

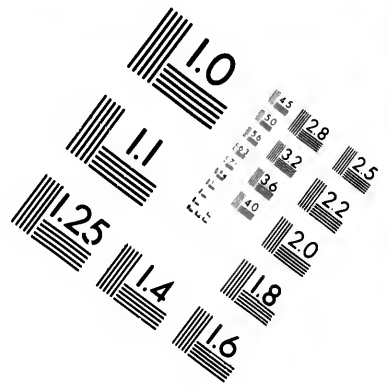
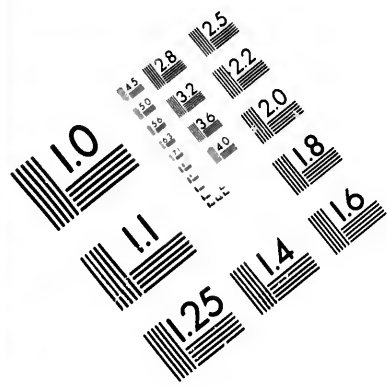
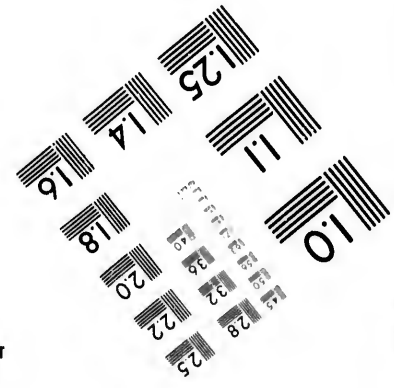
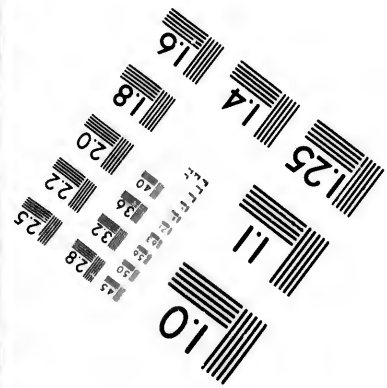
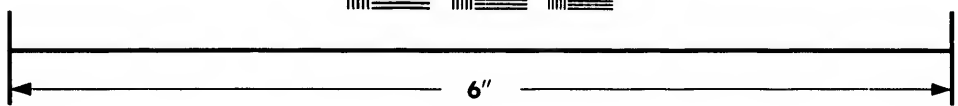
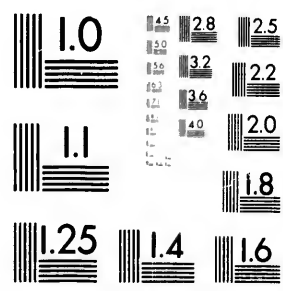


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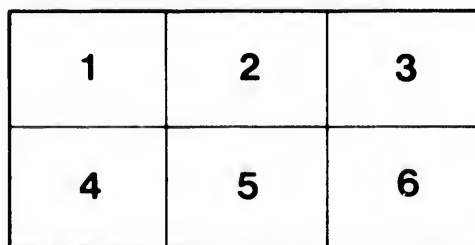
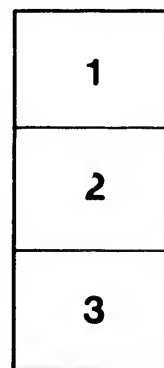
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SECOND EDITION.

KURTZ'S

BRITISH COLUMBIA

Mineral Specimen Cabinet

VICTORIA, B. C., SEPTEMBER, 1888.

It is proposed to make this collection of minerals as complete and attractive as possible, not only to those more intimately acquainted with the localities named in this Catalogue, but particularly to strangers and tourists visiting Victoria desirous of obtaining information in this direction, the exhibit of which is intended as an index to the vast mineral wealth of this Province.

To accomplish this and to make the collection as complete as possible we would respectfully ask mine owners and those interested in thus calling attention to the as yet undeveloped resources, to send us (by mail), specimens, not too large, giving name of location, width and depth of vein matter, assays, if any, and any other information of interest relating thereto. They will be placed in the cabinet and entered upon this Catalogue. A supplementary edition of which will be issued quarterly and mailed to contributors. Address,

KURTZ & CO.,

VICTORIA, B. C.

5559

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LIST OF SPECIMENS.

1. Alice and Emma Mine, Rock Creek.
2. Cariboo Mine, surface, Rock Creek, \$300 Gold.
3. Gold Quartz, Goldstream, V. I.
4. Iron Pyrites carrying Gold, Foster Mine.
5. Iron Pyrites, (no gold) B. C. M. & M. Co.
6. Iron Pyrites, (\$6 gold) Fraser River.
7. Galena in Quartz, \$2.50 Silver, Tongas, Alaska.
8. Galena and Copper Pyrites, Texada Island.
9. Gold Quartz and Pyrite, Cariboo, B. C.
10. Garnet in Mica Schist, Stickeen River.
11. Joshua Mine, Silver Ore, Nicola.
12. Mary Reynolds Mine, Nicola.
13. McCulloch Mine, Nicola.
14. Dunsmuir Claim, Nicola.
15. Joshua Mine, surface, Nicola.
16. Zinc Blende and Galena, Illecillewaet.
17. Copper Ore. Sooke.
18. Galena containing Silver, Farwell Mine, Illecillewaet.
19. Zinc Blende and Pyrite in Quartz, Field, B. C.
20. Galena, (\$66 per ton Silver) Illecillewaet.
21. Gray Copper Ore (\$700 to \$1000) Silver, do.
22. Gray Copper in Quartz, G. Wright's Mine, do.
23. Silver Ore, (\$50 ton) Nicola, B. C.
24. Galena, containing Silver, Selkirks, B. C.
25. Pyrite and Quartz, containing Gold, Cariboo.
26. Pyrite Bastard Rock, B. C.
27. Silver Ore, surface, Nicola.
28. Copper Ore, Howe Sound.
29. Jensen and Fell Mine, Similkameen.
30. Quartz Crystal, B. C.

31. Chalcedony, Queen Charlotte Island.
32. Silver Ore, Hope, B. C.
33. Connolly Ledge, (\$32) Silver, Illecillewaet.
34. Silver Ore, Morrison & Co. Mine, Nicola.
35. Specular Iron, B. Columbia.
36. Micaceous Quartz, B. C.
37. Galena, Selkirk Range, B. C.
38. Pyrite Conglomerate, West Coast, V. I.
39. Antimonial Galena, Alaska.
40. Magnetite, Sooke, B. C.
41. Smith & Donaldson Mine, Illecillewaet.
42. Hornblende, Similkameen.
43. Sterling Mine, Cowichan, V. I.
44. True Granite, Saanich, V. I.
45. Quartz, Illecillewaet.
46. Pyrites, Selkirk Range.
47. Marble, Beaver Cove, Alert Bay.
48. Marble, Texada Island.
49. Sandstone, Cobble Hill.
50. Calcite, Crystallized Limestone, B. C.
51. Sandstone, Kokesailah River, Cowichan.
52. Coal, Robertson & Co.'s Mine, Queen Charlotte.
53. Galena and Pyrites, Omineca.
54. Fossil Coal Measures, V. I.
55. Magnetite and Hornblende, North West Coast.
56. Mica, Similkameen Country.
57. Magnetite, Texada Island.
58. Galena and Pyrites, Illecillewaet.
59. Granular Pyrite, B. Columbia.
60. Galena in Quartz, Cowichan Bay.
61. Fossil Prints on Sandstone, V. I.
62. Pipe Clay, British Columbia.
63. Coarse Grained Galena, Illecillewaet.
64. Fine Grained Galena, Illecillewaet.
65. Silver Ore, Nicola, B. C.
66. Stalactite, from Mineral Water, Bamff, B. C.
67. Copper Ore, Sooke, V. I.

68. Galena in Limestone, Donald, B. C.
69. Eureka Mine, Rock Creek, Douglas.
70. Galena, Kootenay, B. C., (\$45 Silver.)
71. Crystals Pyrite, in Barren Quartz.
72. Galena, Kootenay, B. C.
73. McCulloch Claim, Nicola, very rich.
74. Treadwell Mine, Juneau, Alaska.
75. Stevenson Ledge, North Forks Similkameen.
76. Zinc Blende, Galena and Pyrites, Patterson Mine, Nicola.
77. Silver Ore, Wash. Territory, \$100 ton Silver.
78. Quartz Crystals, B. C.
79. Galena in Quartz, Farwell Ledge, Illecillewaet.
80. Galena, Nicola, B. C.
81. The Joshua Mineral Hill, } assay \$55 Silver.
Nicola, } " \$16 Gold.
82. The R. Dunsmuir, Idahoe } assay \$575 Silver.
Mountain, Nicola, } " \$12 Gold.
83. The Tubal Cain Mineral } assay \$105 Silver.
Hill, Nicola, } " \$10 Gold.
84. The Stevenson Ledge, Hope, very fine, C. Wilson
85. The Shomberg Ledge, Mineral } \$40 Silver.
Hill, Nicola, } \$10 Gold.
86. The Star Mine Ledge, Mineral } \$55 Silver.
Hill, Nicola, } \$17.50 Gold.
87. The Mary Reynolds, Idahoe } \$400 Silver.
Mountain, Nicola, } \$12.50 Gold.
88. Lignite.
89. The Cariboo, 100 ft. from surface, B. C. M. & M. Co.
90. " " " " " "
91. Hixon Creek.
92. Copper Ore from Kamloops, by E. Fletcher.
- 93 & 94. Island Mountain, Cariboo, surface Ore.
95. Consolidated Virginia, Nevada.
96. Silver Ore, from Skeena River, Sutton.
97. Galena and Zinc Blende, Illecillewaet.
98. Copper, Molybdenite, Howe's Sound.

99. Rich Copper from Michigan, 4,000 feet from surface.
100. Gold bearing Galena, Selkirk, (Kootenay) B. Grohman.
101. Copper & Silver Upper Kootenay, Eads Discovery, B. Grohman.
102. Copper and Silver, Columbia Valley, B. Grohman.
103. Peacock Silver, Kootenay Lake, \$1000 Silver, B. Grohman.
104. Howes Sound, Copper and Silver.
105. Skeena River.
106. Sooke Copper.
107. Hemabibe Mineral Paint, Nicola, Coutlie Alex.
108. Kerrinios Simalkameen District.
109. Eureka Silver Ore, 40 feet below surface.
110. Tualameen, Granite Creek.
111. Micaceous Iron, Coutlie's Mine at Nicola.
112. " " " " "
113. McCulloch Creek, Big Bend Gold.
114. Tulameen Gold Quartz.
115. Dunsmuir Ledge, Nicola.
116. Sooke Iron Pyrites.
117. Free Gold Milling Ore, Big Bend, McCulloch Creek, \$138 Gold and \$25 Silver.
118. Gold Quartz, Bonanza Claim, Cayoosh Creek, Lillooet District, James Grey.
119. Gold Quartz, West side Fraser, opposite Pavilion Mountain, 18 feet from surface, Bell.
120. " " " " "
121. " " " " "
122. Quartz, Clinton, \$300 per ton.
123. Sylvanite, from Nicola, Jenny Long, Nicola, Dr. Dearden, Gold \$1000, Silver \$900.
124. Silver King, Kootenay, Silver 160 oz., Copper 35 per cent., A. S. Farwell.
125. Sand from Fraser River, H. Rutland.
126. Sand from Alaska, Carrier.

127. Sand from Alaska, Burn's Bay, G. A. Carrier.
128. Bear Ledge, Burns Bay, Alaska.
129. Georgia, 3 miles from Barkerville, Mother Lode,
G. A. Carrier.
130. Georgia, 3 miles from Barkerville, Mother Lode,
G. A. Carrier.
131. Snow Shoe Mountain, Cariboo, G. A. Carrier.
132. " " " "
133. B. C. M. & M. Co., Cariboo, "
134. Silver and Gold, Juneau, Alaska, "
135. Cinnabar, Judge Harrison.
136. Corbin & Kennedy, No. 1, 2, Crystal Lode,
Illecillewaet.
137. Corbin & Kennedy, No. 1, 2, Crystal Lode,
Illecillewaet.
138. Sulphuret Ore, from Island Mt., S. Walker.
139. Free Milling Ore, " " "
140. Free Milling Ore, Island Mt., Graphite Co., S.
Walker.
141. Alaska Union, Douglas Island, $3\frac{1}{2}$ miles above
Treadwell.
142. Alaska Union, from H. Lipsett, 700 in tunnel,
and pays \$7 per ton.
143. Alaska Treadwell Mine, by John Fannin.
144. " " " "
145. Island Mountain, by John Fannin.
146. " " " "
147. Dufferin Gold, Grouse Creek, by S. Rogers,
Barkerville, \$45 per ton.
148. Geo. Byrnes Ledge, bet. Williams and Grouse
Creek, by S. Rogers.
149. B. C. M. & M. Co., from the pay chutes, assay
\$60 per ton.
150. Black Jack Creek, \$50, S. Rogers.
151. Pinkerton, Lowhee Creek, S. Rogers.
152. Silver and Lead Ore, Kootenay, Rockies, H.
Rutland.

153. Silver Ore, Nicola Valley, H. Rutland.
154. Silver and Galena, Nicola Valley, Stump Lake.
H. Rutland.
155. Gold Quartz, Douglas Island, Alaska, H. Rutland.
156. Copper, Sooke, F. Richards.
157. Concentrated Sulphurets, Alaska.
158. Pulverized Roasted Sulphurets, Alaska.
159. Gold Lutchings, Alaska.
Semi Precious Agates, Polished.
160. Mottled Jasper, from the Rockies.
161. Sardonyx, " "
162. Jasperized Wood, " "
163. Crocivolite, " "
164. Wood Agate, " "
165. Tiger Eye, " "
166. Striped Agate, " "
167. Green Moss Agate, from the Rockies.
168. Striped Red Agate, " "
169. Silicified Wood, " "
170. Specimens of Painted Rock, H. Behnsen. h
171. " " " " J. McCandlis.
172. Petrified Wood.
173. Chalcopyrite (copper ore) Texada I'nd, J. Wilson.
174. Malachite " " " "
175. Magnetite (iron) " " "
176. Joshua Claim, Nicola, Stump Lake, Surface Ore,
W. Gordon.
177. Joshua Claim, Nicola, Stump Lake, 40 Ft. Below,
W. Gordon.
178. Joshua Claim, Nicola, Stump Lake, 60 Ft. Below,
W. Gordon.
179. Joshua Claim, Nicola, Stump Lake, 80 Ft. Below,
W. Gordon.
180. Pavillion Mt., Clinton, Foster Co., Big Slide,
W. Gordon.
181. Iron Ore, Sooke, W. Gordon.
182. King William, Surface Ore, W. Gordon.

183. King William, 30 feet below Surface, W. Gordon
 184. No Surrender Co., Stump Lake, W. Gordon.
 185. Otter Tail Co., Otter Creek, W. Gordon.
 186. Alaska Ore.
 187. Bear Ledge, 12 feet wide, Alaska, Carrier.
 188. Savage " " "
 189. Valentine Ledge, " " "
 190. Ophir " " "
 191. Argen, Rock Creek, assays \$90 Silver and \$25 Gold, by Capt. Irving.
 192. Copper Ore, Kootenay, by R. T. Galbraith.
 193. " Spallumcheen "
 194. Arsenical Copper.
 195. Black Jack, 25 feet from surface, G. Bervin.
 196. Cariboo Co., Rock Creek, Free Gold, C. G. Ballentyne.
 197. Tubal Cain, Nicola, 200 Oz. Silver, Wm. Wilson
 198. Chalcopyrites, Spring Ridge, Victoria, by H. Behnsen.

MONTANA ORES—sent by Saml. Adler.

199. Morning Star, 100 oz. Silver, 2 oz. Gold.
 200. " " "
 201. " Manganese and Lead, 2 oz. Silver.

MONTANA SPECIMENS.

202. Mining Star, 100 oz. Silver, 2 oz. Gold.
 203. Granite Co., Granite Mt., Ruby Silver \$18.
 204. Alice, 122 oz.
 205. "
 206. Clear Grit.
 207. Stuart Mine, near Butte City, Wire Silver.
 208. Lexington, near Butte City, Copper Ore.
 209. Peacock Ore, Stuart Mine, \$1500 Silver, 40% Copper.
 210. Home Stock, Carbonate Ore, \$150 Silver, \$20 Gold.
 211. Drum Lummon, 35 oz. Silver.
 212. Bi Metallic Antimony and Iron, 200 oz.

213. Big Bonanza, 500 oz. Silver, 40% Copper.
214. Speculation Co., \$200 in Copper. 40 oz. Silver.
215. Warm Spring Ledge in Lime Stone formation
\$2200, Silver and Gold.
216. Hope Mine. Phillipsbury 600 oz.
217. Moulton, 155 oz.
218. Gray-Copper and Sulphurate, 40 to 100 oz.
219. Prospect Shaft, near Granite Mt., 140 oz. Silver
and Lead.
220. Bi-Metallic Co., Pink Mandilode and Gray Cop-
per, \$1800 Silver.
221. Hope Mine, \$2000 Gold and Silver.
222. Gold Hill, 40 oz. Silver, 30% Copper.
223. Parrot, 200 oz. Silver.
224. Bi-Metallic, above the water line, 500 oz. Silver.
225. Cœur de Laine, 140 oz. Silver.
226. Rim Silver, Retorted by the Miners.
227. Select Home Stake, \$1200 Silver, 45% Lead.
228. Ottawa Ledge, 20 miles from Salt Lake, \$1200
Silver.
229. Rare Specimens of Wire Silver Quartz.
NOTE—These Montana Specimens are placed
in the cabinet for comparison with B. C.
Ores.
230. Native Silver (arquerite), Geo. Fairbrother.
231. Native Copper, A. A. Green.
232. " from Lowhee Creek, Carrier.
233. Monte Carlo Mine, North Thompson, F.
Allingham.
234. Illecillewaet Surface, Silver and Galena Ore.
235. Iron Ore, Sooke, F. Richards.
236. Copper Ore, B. C.
237. Corbin & Kennedy, No. 2 Illecillewaet, Corbin.
238. Gold Quartz from Omineca, J. May.
239. Hebrew, Bella Bella, \$40, J. Wilson.
240. Rivers Inlet, from John Wilson.
241. Queen Charlotte Coal, John Wilson.

242. Salt Spring Island Coal, John Wilson.
243. Texada Copper, "
244. Free Gold Quartz, Queen Charlotte, John Wilson
245. Black Sand, from Cape Scott, north end, V. I.,
by W. Huson.
246. Ledge on Island in Queen Charlotte Sound,
Assays \$5 to \$120 per ton, by W. Huson.
247. Ledge on Island in Queen Charlotte Sound,
Assays \$5 to \$120 per ton, by W. Huson.
248. Bell Mine, Butte City, Silver, Geo. Beckingham
249. Granite Mine, "
250. Minnie Moore, Wood River, "
251. Queen of the Hill, "
252. Fresco Mine, Utah, "
253. Horn Blend with Crystallized Iron, from the
Sooke Iron Mine, F. Richards.
254. Iron, "
255. Lillooet Lake, Sulphuret, a large deposit, by
A. A. Green.
256. Sulphuret Gold Ore from Black Jack, Jos. Mason
257. Magnetic Iron, Sooke, F. Richards.
258. Galena from Slocam River, Kootenay, \$700 per
ton, E. Fletcher.
259. Garibaldi Copper, Beechy Bay, F. Richards.
260. Argentiferous Ore, the Queen Mine, Yale,
Assays 36, 80 and 211 oz. to ton, Wm. Teague
261. Pondra Mine, Galena and Silver \$18, and 70%
Lead. Tait.
262. Galena from Revelstoke.
263. Asbestos, Thetis Lake.
264. Star Mine, Nicola, 100 feet down, Henderson.
265. Galena Ore, from the Jenny Long, Dr. Deardon,
\$50 Silver, \$20 Gold.
266. Bonanza, Kettle Falls, Colville, W. T., Argen-
tiferous Galena, 55% Lead, J. A. Meyers.
267. Iridescent, Summit District, Colville, W. T.,
Gray Copper, 218 oz. Silver, J. A. Meyers.

268. Daisy Summit District, Colville, W. T., Chlorides of Silver, Carbonate of Lead, 76 oz., 127 feet down, J. A. Meyers.
269. Qua Chawelah District, Chawelah, W. T., Pyrites of Copper with Silver, J. A. Meyers.
270. Gold Hill, Colville, W. T., at 100 feet \$200 Gold, \$15 Silver, J. A. Meyers.
271. Young America, Colville, W. T., Argentiferous Galena, 80 oz., 40 % Lead, J. A. Meyers.
272. New Jewrusalem, Kootenay Lake, B. C., Argentiferous Galena and Antimony, J. A. Meyers.
273. Mingo Mine, Kettle Falls District, Colville, W. T. Nickel and Silver, J. A. Meyers.
274. "Iridescent," Summit District, Colville, W. T., Gray Copper, 50 oz. to 200 oz., J. A. Meyers.
275. "Old Dominion," Colville, W. T., Black Sulphuret of Silver, 50 oz., J. A. Meyers.
276. "Ruby," Kootenay Lake, B. C., Galena and Quartz, J. A. Meyers.
277. Gold Hill, Colville, W. T., Gold Ore at Surface, J. A. Meyers.
278. Stephanite, Austin, Nevada, W. Hick.
279. Copper Ore, Cornwall, (West Seton), England, W. Hick.
280. Salt Spring Island, Gold \$8, Silver \$3, Koch.
281. Silver, Cherry Creek, Tait.
282. Joshua Mine, W. Wilson.
283. Osmium, from California, by W. Atkins
284. Scotch Giant, Jubilee Mt., Kootenay, J. W. Kellie
285. Tulameen River, Bonanza Queen, \$113 Gold and \$42 Silver, Jenson.
286. Heavy Spar, Sulphate of Baryta, containing Copper, Jubilee Mountain.
287. Gold Ore, Cariboo Co., Rock Creek, very rich, J. R. Tait.
288. Gold Ore, Victoria Mine, Rock Creek, J. R. Tait.

- T., Chlo-
 d, 76 oz.,
 W. T.,
 A. Meyers.
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 C., Argen-
 A. Meyers.
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 e, W. T.,
 A. Meyers
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 lena and
 Surface,
 England,
 Koch.
 W. Kellie
 Gold and
 containing
 ery rich,
 k, J. R.
289. Gold Ore, La Fave Mine, Rock Creek, J. R. Tait
 290. Gold Ore, Victoria " "
 - Rock Creek, Assay \$400..
 291. Gold Ore, Ming, Rock Creek. "
 292. Gold Ore, S. King, Rock Creek. "
 293. Galena, Bock Creek, "
 294. Silver Ore, Chloride, Diamond Hitch Mine,
Cœur de Lêne, assay 350 oz. Silver.
 295. Gray Copper, Illecillewaet, Isabella Mine, assay
975 oz. Silver.
 296. Black Jack Co., Wm. Creek, 33 feet from Sur-
face, 3 foot vein, Assay \$94.
 297. Pony Creek, Cœur de Lêne, Free Gold, Atkins.
 298. Tin Ore, Cornwall, England.
 299. Ruby Silver, very rich, Bristol, near Pioche, S.
E. of Nevada, Geo. B. S. Beckingham.
 300. Silver and Lead Ore, Bingham Canyon, Utah,
Geo. B. S. Beckingham.
 301. Copper and Silver, Bay Horse, Idaho, Geo. B.
S. Beckingham.
 302. Native Copper, " " "
 303. Coal from Nicola, on north Cold Water, 45 miles
from Spence's Bridge, Mines owned by A. A.
Green & Co.
 304. Galena from Lapland, Wilson.
 305. Cape Diamond Rock from Quebec, Wilson.
 306. Hot Spring Diamond, Arkansas, Templeman.
 307. "Silver King," Toad Mt., 1200 oz. assay Silver,
R. D. Atkins.
 308. Tough Not Lode, Morrel & Doland, Toad Mt.,
R. D. Atkins.
 309. Silver King, Toad Mt., Atkins.
 310. " " very fine, R. D. Atkins.
 311. Amethyst with Pyrite, Port Arthur, Silver Island.
 312. Fine Specimen of Free Gold, Quartz, from
Bonanza Mine, Caycosh Creek, Lillooet, J.
McB. Smith.

313. Sulphuret Ore, from the Treadmill Mine, Douglas Island. Templeman.
314. Concentrated Sulphurets " "
315. Roasted and Pulverized Sulphurets "
316. Gold Leachings " "
317. The First Concentrates from Stump Lake, Nicola George Henderson.
318. Garnets from Siwash Creek, Yale, G. Stout.
319. Copper Pyrites and Zinc Blende, Texada Island, J. Orr.
320. Stromeyerite from Aspen, Colorado, Assay \$7000 per ton, G. B. Wright.
321. Black Jack, Zinc Blende from Colorado, 60% Zinc, G. B. Wright.
322. Lead Corborates, from Kootenay Lake, B. C. Assays 139 oz., G. B. Wright.
323. Galena Ore from Little Donald Mine, Kootenay Lake, B. C., Assay 130 oz. Silver per ton, G. B. Wright.
324. Concentrates from Hall's Mine, near Toad Mountain, 400 oz. Silver and 25 % Copper, G. B. Wright.
325. Concentrates from Corbin & Kennedy, Illecillewaet, 350 oz. Silver, G. B. Wright.

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THE QUARTZ AGE.

Mines will Prove the Industry of the Future.

The mining history of California and other gold producing states is being repeated in British Columbia. The placer mines, the first discovered, were for many years all that was thought of, but as they became gradually worked out and the bars and gulches yielded a steadily decreasing amount of the precious metal, the undaunted miner sought for the source of supply among the mountains on the head waters of the auriferous streams. It is useless to close our eyes to the fact that the yield of the placer mines of British Columbia is growing less year by year, and if another Cariboo be not discovered, alluvial gold will not in the future constitute such a material source of wealth as it has in the past. But with the decline of the placer mines will come the development of the inexhaustible wealth of our quartz veins, and with quartz mining will come permanency and stability in the most alluring of all enterprises. Difficulty of access and the lack of capital have been thus far the great obstacles to quartz mining. Until the opening of the Northern Pacific, the rich mines of Montana, Idaho, etc., were practically unknown and the most of them still undiscovered; to-day they yield many millions to the wealth of the country and afford remunerative employment to hundreds of thousands of people. British Columbia is in a transition stage. The days of placer diggings, as our sole reliance, are passing away, and the quartz age is dawning. Across the boundary to

the south of us, and in Alaska to the north, the rocks, obedient to the demands of enterprise and capital, are yielding up their treasures with a profusion almost incredible. Nature drew no line of demarcation at the boundary. The rocks of our three hundred thousand square miles of mountain and valley are of a similar formation to those of the gold and silver producing districts of the United States, and the day must come, and that too before long, when capital and experience combined will utilize the wealth which has been so lavishly bestowed upon us.

FORMATION OF VEINS.

Gold veins are the result of emanations from great depths below, which, ascending through rifts and fissures of the rocks, were condensed or deposited upon the walls. The great argentiferous lodes of Mexico and South America, the most productive of all known in history, can be followed not more than *six or eight* miles; while in California a vein or mother lode is distinctly traceable on the surface a distance of more than sixty miles. The general course is nearly northwest and southeast, or 40 degrees west. The dip is usually eastward and at an angle of 45 or 50 degrees to the horizon. The quartz of the mother lode (west of the Rocky mountains, of which we are now writing) is usually hard and white, and in most of the pay chutes near one wall or the other ribbon rock, or rock with numerous black seams lying parallel with the wall is found. Streams seem to have made their beds in places where the mother lode is split up into a number of branches. True fissure veins are continuous in depth, and their metalliferous contents have not decreased at any depth which has yet been obtained by mining. The great majority of the auriferous quartz lodes of California are gash veins. Segregated and

gash veins, and irregular deposits of ore, generally thin out and disappear at a not inconsiderable depth. Pay chimneys are usually large and regular, and are either vertical or have a slight dip to the north.

Feldspar, carbonates of lime and tellurets—When one of these metals is found there is a certainty of the presence of the others at a short distance, and whenever these metals are met with, the speedy appearance of ore may be relied upon. (NOTE—Telluride of gold must be subjected to roasting before amalgamation; iron and arsenical pyrities containing gold are subject to the same conditions.—Kustel.

HARD FACTS.

Sulphurets constitute the main reliance for the future, and the working of any mill that cannot extract the gold from them will not be permanently profitable. The dark reddish appearance of croppings is caused by the oxidation of the iron pyrities encased in the quartz. It is a maxim that "general rules guard against loss in mining, while particular rules increase the profits." It is infinitely cheaper to pay for sorting ore than to send it indiscriminately to mill for crushing.

One of the fundamental errors in mining is to make a false estimate of the value of the mine, the amount and richness of the ores, and the cost of extracting them.

EXTENT OF VEINS.

The thickness of a vein cannot be known until it has been opened to a considerable depth and traced on the surface for the length of the claim, or as far as it can be followed. Tracing on the surface is more cheaply done than sinking, and more likely to intersect any "chimneys" of ore that may exist in the veins. The extent at the surface is commonly in ratio of depth.

Where veins come to an end they usually split into a number of small seams, which disappear as they are followed ; but when only one seam is found the vein generally continues. The Comstock was often rich for hundreds of feet in length, and then barren for a greater distance.—Ross Browne.

THE MOTHER LODE.

In British Columbia the Mother lode is supposed by many to be the "Bonanza," upon which a great many locations have been made and considerable prospecting done by individual miners and incorporated companies.

The probable or indicated course of the Bonanza may convey the idea by hypothesis of a vein or feeder for the creeks and gulches in which the rich alluvial deposits have been found from the source and course of the quartz lodes ; but not until further developments have been made can the identity of the lode, as now conjectured, be definitely established. The probable course is from Lightning, Chisholm, Antler, Canon and Cherry Creeks, on the dividing mountain ridges and in the ravines and gulches of Cariboo, from Keithley's creek over Snowshoe mountain to Antler, from Antler over the Bald mountain to Williams Creek, thence over the Richfield divide to Jack of Clubs lake, from the lake over Island Mountain to Willow river and Canyon creek bordering on the Fraser river.

OMINECA,

still further north, was not only rich in alluvial gold deposits but lumps of native silver were found in the creek. Here also the quartz lodes are well defined. On the lower Fraser and in the Selkirk range we have the silver peaks of Yale, Hope and Okanagan ; and last, though not least, from the northern limits of the pro-

vince at Cassiar, we hear of the rich quartz discoveries which proclaim the new field for rich and

COMPETITIVE EXPLORATION.

The same indomitable will possesses men now as when in 1860 they pushed their way up to Cariboo. Perhaps some of those same pioneers, wearing the identical snowshoes, are retracing their steps over the mountains and through the gulches, creeks and ravines, which latter shall again be made to yield their hidden treasures in shape more tangible, in extent more certainly defined, and in exhaustable depth more prolific and almost everlasting.

In prospecting for quartz if there is granite, slate, porphyry or limestone, metalliferous veins may be found, but if the rocks are volcanic it is useless to look for anything valuable where it prevails exclusively. The color of the earth is also an important consideration, as over a metalliferous vein there is usually a strip of earth, about the width of the vein, different in color from the surrounding earth. In California nearly all of the gold-bearing veins are quartz, but gold is often found in slate. In Colorado it is found in feldspar and sandstone, and in Idaho in porphyry.

QUARTZ PROSPECTORS

follow the foot of the mountain range and examine the sand and gravel in the beds of streams. These beds are generally dry in summer. If the gravel consists of granite or slate with quartz pebbles, they follow up the stream, breaking open every piece of quartz to see if it contains anything valuable. As they ascend the quartz is more abundant and the pieces become larger, until reaching a certain point, where no more is found in the bed of the stream. This shows that

the vein is not above, but in the sides of the stream, which are now carefully examined.

MISTAKES MADE.

Nine-tenths of the lodes which yield rich specimens do not pay for milling. The greatest mistake made by quartz miners is that of erecting a mill before the vein has been well opened and its capacity to yield a large supply of good rock established. It is better to pay for development and pile up the quartz than to prematurely pay for machinery and pile up the assessments. The latter is a suicidal course and too often pursued by incorporated companies.

Custom quartz mill owners will as surely follow in the wake of developed mines and contract for the manipulation of accumulated ore as does the heathen chinese with a portable sawmill on his back follow a load of cordwood through the streets to its destination having a manipulating contract in view.

THE FIRST QUARTZ MINING

in California was by Mexicans in 1849-50, they introduced the *arastra* (man or Mule power), and by carefully assorting the ores containing fine gold from the surface, obtained by this slow method very satisfactory results.

The next epoch will be the quartz age. The new "Ophir" will be found in the mountains—the gold in its matrix quartz. This will be the future field for enterprise, labor and capital—the great, grand and glorious future for British Columbia. Already the vanguard is in the field. Already the cry of "quartz," and rumors of quartz fills the air, and soon the ringing bang of quartz crushing stamps will reverberate from the valleys, gulches and river sides, and the stability of an enduring industry established in the pro

vince, which, unlike exhaustible and impoverishing placer diggings, will bring population, wealth and permanency of occupation into the country.

The public are invited to examine the cabinet of ores as classified in this catalogue, whilst mine owners and all who are interested in exhibiting the mineral resources of British Columbia, are again solicited (see first page) to send specimens of interest from their respective localities, which will be properly displayed and catalogued in the next (3rd) edition.

I kindly thank those who have contributed specimens and otherwise assisted me in making this collection of minerals the most complete and attractive in the Province.

J. KURTZ.

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\$85 00

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