, he was soon at the mouth of the inclined shaft, and without delay rushed in, bent on the rescue of five entombed miners. He had hardly disappeared from view when to the horror of the spectators, the flames and the smoke rushed from the mouth of the shaft, driving back the gathering crowd. After the miners on the ground recovered from their surprise, steps were immediately taken to stay the flames and this being accomplished, a search was made for the bodies of the entombed miners. That of Mr. Pearce was found in the shaft, a short distance from the mouth, showing that he had evidently met his death almost immediately after entering. One other body was also recovered, the remaining bodies not being found at the time of this writing.

It is well known by miners that the draft in a mine is reverse in the day-time of that which it is at night, and this change taking place about the time Mr. Pearce entered the free shaft, the smoke and flames rushed in overpowering him.

The deceased was well known in this county, being an old resident, for some years holding the position of foreman of the underground works at New Almaden.

He leaves a wife, two sons and a daughter to mourn his untimely death. He was a native of Cornwall, England, and 57 years of age.

J. Frank Pearce, a son, is now employed as baggage man at the railroad deport in Gilroy, and was yesterday summoned home by telegram to receive the sad news and help to comfort his distressed mother.

Frank received a letter from his father only a few days ago in which Mr. Pearce stated that he did not like his position very well and thought he would return home soon.

Frank Pearce is now making arrangement to have the body brought to San Jose, and its may require a trip to the mine by Frank to accomplish this.

Mrs. Pearce to-day ordered a casket from W. L. Woodrow, and as soon as it can be got ready it will be shipped to the mine for reception of the body. [San Jose *Daily Herald,* Friday, July 26, 1889, p. 3, col.2].

APPENDIX IX

Time Line: Who Was Working at New Almaden During the Anglo-Mexican Period

1845 - Captain Andres Castillero discovers cinnabar

- November 22 - Castillero declares his title to a mineral deposit and a company is formed to work the mine

- December 30 - Certificate of possession granted to Castillero

1846 - Castillero continues to develop the mine. Indians at work (Ascher 26).

- April 13 - Castillero departs Alta California (Ascher 24; U.S. v. Castillero, Vol. I, 424f).

- May 13 - President Polk signs Declaration of War with Mexico

- June - Two Indians at work (Ascher 27; Revere 55).

1847 - March 21- the brig William arrives at Monterey with supplies for New Almaden (**The Californian**, 10 April 1847). Miguel Asconi (a Mexican) sailing master. Barron owned cargo; Forbes owned ship. The mining tools may have be unloaded. Mr. Robert Wilkinshaw, master & consignee. Arrived from San Blas (seaport of Tepic). Via Santa Barabara. Commodore Biddle ordered it seized. Rev. Walter Colton served as judge. (**The Californian**, 10 April 1847; Walter Colton, **The Sea and the Sailor**, 1851, p. 399).

  Ship contained: hands, tools & funds ($3000) to work the mine. (See Rev. C. S. Lyman, **The American Journal of Science & Arts**, 2nd series, Vol. 6 (1848) pp. 270 f., bound with pamphlets on New Almaden at Bancroft library. Also see **Around the Horn** by same author).

- May - the mine is deserted (Ascher 31; U.S. v. Castillero, Vol II, 985 ff.)

- July - No workers at the mine (U. S. v. Castillero, I, 541).

- Sept. 30 - Alexander Forbes arrives in Monterey on *William* after his firm had bought it back.

- "Alexander Forbes with English miners from the unproductive silver mines" go to New Almaden (Revere 45.)

- Late in the year - Cayuga brings "operatives" from Mexico to New Almaden (Ascher 37; James Alexander Forbes' letter to Alexander Forbes, Santa Clara Jan. 13, 1849, in U.S. v. Castillero, IV, 3050 ff). [Possibly this date should be early 1848].

1848 - January 10 - David Hammaker opens an account at the New Alamden company store. Other Anglos open accounts throughout the year: January/2, March/5, July/4, Aug./3, Sept./1, Oct./5, Nov./15, Dec./4 (Account book in New Almaden Collection, Green Library, Stanford).

- January 24 - Gold discovered on the American River at Coloma

- Feb. 2 - Upper California becomes U. S. territory by Treaty of Guadalupe-Hidalgo.

- March 15 - "200 pounds of quicksilver extracted per day on average with inferior machinery & few hands" (**The Californian** newspaper 3).

- March 22 - 15 hands in three week yeilded 11,200 pounds of quicksilver. In Mexican worth $2 per pound. (**The Californian**, Also referred to in **Alta Californian**, November 8, 1858, 1. This account lists iron, steel and blasting powder).

- May or June - W. T. Sherman saw "quite a number of Sonoran miners blasting & driving" (William Tecumseh Sherman, **Memoirs**, D. (New York: Appleton & Co., 1857) Vol. I., 41).

1849 - 52 Anglos open accounts at company store throughout '49 (Account book in Green Library).

Spring - miners leaving New Almaden for gold fields, according to Tho. Larkin (Ascher 37; J. A. Forbes, letter to A. Forbes, Jan. 13, 1849; and Thomas Larkin, **Larkin Papers**, Vol. VI, No. 74.

Store account book suggests that workers are leaving the mine beginning in March and continuing throughout year. (Green Library, Stanford).

1851 - Main Tunnel begun

1852 - April - All workers are Mexicans or Californians (Ascher 45; Barlett, **Personal Narrative**, II, 57f & 63f). Paid as in Mexican silver mines (Ascher 45 & 46).

1854 - Feb. 14 - Wm. Blake's letter to Dana says the mining principally performed by Mexicans and Yaqui Indians [from Gulf of Mexico]. One or two Cornishmen have commenced working in the mine (W. P. Blake, **The American Journal of Science & Arts**, Vol. XVII, No. 51, May 1854, 437-40).

- Late summer - Mrs. Downer visits the mines & writes article

- Julius Froebel visits New Almaden (Ascher 49; Julius Froebel, **A Travers L'Amerique**, 1861, Vol, iii, 318).

1856 - Sherman Day arrives at New Almaden (**Cinnabar Hills**).

1857 - W. V. Wells visits the mine (although his article doesn't appear until 1863).

- New (Day) Tunnel begun (**Cinnabar Hills**).

- May 2 - "We are gradually getting rid of these Mexican miners and substituting Cornish miners in their stead" (Letter of Sherman Day to his father, president of Yale).

1858 - October 31 - Barron & Forbes stop operations (**Cinnabar Hills**).

1859 - November - mine closes - miners depart (see San Jose newspapers).

1861 - January - mining resumes while appeal is pending.

- Wm. Brewers account of underground railroad & steam engines. (Wm. H. Brewer, **Up and Down California in 1850 - 1864** (Yale U. Press, New Haven, 1930), 158).

1863 - August - Quicksilver Mining Company takes over (**Cinnabar Hills**)

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Mrs. Kenneth Ward Hughs, Grass Valley
George Kobayashi, San Jose
Kitty Monahan, New Almaden
Donald Prouty, Tahoe City
Professor Robert Randall, Shaker Heights, Ohio
Eric J. Thomas, Registrar, Redruth
Dr. Arthur Cecil Todd, Warwickshire, England
Ed Tyson, Nevada City
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