The North Carolina Geographer
Vol. 5, Winter 1996

COUSIN JACKS AND THE TARHEEL GOLD BOOM: CORNISH MINERS IN NORTH CAROLINA, 1830-1880

Elizabeth Hines

Introduction

In the early 19th century, North Carolina experienced the first gold mining boom in North America. By the 1830s a federal branch mint had been built in Charlotte and occupations in gold production were second only to agriculture. North Carolina's mines received a great deal of attention from northern and foreign venture capitalists, who brought not only investment but skilled labor and management to the deep mines of the Piedmont. Many of these skilled miners were Cornishmen, who brought their mining heritage, refined over centuries of experience, into this new field of opportunity.

Elizabeth Hines is Assistant Professor of Geography at the Department of Earth Sciences, UNC-Wilmington

This research examines the diffusion of mining technology from Cornwall to the Carolina gold fields. Two results of the initial technological transfer were the beginnings of industrialization in the Piedmont and the subsequent diffusion of Cornish mining expertise and machinery to many other North American mining areas. The first steam engines in North Carolina, almost certainly manufactured in Cornwall, were used in the Piedmont's gold industry. Steam technology was not used in North Carolina's textile industry until 1833 at the Mount Hecla plant in Greensboro (Hines, 1995). And, just as early American coal and iron mining was strongly influenced by the diffusion of technology from Britain, much of the mining and processing of precious and other economic metals was accomplished by Cornish miners and engineers. Today in some places, although not in North Carolina's Piedmont, Cornish culture thrives. Descendants of the Cornish miners who labored in the late 19th and early 20th centuries remain in Wisconsin (home of the University of Wisconsin Badgers, so named for the ubiquitous Cornish mines or "badger holes"), Michigan's Upper Peninsula, South Dakota's Black Hills and California's Grass Valley. There Cornish food, the lovely meat pie called a pasty and saffron buns are commonplace, and Celtic music is sometimes still heard (Jolliffe,1997). While these and other regions drew miners from the depressed copper areas of Cornwall (Figure 1) in the 1880s and after, the earliest Cousin Jacks came to work the Reed, Gold Hill and other gold mines of North Carolina's Piedmont.

With their interest in gold mining the Cornish brought to North Carolina many industrial inventions, including steam technology and the steam engine

Cornish Mining History

Cornwall, unlike much of the rest of northern Europe, provided the possibility for primary occupations in the extraction of minerals, especially copper and tin, although some gold was also mined. Cornish copper and tin deposits have been

mined at and near the surface since ancient times. Archeologists have determined that Cornwall's tin industry was established in the early Bronze Age (~2,100-1,500 BC) and was widespread from Dartmoor to Land's End in the Middle Bronze Age (1,500-800 BC), continuing without serious interruption into the 20th century (Buckley, 1988, 3).

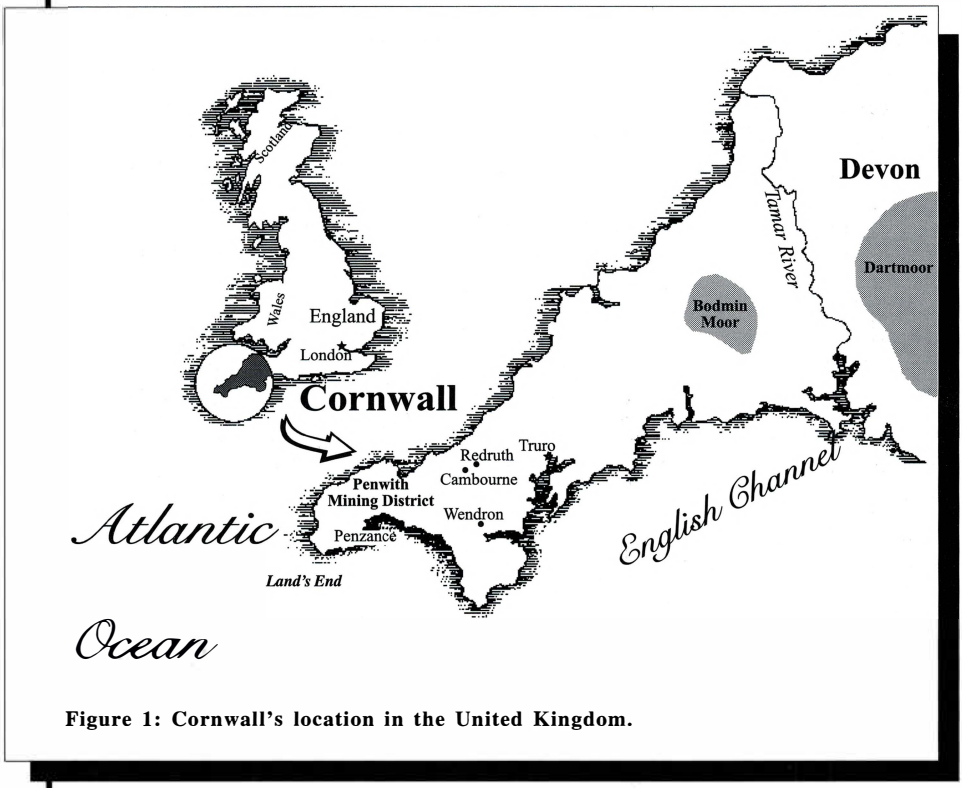

Figure 1: Cornwall's location in the United Kingdom.

Fishing and other maritime activities dominated the Cornish economy for centuries. One Cornish wife explained that "A Cornishman was either out in a boat, building a boat, repairing a boat, or standing about with his hands in his pockets looking at and talking about boats" (Falmouth Maritime Museum, 1996). In the seventeenth century, however, many Cornishmen abandoned the vagaries of the sea, although beloved, for the certainty of the meager mining wage as the industrial age moved into full swing. In the 17th, 18th and 19th centuries, deep reinforced shaft mines provided vast wealth for a few "Mineral Lords," such as the Bassetts and the Falmouths, who held the mineral rights to the whole of Cornwall among them. They provided steady, if terrible, work for thousands of miners and their families. The work was dangerous, seldom rewarding, childhoods ended quickly as children and mothers, the 'bal maidens' (mining maidens) were needed

to break ore with mallets 'at grass,' and the miner's life was generally difficult and short. The "Mineral Lords" were of Norman-English, rather than Cornish nobility—a factor that further limited the miners' loyalty to them and their dedication to profits. Traditionally, the Prince of Wales has also been the Duke of Cornwall, and thus received and receives a royalty, known as an 'override,' on all mineral revenues from Cornwall.

Conflicting stories of the erection of the Charles Bassett monument at Carn Brea (a granite outcrop that has been inhabited and mined since the stone age) in the late 18th century illustrates the uneasy relationship between the Cornish miners and the Mineral Lords. When Charles Bassett died in the 1780s, Bassett family legend relates that he had been so popular with the miners that 30,000 of them marched in his funeral procession; then they quarried the granite and erected a 150 foot monument in the form of a huge Celtic cross to his memory. The miners' version claims that the Bassetts withheld the miners' wages until after the funeral and collected a payment to finance the monument. Miners who failed to contribute, or didn't come to the funeral, lost their jobs (Ball, 1996).

Despite a copper boom, miners were pushed from Cornwall by harsh economic conditions. Tin had been the most important mineral mined in Cornwall for centuries. However, for a relatively brief period, 1750 to about 1850, copper surpassed tin as an export commodity. This development, in large measure, brought about Cornwall's rapid industrial development, which was underway by 1740 (Rule, 1971, 1-2).

Copper occurs at greater depth than tin, therefore extracting it is more expensive and technologically demanding. Not only must deeper and safer shafts be dug, they must be pumped free of water. The development of steam technology, first in the form of low pressure Newcomen pumping engines, of which there were more than 40 in Cornwall in 1776, and later Boulton and Watt's high pressure engines, of which there were 52 in Cornwall by 1800, allowed the boom in Cornish copper to occur (Rule, 1971; and Rowe, 1953, 51).

Depression in the Cornwall mining industries brought mining engineers and miners to the state, especially to the gold mines of the Piedmont

Steam technology required greater capital investments and meant reorganization into larger-scale enterprises. This also meant more mining jobs, which, because a greater level of skill was required, were more difficult to obtain and more rigidly controlled. The copper boom increased the number of mining laborers, from 6,000 in 1800 to 28,000 in 1838 (Rule, 1971, 2 and 10), but not the number of farmers. When the agricultural sector failed to keep up with the burgeoning industrial sector, the number of people dependent on the barley and potato crops in western Cornwall soon exceeded the harvest (Rule, 1971, 121-22). Furthermore, farmers were accustomed to the higher prices and convenience of single bulk sales to exporters over the inconvenience and reduced profits inherent in storing food for frequent small quantity sales to local markets. Therefore, many farmers refused to reserve grain for domestic consumption, often hoarding it. The angry miners rioted repeatedly

throughout the late 1700s and early 1800s. A crop failure and subsequent famine in 1812 exacerbated the distress (Rule, 1971, 126).

Mining opportunities soon pulled miners to the United States. The Cornish copper boom continued until about 1850. Its demise coincided with new discoveries on Lake Superior and in Chilé (Todd, 1967, 19). Tin production continued until the 1880s, when Bolivian and Malayan discoveries flooded, then crashed the market (Todd, 1967, 19). First a trickle, then a flood of miners and their families, left for other parts of the world as Cornish metal reserves were either exhausted or rendered worthless by the global market. The earliest were pushed by food shortages and unfair labor controls and pulled by the usual stories of quick riches, although, many more were drawn by real opportunities for steady employment by owners who needed and would reward skilled miners. Thus, the Cornish Diaspora commenced decades before its late 19th century peak.

Cornish Miners in North Carolina

One of the earliest opportunities arose in North Carolina's Piedmont. In 1799, an 18 pound gold nugget was discovered in Cabarrus County by a boy shooting fish with a bow in Little Meadow Creek. A few years later, his father finally discovered what the flat iron-sized lump of metal was and began to dig in and around the creek with his neighbors and their slaves. John Reed and his partners went on to discover the greatest number of large nuggets on record until the California rush and became very wealthy. Word spread far and wide. People flocked to Cabarrus and surrounding counties. They placered the streams until no more nuggets could be found, then they dug up the hillsides. Veins of gold ore were discovered as the hillsides were denuded and exhausted. The resulting pits often collapsed. When they shored up the pits and hit hard rock, they used explosives to drive further. Deaths and maimings resulted (Glass, 1980). The gold was there, but the techniques needed improvement (Figure 2).

Chevalier Vincent de Rivifanoli brought in Cousin Jacks to help mine the Mecklenburg gold fields

The arrival date and identity of the first Cornish miners and engineers in North Carolina are lost in the mists of time (time being mistier in North Carolina at that time than in Britain in antiquity). They were certainly here by the late 1820s and in 1825, gold mining in North Carolina boomed (Knapp, 1975, 7-8). Hardrock mines were drilled throughout the Piedmont and into the eastern slope of the Blue Ridge. Northern and foreign investors capitalized mines and, significantly, brought in skilled miners, engineers and masons from around the world, many Cornishmen among them. Several rich veins were discovered beneath Charlotte, in Mecklenburg county, which were soon excavated by Cornish miners working for Chevalier Vincent de Rivifanoli, the envoy of a London mining company. Rivifanoli had supervised silver mines in Mexico and brought many skilled men to North Carolina (Figure 3).

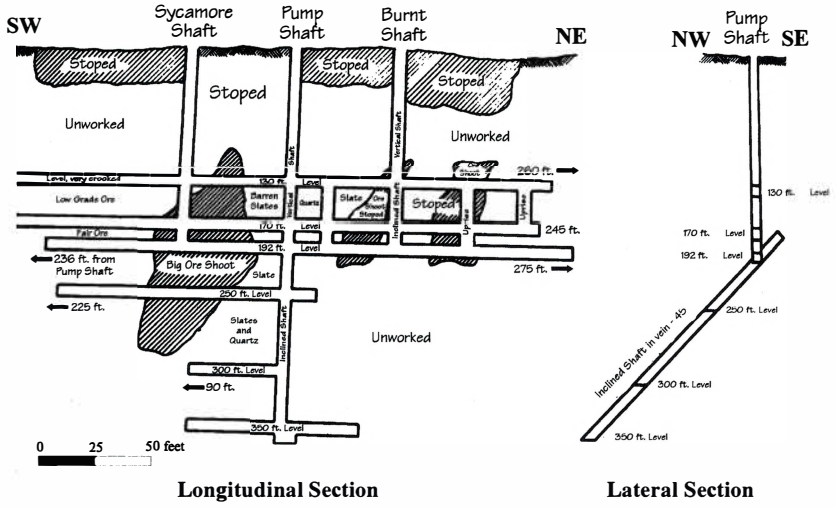

Figure 2: The Rudisil Mine was begun in the 1820's. It is similar to, yet simpler than, tin mines developed in Cornwall in the late 1770's.

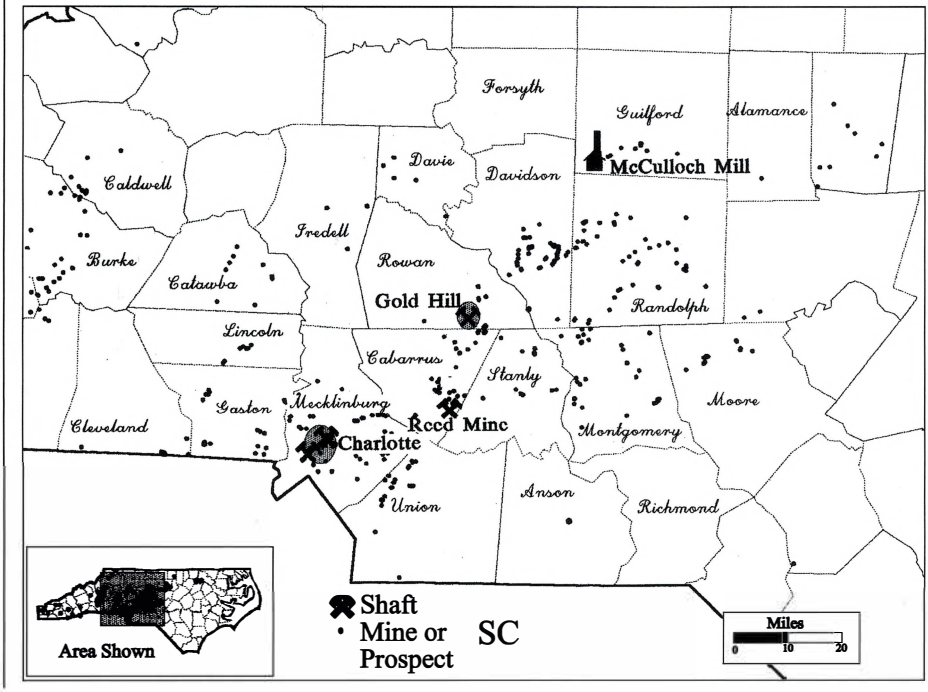

Figure 3: The major gold mining areas of Piedmont North Carolina. Source: USGS Minerals Management Survey, Permitted Gold Mines and Propects Database, 1994.

Gold had been mined by locals in Guilford County for at least a decade when a South Carolina planter, Charles McCulloch, bought land that was centrally located among several profitable mines. There, on a granite outcrop, he had built a dry-laid stone gold ore milling plant to service the local mines (Figure 4). The building was designed, and its construction supervised, by Elizier Kersey, a Cornish engineer, in 1831. The mill building bears a striking resemblance to the hundreds of pump houses that dot the Cornish landscape. McCulloch imported a

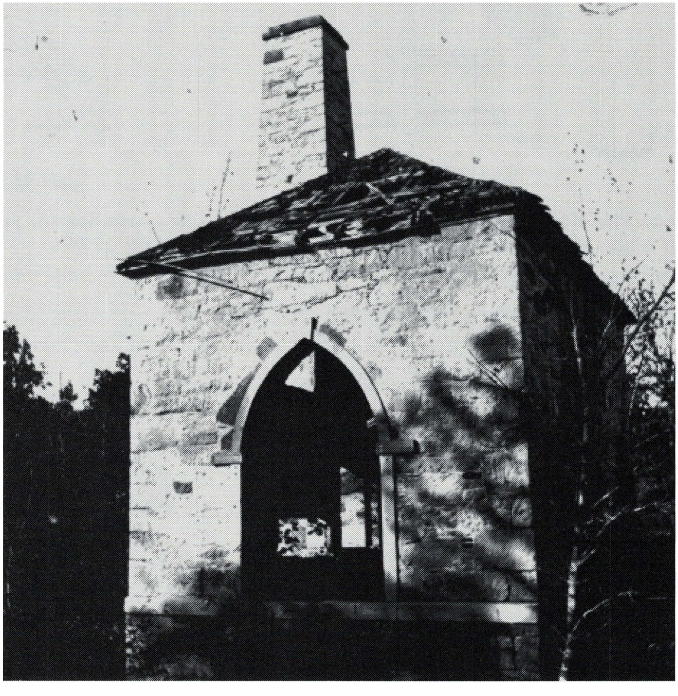

Figure 4: McCulloch's Gold Ore Mill Building, circa 1920. McCulloch's Engine House, or Castle McCulloch, as it is known locally, is of typical Cornish dry-laid stone construction.
Source: North Carolina Department of Archives and History.

steam engine, most likely a walking beam engine from Harveys of Hayle in Cornwall, and used it not to pump water, but to drive Chilean ore crushers in circular beds carved in the bedrock foundation of the mill building. McCulloch ran the mill until 1848 (Hines, 1995, 23), when he sold it to John Gluyas, another Cornish mining engineer.

Very little information about the Cornishmen who came to North Carolina has survived. A few letters in the Gluyas papers indicate the conditions that drove other Cornish miners from Cornwall. The potato blight affected the Cornish in

much the same way as the Irish. One Gluyas relative wrote in 1843..."Wages are low, poverty is intense and taxes exorbitant...operative resistances, political commotions, and gubernatorial coercion reign with insecant fury in the country of 'crown heads'" (Glass, 1984, 1), an obvious reference to lingering animosity toward the English.

Gluyas was born in the Cornish Parish of Wendron in 1796. He and his wife and family emigrated to the United States in 1834, spending their first year in New York City. In 1835, they moved to North Carolina, where they remained until he died in 1858. Trained as a civil engineer, Gluyas was first employed at the Capps mine near Charlotte as steam engineer and machinist (John Gluyas Papers). He subsequently supervised deep gold mines in Mecklenburg, Cabarrus, Davidson, and Montgomery Counties, before arriving at Gold Hill in Rowan County in 1847 (Glass, 1984). He and another Cornishman, William Trealoar, leased land near Gold Hill to work loads of gold, silver and copper. In 1848, he purchased McCulloch's mill, but it is not clear that he ever operated it.

John Gluyas's movements around North Carolina are fairly typical of those of other Cornish miners during those and later years. Many Cornishmen came with their families to the copper and gold areas of the Appalachians in the mid-19th century (Abbott, 1973, 170). Even after the discovery of gold in California and lead in the Great Lakes region, many of the Cornishmen who had lived in New England, Pennsylvania and the southern Appalachians remained in the region, if not in a specific community. Often they turned from mining to farming or became merchants. In Gold Hill, several Cornishmen who had come in the 1840s and 1850s to mine, were listed in the 1860 census as farmers, grocers and tavern keepers (Glass, 1980, 159). One can speculate on the reasons for this. Perhaps the Piedmont and Appalachian landscapes reminded them of Cornwall and the proximity to the Atlantic made the possibility of returning to Cornwall more real. Indeed, many did return in their later years.

John Wesley converted many on his trips to Cornwall in the 1740's; so the methodist church frequently marks the node of Cornish settlement in North Carolina, though little otherwise remains of its distinctive culture

An alternative explanation is, unlike other more mobile immigrants, the Cornish often brought their families and established communities, complete with a Methodist church, in which they had worshipped in Cornwall, having rejected Anglicanism for Methodism after John Wesley's proselytizing trips to Cornwall in the 1740s (Shaw, 1967, 12). Furthermore, although the West boomed, steady mining employment opportunities remained in the gold areas of North Carolina and North Georgia and the copper areas of Tennessee, near Ducktown, up to during and after the Civil War.

By the 1850s, Northern investors employed Cornish miners at the Reed mine and at Gold Hill. Nearly one half of all the gold miners in Rowan County in 1850 had been born in England (*Seventh Census of the United States*, 1850, Rowan County Population Schedule). Two Cornishmen, John Peters and David Martin, settled in

Gold Hill in 1846. Shortly thereafter they built a horse-powered whim and an ore shaft on the Heilig property on contract with George Barnhardt's company. Under their agreement they were to "mine in a mining like manner" and haul their ore to Barnhardt's mill, paying one fourth to the mill and one seventh to Heilig. By 1850 they had invested $4,000 and employed eighteen workers, many of them Cornish, and were grossing more that $5,000 in gold each year. In 1852, they joined forces with Holmes, Earnhardt and Company to finance a large-scale deep-mining and milling operation run by steam-powered equipment, including a Cornish pump to allow mining below the water table, and became the most prosperous of Gold Hill's mining companies (Glass, 1984, 18-19). In 1857, David Hunter Strother, writing and illustrating for *Harper's Magazine* under the pen name "Porte Crayon" (Glass, 1980, 407) published drawings of Cornish miners at Gold Hill (Figure 5) and described their skills and culture (Crayon, 1857).

Figure 5: Porte Crayon's (David Hunter Strother) drawings of Cornish miners at Gold Hill in Rowan county North Carolina in 1857.
Source: *Harper's Magazine*, 1857, pp. 289-300.

Cornish terminology and technology was used in the mines of North Carolina and, later, those of north Georgia and, still later, throughout the West and Great Lakes mining country. They had solved the practical problems of blasting, timbering, hoisting, pumping dry and ventilating mines in Cornwall, where many of the tin mines reached depths of thousands of feet. Indeed, the mines on the north coast known as the Crown Mines of Botallack had horizontal tunnels, known as levels, that reached thousands of feet beneath the North Atlantic. Descendants of miners there still recall stories from mining grandfathers and uncles of the noise made by the boulders rolling on the sea floor above their heads during storms.

Cornish miners made a significant contribution to North Carolina's nearly forgotten gold industry (Figure 6). They arrived after the easy gold had been harvested, when the remaining reserves were bound in hard 'bull quartz' at great

depth. They operated the machinery and provided much of the muscle to drill the shafts and raise the ore, which they and their wives and children processed 'at grass,' as they had for centuries in Cornwall. Their skills and tenacity maintained the gold industry in North Carolina into the 1880s, providing capital where little existed, especially after the Civil War.

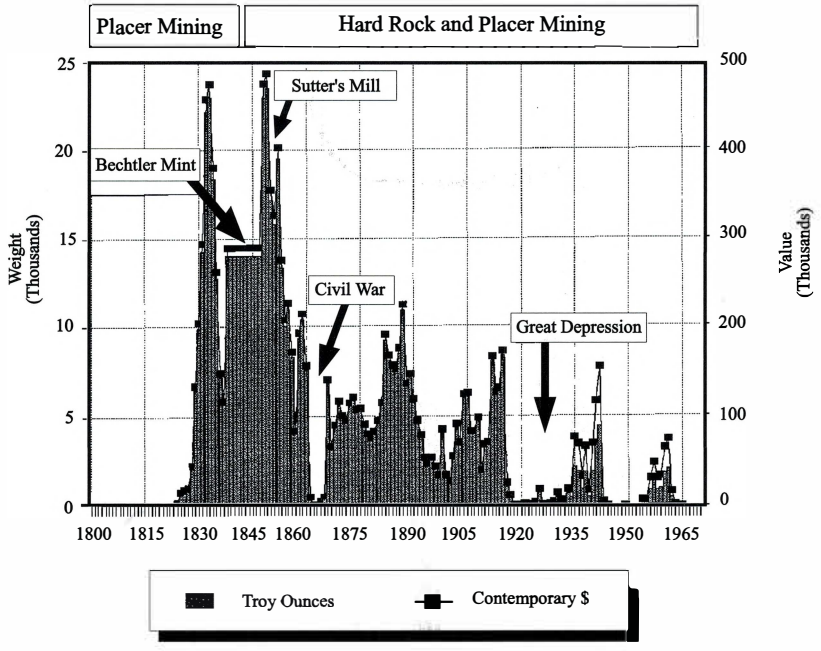

Figure 6: Gold Production in North Carolina, 1804-1965
Source: Pardee and Park1948; Carpenter 1993.

A sad post-script to this story is that very little of the distinctive Cornish culture, which predates Roman Britain, remains among North Carolina's Cornish descendants. Only McCulloch's Engine House, the old Methodist church at Gold Hill, and a few mining artifacts at the Reed and Gold Hill sites are left. Within a few generations, the Cornish in North Carolina were so completely assimilated that only their surnames identify them. As an old saw states: *By Tre-, Pol- or Pen-, shall ye know Cornishmen*—and indeed surnames listed in Charlotte and Salisbury telephone books include Trefethen, Treloar, Trethewey, Trevillian, Pendarvis, Pendrake among other obviously Cornish names, such as Moyle and Gluyas.

References

Abbott, Collamer (1973). "Cornish Miners in Appalachian Copper Camps," *International Review of the History of Banking*, VII:199-219.

Ball, Jeff (June 1996). Author's interview at Weal Taylor, East Pool, Cornwall.

Buckley, J. A. (1988). *The Cornish Mining Industry: A Brief History*. Penryn, Cornwall: Tor Mark Press.

Carpenter, P. Albert III (1993). *Gold in North Carolina*. Geological Survey Section, Division of Land Resources Circular #29. Raleigh, North Carolina.

Crayon, Porte (David Strother)(1857). "North Carolina Illustrated: The Gold Region," *Harper's Magazine*, 15:289-300.

Crowley, Terence E. (1982). *The Beam Engine: A Massive Chapter in the History of Steam*. Oxford, England: Spottiswoode and Ballantyne, Ltd.

Falmouth Maritime Museum (June 1996). Author's visit, Falmouth, Cornwall.

Glass, Brent David (1980). *"King Midas and Old Rip: The Gold Hill Mining District of North Carolina"*. Unpublished Ph.D. dissertation, University of North Carolina, Chapel Hill.

Glass, Brent David (1984). "'Poor Men with Rude Machinery': The Formative Years of the Gold Hill Mining District, 1842-1853," *North Carolina Historical Review,* LXI:1:35.

John Gluyas Papers. Item #3062, 1789-191, University of North Carolina, Southern Historical Collection, Manuscript Department.

Holmes, Lawrence (June 1996). Author's interview at Malpas, Cornwall.

Hines, Elizabeth (1995). "McCulloch's Rock Engine House: An Antebellum Cornish Style Gold Ore Mill Near Jamestown, North Carolina," *Material Culture*, XXVII:1-28.

Jolliffe, Jean (1997). Cornish American Heritage Society: personal communication with author.

Knapp, Richard F (1975). "Golden Promise in the Piedmont: The Story of John Reed's Mine". *North Carolina Historical Review*, LII:1-19.

Pardee, J. T. and C. F. Park, Jr (1948). *Gold Deposits of the Southeastern Piedmont*, USGS Professional Paper #213.

Rule, John Graham (1971). *The Labouring Miner in Cornwall, c. 1740-1870: A Study in Social History*. Unpublished Ph.D. thesis, University of Warwich, England.

Seventh Census of the United States, 1850, Rowan County, North Carolina Population Schedule.

Shaw, Thomas (1967). *A History of Cornish Methodism*. Truro, Cornwall: D. Bradford Barton, Ltd.

Todd, Arthur Ceci1 (1967). *The Cornish Miner in America*. Spokane, WA: The Arthur H. Clark Co., reissued 1995.

United States Geological Survey (1994). *Minerals Management Survey, Permitted Gold Mines and Prospects Database*.