

PRECIOUS METALS OF GUILFORD COUNTY

Ever since the Revolutionary war North Carolina has been a considerable producer of precious metals. Of the \$45,565,483.00 gold production credited to the Southern states from the years 1799 to 1895, inclusive, North Carolina, with the crudest of gold saving methods, furnished \$21,778,472.

The discovery of gold in California followed by the Civil war, caused a falling off in the gold production of North Carolina and put a stop to all mining operations in the South. Since that time there have been periods of revival and depression, but no genuine revival until recently, when new, cheap, and effective methods for the extraction of gold and other metals from pyrites ores came into successful use.

A recent report of the Labor Commissioner of North Carolina states there are two hundred and seven known gold mines in North Carolina, of which forty are in operation, and twenty of which are gold producers and have deposited gold at the U. S. Mint at Charlotte, N. C., during the past year. Also that the wages paid miners was from sixty cents to \$1.50 per day. The deepest mine in North Carolina is "Gold Hill," over eight hundred feet deep.

The recent advance in copper has stimulated prospecting. New copper prospects are being discovered and some of the old known copper mines are being reopened and operated.

Professor Holmes, State Geologist of North Carolina, recently states that the grey copper mines of Granville and Person counties, are being successfully operated, and that a smelter will be built at the mines to treat ores more economically than by shipment to a New Jersey smelter as they are now doing profitably.

Two parallel gold and silver, and copper bearing mining belts or formations, traverse Guilford county, in a northeast by southwest course, the course of one running west and the other east of the city of Greensboro, making it a central point for mining supplies, and an advantageous location for a custom mill or smelter for extraction of precious metals from the various valuable ores of Guilford and adjacent counties which these ore belts traverse.

The defined width of the "Central Syenite," or so-called "Granite belt" is from fifteen to twenty five miles. Including the adjoining "Huronian Slates" they are from twenty to fifty miles wide. The granite belt really also contains considerable chlorite and hornblende, pyroxene and epidate are abundant, together with magnetite. The mines are not uniformly distributed in this area. At the northeast in Guilford county they occur near the southeast edge of belt and near the Huronian schists.

The quartz and slate ores of this igneous formation are almost always auriferous (gold bearing) and sometimes cupriferous (copper bearing). They rarely contain much lead, zinc or nickel. The silver present is usually alloyed with the gold. Arsenic and antimony are not common, and the ores are only refractory below water level (forty to sixty feet below surface) as the sulphurets make them so.

The veins occur in the syenite or in contact with the granite and adjoining slate formations. The vein fissures range from a few inches to many feet in width—sixty feet wide in some instances. The chief filling of the vein fissures is quartz (and some slate) carrying gold and auriferous sulphurets of iron and copper. The pay ores of these veins range in value from \$2.00 or \$3.00 to \$100.00 per ton in gold and silver, and many of these properties can be secured at reasonably low prices. Among the older mines of Guilford county lying from six to twelve miles south and southwest from Greensboro, that were previous to the Civil war or at one time successfully operated for gold and copper, are "The North Carolina or Fortress Mine," "The Hodgkin Hill," "The Fisher and Millis Hill Mine," "The Gardner Hill Mine," "The McCulloch or North State Mine," "The Lindsay Mine," "The Deep River Mine," "The Guilford Mine," "The Twin Mine;" and some twelve to twenty miles north and east, "The Melvin Mine" and "The Gibson Hill Mine." These mines were worked to depths varying from fifty to three hundred and fifty feet, the quartz veins varying in width from one foot to twelve feet or more. They produced free milling gold ores running from \$2.00 to \$100.00 per ton or more, and even a better average grade of iron pyrites gold ores from which they were unable to extract the gold with the methods then known and used. In some of these mines they also produced a cobbled or selected yellow sulphide of copper ore and concentrates yielding from 15 per cent. to 30 per cent. of copper. This was accomplished with crude crushers such as "the Chilian mill" and "wooden stamps," and the old "Cornish Budle" for concentrating. It is difficult

to accurately estimate the yield of these Guilford county mines in gold and copper, but from best data obtainable, I think I am safe in putting the value of their production at between one and two million dollars.

The quartz and slate ores of these belts are decomposed (oxidized), and easily and cheaply mined to water level, an average depth of fifty feet from surface, above which the gold is in its native state, viz.: Free milling and readily saved by quicksilver. Below the water level, the ores are harder, and the precious metals are in mechanical or chemical combination with iron and sulphur, requiring different treatment. While we have plenty of water in our mines, yet in North Carolina I know of none that would be called very wet mines in the West, or objectionable on that account.

The true veins of these ore belts are regular, well defined and continuous, lenticular and alternating in thickness both in length and depth, but permanent in depth and values, as shown by present or previous development. In some veins, the pyrites lenticular ore formations, alternate as depth is gained, in their iron and copper contents. The iron pyrites dumps at mines previously worked for copper are evidence of this.

Mining operations in Guilford county, either in re-opening old mines, or in new prospects frequently being discovered and opened, offer inducements for the profitable investment of capital to practical mining men both in operating mines or mills, or a custom ore reduction works at Greensboro, whose eight railroad connections could convey various varieties of iron and copper pyrites, gold, lead and zinc ores and coal or coke fuel to this point from their known locations in Guilford and adjacent counties in the central mining belts of North Carolina.

Mining and milling operations in North Carolina can be carried on for one-half (fifty per cent.) of the cost of operating in the average Western mining districts. A mild climate per-

mits work the year round. The country is well watered and timbered. Water supply at each mine, and wood fuel averages \$1.00 per cord delivered at mine. Labor, cheap, abundant and efficient, at prices ranging from sixty cents to \$1.50 per day. Location near railroad depots and within easy reach of mining supply and machine works, as well as of principal cities of the North and East; and mines located in a settled, law-abiding section of our country where all investors or settlers are warmly welcomed and protected.

With veins carrying ores of a gold value of from \$5.00 to \$50.00 and even \$100.00 per ton, some of which ores can be concentrated four or five to one, by crushing and washing out the quartz and slate, it would seem to only require capital and mining experience in developing these formations and in adapting the new cheap method of chlorination, cyanide, electro-cyanide, smelting, etc., to the treatment of the pyrites ores to make this county and section a larger and more profitable producer of precious

metals than ever. By these new methods refractory ores can be treated and as high as 95 per cent. of their value of precious metal extracted at little greater cost per ton than ordinary stamp milling of free milling surface ores, which has previously cost \$1.00 to \$2.00 per ton. The lack of capital, experience in mining, and unsuccessful trial of new and unproven patent processes for the saving of gold, as well as unscrupulous promoters, have been a great drawback to legitimate mining in the South. As an instance of what legitimate mining backed by capital and experience is now doing in Southern gold fields, I will cite the "Hoile Mine," near the border of North and South Carolina, where with a large vein of iron pyrites gold ore that only averages between \$3.00 and \$4.00 per ton in gold, they last year, with an adequate milling and concentrating plant, and with the chlorination method of treatment of concentrates, netted the owners over \$100,000.00.

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