

THE GOLD REGION.

We make the following extracts from a paper read before the Lyceum of Natural History in the City of New York, by Mr. Nash, in the hope that it may contain information of use to our readers in the district in which the precious metal is found.

The Gold Region is much more extensive than has been hitherto supposed; it commences in the neighborhood of the Coosa and Talapoosa Rivers, in the State of Alabama, and extends north-east through the western parts of Georgia, South Carolina, North Carolina, the middle parts of Virginia, Maryland, and finally a narrow strip or belt reaches the Delaware river, a few miles west of Trenton, New Jersey.

The width occupies the greater part of the whole great slope from the foot of the Blue Ridge, or Alleghany Mountains, to the small granite ridge seen along the borders of the diluvial formation or lower country,—through the southern country, from the Delaware to the Chattahoochee rivers. A narrow strip or vein only extends through Pennsylvania, which may be seen a few miles west of Philadelphia, on the roads either to Bethlehem or Harrisburg; but south of the Susquehannah, by far the greater part of the surface of the country between the Blue Ridge and the diluvial, is made up of gold formation. This formation stretches through near eight degrees of latitude, in a north-east and south-west direction; and in the State of North Carolina, is more than two hundred miles wide, from east to west, comprising an area of not less than eighty thousand square miles.

The traveller who passes through the Gold country, will see innumerable ranges of white quartz, scattered over the ground in the greatest confusion, on its surface generally, in a north-east and south-west direction. These are called, by the inhabitants of the country, *Flint Ridges*, and are the Gold Mines themselves.

To a person residing in the gold region, nothing can be more easy than to discover gold wherever it is to be found. Let him, in the first place, proceed to a flint ridge, especially if it is situated in the red soil; a common frying-pan and a spade, are the only implements necessary to commence operations: let him dig up a few spadesfull of the red earth lying near the surface, and among the masses of quartz, or flint; the frying pan being filled with this red earth, he may next resort to some rivulet or spring of water in the vicinity, and commence working the earth; water is to be pretty freely poured into the pan at first, and the whole quantity agitated; at the same time, the earth should be frequently stirred up, so that the water will more completely penetrate all its parts; let fresh water be constantly added, from time to time, as the earth is stirred and the pan agitated. This process being continued for a few minutes, all the earthy and ferruginous particles will have become suspended in the water, and floated away as fresh water has been from time to time added; what now remains in the pan, will be coarse pebbles and gravel: water should continue to be poured on these, whilst the pan is constantly agitated, which settles the gold to the bottom by the power of gravitation; the coarser pieces can be picked out by the fingers, while the pebbles by turning the pan partly down on its side, and skilfully agitating it, will, one by one float over the top, and off with the water, leaving the gold, if any, behind. This process is to be continued until the whole has disappeared. If, on carefully examining the bottom of the pan after the earth and pebbles have been thus washed away, a solitary speck of gold, however minute, is seen in the bottom of the pan, a gold mine has been discovered. The mine is in the flint ridge from which the earth was taken. Pits should now be sunk among the masses of quartz, and the earth washed; and if more gold is found, and that in any considerable quantity, a rich mine has been discovered; especially, if on breaking open the masses of quartz, gold is found disseminated through any of them in its native state. If the quartz or flint masses put on a honey-comb appearance, are flawed with little cavities, and contain the red oxyde of iron, either with or without pyrites, these are propitious omens; when one solitary speck is discovered on the surface by washing the earth, the mine is generally rich in gold.

I have conversed with gentlemen who have visited the mines in South America, and they inform me the gold is seldom found on the surface, even at some of the most valuable mines in that country. When mines are searched for, the miners commence on some flint ridge, or at a favorable locality, and dig down, often twenty or thirty feet without meeting with a

particle of gold, if, at this depth, two or three specks only are found, the vein is considered so rich as to amply pay for working. Some veins have proved rich where little if any gold has been found for the first sixty feet downwards from the surface.

On search being made amongst the flint ridges in the gold regions, if gold should not be found on the first trial, the operation of washing the earth should be repeated at different places along the whole length of the flint ridge. Trials should be particularly made where flint ridges appear to cross one another at right angles, or where they run into another, as at such places the veins, if auriferous, always contain rich deposits of gold; search should also be made in all the streams and rivulets that cut through or cross the flint ridges. The trial should be made by washing the earth in the bottom of the stream and its alluvial banks, just below where it crosses the flint range; and if gold is found, it is pretty certain that its origin is in the flint ridge itself, or if the gold is found on the upper ridge, or beyond the ridge, it probably has been derived from some flint range that crosses higher up the stream.

The vein may be discovered in all cases in a flint ridge by digging pits a few feet from one another, quite across the range where the masses of quartz are found; if the first pit is unsuccessful, some of the other ones will be certain to strike the vein, as it is usually somewhat broken up near the surface: the pyrites, if it contains any, mostly decomposed. Crow-bars and pick-axes, aided by buckets and windlasses, will be sufficient to raise the ore, until the pits have been sunk so deep as to encounter water and the vein become so compact as to require blasting; when gun powder, drills, pumps, steam engines, and other expensive machinery according to the depth to which the vein may be wrought, will be requisite for carrying on the operations. It requires but little capital to put a mine in operation at its commencement; as the gold every day found, will, in most cases, much more than defray the expenses of carrying on the mine: the cost of putting up pounding and grinding mills, if driven by horse power, will vary from one thousand to two thousand five hundred dollars, horses and all; water powder will cost from five hundred to a thousand dollars more, according to the value of the site, and the cost of erecting the dam.

A steam engine, from ten to twenty horse power, can be put in operation for three thousand, up to four thousand five hundred dollars, pounding and grinding mills, apparatus and all. The expenses for quick silver, will be but trifling, to form the amalgamation, as it can always be distilled off, and almost every particle be preserved for new operations. The ore should always be roasted, quartz and all, in a powerful furnace heat, to destroy the sulphur and acid, as well as to crumble the quartz, and render it more easy to pulverize.

Where gold is found in earth, or alluvial deposits, no expense whatever, besides the cost of a few spades and rockers, will be necessary to commence operations. Five hundred dollars will put machinery in operation to wash the earth, upon a large scale, especially if there should be a considerable stream or run of water in the vicinity. The operations of washing earth from the bottom of streams, and alluvial deposits, are generally carried on without the aid of quicksilver, as the particles of gold settle to the bottom by gravitation, while the earthy particles float away by the agitation of the water; but it would be better always to use quicksilver, as many of the fine particles of the gold are carried off always with the water. The quicksilver should always be put into the rockers along with the earth (1/6. of quicksilver to 1 bushel of earth) as it is taken up, and while the agitation is going on, every particle of gold, both great and small, will be congregated into a mass at the bottom, a compound of mercury and gold.

The gold formation as above remarked, may not improperly be called a vast field of *stuck work*, where the veins traverse it on an enormous scale: sometimes their size appears to be very diminutive, even to a mere line in breadth. I have often noticed, in the neighborhood of large veins, that small branches of quartz would frequently stray off from the parent ore, into the adjacent rocks, and exhibit themselves in the form of *stuck-work*, on a diminutive scale. The veins themselves, comprising the gold mines, are evidently the work of chrysalization, as well as the rocks in which they are situated. They traverse the country from Alabama to the Susquehannah, in countless numbers, often a mile or more in length each, running in the direction of the stratification of the country. The great majority of the veins run north-east and south-west, having comparatively but few veins crossing at right angles. As the veins are in such numbers, we have every reason to suppose that new and valuable mines will be discovered, from time to time, throughout the gold region. Capital may be invested to great advantage, in almost any place where gold has been found, for carrying on mining operations. If the business is well conducted, and the work done under the superintendence of overseers of *business habits*, integrity and scientific skill, no one can scarcely fail of success.—Some mines will yield fortunes, beyond the riches of Cræsus, or the dreams of avarice.