

normal during the early history of all lode mines. However, as mines were deepened to below the water table, gold was generally associated, at least in part, with iron and copper sulfides ("sulphuret ore"). Treating of these ores by the simple method outlined above was not adequate and in many cases well over half of the gold contained in the ore would not be recovered. Early efforts to treat sulfide ore consisted of increasing the grinding of ore to a much finer size, thereby hoping to release more gold. The very fine size of the gold made it necessary to capture some of it by passing the water containing waste and gold over a blanket that acted as the gold trap. This is reminiscent of ancient practices of washing material containing very fine particles of gold over a woolly sheep skin - remember "Jason and the Golden Fleece".

Another attack on the problem was to drive the sulfur out of the ore by roasting it in a furnace. "In 1852-53 a Dr. Holland, of Massachusetts, introduced a roasting process at some mines near Charlotte, N. C. in which the pyritic concentrates were mixed with nitrate of potash or soda and roasted in a reverberator furnace at low heat."¹⁴⁰

Many novel methods must have been tried in the attempt to secure greater recovery rates of gold from the sulfide ores. For example, Nitze and Wilkens report that "a vast number of roasting processes and furnaces have been introduced, many of them approaching the ludicrous... Heap-roasting with salt was also tried."¹⁴¹ In 1856, Ebenezer Emmons warned the mine operators to be wary "of trying all the new methods which are continually thrust upon their notice by New York machinists, who know nothing practically about the matter."¹⁴²

Both the town of Charlotte and the industry of gold mining were affected by significant and new events during the 1850's. The population in 1851 was 1,186 but sustained enough business that in 1853 the Bank of Charlotte was organized.¹⁴³ A most significant event was the construction of railroads connecting Charlotte with Columbia, South Carolina to the south in 1852 and with Salisbury, North Carolina to the north in 1856. The construction of railroads was the fruition of efforts that had begun in earnest some 20 years earlier at the beginning of the gold boom and was a giant step toward making Charlotte the trading and transportation center that it is today.

"In 1854 several woolen mills were in operation, and the cloth was sent to Wilmington for coastwise shipment."¹⁴⁴ "The Charlotte Gas Light Company was chartered and began supplying gas for lighting purposes in 1858, (and) J. D. Palmer was manufacturing candy."¹⁴⁵

NORTHERN INFLUENCES

While Admiral Charles Wilkes was interested in the gold and iron mining industries and invested in gold properties, his son John, after a fling at gold mining, concentrated his efforts on iron manufacturing. John Wilkes was born in New York in 1827 and "graduated first in his class of 135 members in 1847 from the United States Naval Academy..."¹⁴⁶ Coming to North Carolina in 1853 on business connected with his father's gold mines, he was impressed with the area's opportunities. Returning to New York in 1854, he resigned from the Navy, married, and moved his new bride to the home on the St. Catherine (Bissel's) Mill place. "Here they lived for five years (while), Capt. Wilkes actively engaged in gold mining and in flour milling."¹⁴⁷ In 1858 the flour mills were moved to Charlotte