

SELECTED QUOTES

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The state of decomposition of the underground rocks is so advanced that in not more than three out of a hundred of the specimens, all selected with the utmost care, is there a fresh augite or hornblende, and perhaps one half of the 185 miles of underground workings are accessible.

The lithological examination became a protracted study of decomposition products and resulted in proving that propylite did not exist below the surface, and more than upon it.

*DLE comment: 185 miles amounts to 976,800 feet, or rounded amounts to about 1,000,000 feet; assuming that horizontal work was done at \$3.50 per foot in Comstock days, this would represent \$3,500,000; or on today's prices (1972) about \$35,000,000.

THE LODGE

note 12/20/84
ROGERS - HED
BASIC - HED
GABBRO &
BASALT textures
unusual textures

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The hanging wall of the Comstock is diabase throughout the entire 10,000 feet of the main Lode, for some distance on the southeast branch, and along the northeast branch, as far as the explorations have been carried. The east wall is almost all in an extreme state of decomposition so far as the silicates are concerned, and the feldspars are also frequently replaced by alteration products. The footwall or west wall of the main fissure is granular diorite, for more than three quarters of its length, but at its southern end it is chiefly composed of metamorphic slates. The footwall is much less altered than the hanging. The northern branches, excepting the most easterly one, are included if porphyritic diorites, though stringers of diabase also make their appearance in one or two spots on the fissure which extends toward the Utah shaft. The southern branches pass through a variety of contacts.

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Accompanying the vein for about half its length is the narrow dike of younger diabase called "black dike". It is found only a little north of the middle of the main Lode, extending thence southward and following the outwest branch. It usually lies directly upon the footwall, but occasionally passes a short distance behind it.

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Contents of the vein: simple, on the whole, consisting of country rock in fragments, varying in size from that of a grain of sand to horses, thousands of feet in length, clay, quartz and argentiferous minerals. The quantity of calcite, except in the JUSTICE, is wholly insignificant, and gypsum, zeolites, etc. are rare.

Some of the quartz is said to contain no silver or gold; but for the most part it carries both, though in varying quantities. That which lies upon or is inclined in diorite carries gold but little silver; very little of this, however, will pay the expense of extraction and treatment. The quartz associated with the hanging wall carries more silver, accompanied by gold of a value nearly equal to that of silver. The variation in the tenor of the quartz is extreme, as it usually is in silver veins; and it is only in certain spots that the quartz assays above the fifteen or twenty dollars necessary to warrant extraction at the present price of labor and supplies; while occasionally the value per ton of comparatively small masses runs up to several thousand dollars.

Masses of ore which will pay for extraction are called throughout the region west of the Rocky Mountains, BONANZAS. The bonanzas, therefore, do not represent by any means all of the quartz which carries a perceptible amount of precious metals and are often surrounded by low-grade ores in great quantities.

Though there are exceptions to the rule, large bodies of quartz commonly contain bonanzas. With two very important exceptions, they have all been found in the secondary fissure, not on that with a constant dip (aside--DIE: assuming in 1972 one can think in term of echeloning segments, the Bonanza would be at the steeper center of the segment, and not on the flatter 'horsetailed portions.) Excepting the JUSTICE body they have all occurred in contact with the east-country diabase.

* * * * * * * * * * *-----the branches of the LODE to the south and north are structurally integral portions of the Comstock, but the Lode considered as a great ore deposit is limited to the contact of the diabase with the underlying rocks.

(Becker in 1882 uses his diabase mass as an ore control; but recent studies do not recognize the diabase at all)

Continuing and with reference to the section through the C and C shaft-----

"the footwall is diorite, and the hanging wall substantially diabase, while the surface is capped with earlier hornblende-andesite (Alta); the secondary fissure at this point was not simple but multiform, splitting the wedge of country rock into sheets or sharper wedges. The intervening space is filled with quartz, none of which has been stoped, on the plane of this section.*****, the quartz contains numerous fragments of country rock; and some of the 'horse' is so silicified as to be regarded, in mining, as quartz---}as for the above he is discussing the topmost area on the section---, too,* *** above included the statement that ore occurs in the zone away from the section, at this horizon)

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Becker continues:

At 400 feet from the surface the different fissures unite, and the mai fissure is supposed to continue without interruption to the bottom of the Con. Virginia shaft, where it is a mere crack. Why the vein has not been prospected for an interval of about 1200 feet 'I cannot say'. (with this one can agree; with reference to our experimental sectioning, note that there is room for another cross structure, taking off at a steep angle, like the Con. Virginia, below).

The great bonanza which has yeilded over one third of the ~~whole~~ product of the whole Lode stands in a veetical position and extends 500 feet from the fissure. Below it large masses of diorite are embedded in indeterminate vein-matter (probably breccia ? DLE) and diabase * * * * *

* * * * * concerning the 'great bonanza'----- it was composed of crushed quartz, including fragments of country rock, and carried a few hard, narrow, vein-like seams of very rich black ores, consisting of stephanite and similar minerals, while nearly the whole mass of "sugar-quartz" was impregnated to a moderate extents with argentite and gold, the latter possibly in a free state. The immense volume of these soft ores more than compensated for their moderate tenor (\$80 per ton was the average for the Bonanza, which included the rich stringers), and much of the greater part of the entire yield of the bonanza was derived from them. They carried a moderate amount of pyrite.

A great part of the space stoped out consisted of fragments of country rock, impregnated, however, with ore and assaying well. These fragments were highly decomposed, but perfectly recognizable by their green color and traces of porphyritic texture. They were not rounded and I never saw traces of the concentric structure which any process of replacement must have imparted to them. On the contrary they were as sharply defined as if freshly broken. Comb structure was not visible in the bonanza on a large scale, but where masses of country rock were favorably placed, the space between them often showed this peculiarity, indicating that the fragments had acted as centers of crystallization for the quartz. * * * * *

* * * * * the material laid down as 'Vein Matter' on this and other sections is crashed rock, so highly altered that its original character cannot be determined with certainty.

Note: The above are some of Becker's better observations on premineral brecciation, what he means by vein-matter, et cetera. Each of his sections is described, and more of the 'same' could be added. For the record, the 25 pages, dealing with the 'Lode' merit zero-treatment.

DLE April 1972