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REPORT ON THE MCKESSON MINES

WHITE HILLS ARIZONA

By  
Chas. W. Raymond, M.C.E.

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The McKesson Mines are situated in the INDIAN SECRET Mining District, White Hills, Arizona, in the northwestern portion of the County.

The district is accessible from Kingman (Elevation 3260) on the main line of the Santa Fee R.R. and by the Arizona & Utah narrow gauge R.R. 23 miles from Chloride. Its present terminus and thence 25 miles from Chloride over an excellent wagon road with no heavy grades, to the Mining Camp of White Hills (Elevation 3100).

The McKesson Mines consist of 9 mining claims lying in four groups, as follows:

1st -- "Black Spar" 1500 by 600 3800 ft. north of White Hills.

The "Cornicopia" 1500 by 600 and its easterly extension.

2nd -- The "Good Luck" 1500 by 600 about 600 ft. north of the 1st group and 4400 north of White Hills. The "Grant" 1500 by 600 its westerly extension the "Black Spar" 1500 by 600 and third claim called

3rd -- The "Bonawea" 1500 by 600 lying alongside and parallel to the Grant about one mile north of the town.

The "Excelsior" 1500 by 600 located as the Little Hootsey Tootsey.

4th -- The "Orion" 1500 by 600 the easterly extension of the above.

This latter group is about 2500ft. north of the Grant group or about  $1\frac{1}{2}$  mile north of White Hills.

These claims are located on ledges approximately parallel to each other, at the foot of the northern area of the White Hills Mts. which here runs about north, the ledge having the general course of east and west crossing the general direction of this portion of the range. The range at this point makes a turn to the east, at the turn or elbow and on the south slope of the east and west arm are situated the various mines of the White Hills Mining Co. which made the White Hills Camp quite prominent in mining circles.

The ledges of the McKesson mines dip to the north; that of the "Black Spar" dips 35 degrees northerly from the horizontal. The "Cornicopia" ledged dip 35 to 40 degrees northerly; on the Grant, the dip is 40 to 45 degrees westerly, while the dip of the Excelsior and Orion ledge is about 90 degrees or vertical.

North of this ledge there seems to be no mineralized rock. Certainly none has been found therefore the Excelsior ledge would seem to mark the northern limit of the ore bearing zone of the Indian Secret Mining District.

The ledges are all true fissures lying in an eruption formation, granite and fosphysite; the former in many of the out cropings being quite Schystose. The vein filling or gauge is generally quartz, rarely massive at the present depths and accompanied by Phorphys and Porphysitic material with talcy gauge

on the foot and hanging walls, which makes excellent breaking ground. The ore drills easily with occasional hard places locally called "Nigger Heads" and in a general way may be called "easy ground" hence can be mined cheaply.

The contents of value are gold, silver and occasionally lead and with the exception of the "Black Spar" ledge in which gold values are greater and silver less, the silver predominates largely and is in the form of a chloride with rarely cases of Metallic Silver.

Much of the ores will pan showing free gold on fine particles and yield the gold and silver values up to 80 to 85 per cent by combination process stamps and pans Amalgamation.

The Black Spar ledge carries a large percentage of gold while the ledge north, silver is in excess. The gold value generally being small. On inspection of the assays and records of shipments to samples and smelters will show this more particularly.

On these claims there is a known practically exposed ledge of length of over 7000 ft. not including the ledges on the three so called "outlying claims" "Black Metal", "Bonawea", & "Good Luck" which were not specifically examined but upon which the ledges are known to exist and from some of the workings (of which first class ore has been found. These ledges are strong with well defined walls, and the pay portions vary from 18 inches to 4 ft. width while in several cases the width between walls is 5 to 30 ft. the latter being the ledge width between walls. At the "Black Spar" the character of the ores is more particularly described in the description of each claim hereinafter. The topography of the district is like much of this part of the territory.

The Sacramento Valley running southeasterly from the Colorado River on the north, through Mohave County to and into Yuma CO.

This is a detrital valley lying between the "Blue Ridge Mts." on the west and the White Hills Mts. Corbat, Hualapai Mts. on the east a length of over 130 miles. The elevation at Kingman is 3260 ft., while at White Hills it is about 3000 ft. the valley sloping towards the Colorado River. Going north the grade and general surface is such that Rail Road construction is very feasible. The Soil is generally sandy but in no case is the sand more than a few inches deep, in the wagon roads the roads are in good condition and can be made excellent at nominal expense. A wagon can be driven almost in any direction, where no road exists, so free and uniform is the general surface. Cacti of many varieties. Gruce wood and Yucca trees ( here called Joshuas) form the only growth in the valley. The Yucca affords a fair fuel but is far from plentiful. The district is practically devoid of timber for fuel and building purposes but transportations facilities remedy this to a great extent. Water is very scarce so far as springs and streams are concerned but it has been found that a plentiful subterranean supply exists. At kingman water is found by drilled wells from 80 to 100 ft. At Chloride about the same depth, while at White Hills several shafts have developed the water supply at 300 to 500 ft. depths, the water being of excellent quality.

On the Excelsior claim it is thought at 225 to 250 ft. the main shaft will be in water the bottom now at 185 ft. is quite damp. The summer season is quite warm although comfortable in the shade; the nights are comparatively cool. The winter temperature reaches the freezing point although the north winds being excessively dry are very chilling in effect. Snow is uncommon and an inch or two the maximum which disappears in a few hours. July to Sept. inclusive the most rain falls but the amount is slight. Throughout the year

mining operations can be concluded without interruption. The White Hills mineral deposits lie in the broad belt which begins at the Colorado River in the northwestern part of Mohave County and extends 500 miles southeasterly across the territory to and beyond Tombstone and the southeast. The White Hills mines have been largely operated by "Chloriders" who have excavated the richest portions of the pay streaks to depths on the ledges varying from a few feet to 250 ft. in a few cases. This ore has been again culled or sorted to as high a grade as possible in order that it would yield a profit after the excessive charges of transportation, sampling and treatment have been deducted. As a consequence ores yielding less than \$75. to \$100. per ton were not shipped, and the lower grades thrown on the dumps. When milling plants were installed in the district ores of a lower grade could be worked and a further sorting of dumps took place and the product was sent for reduction to the nearest mill. Extensive and systematic development was carried on in but few properties. The White Hills Co. sunk the Occident shaft to the 700 ft. level encountered water at about 500 ft. ran drifts on the several levels above that depth and extracted a large amount of ore that yielded excellent returns. On the hill just north of the town leases were given to many "Chloriders" who burrowed the ledge to moderate depths and extracted a large tonnage of high grade ore. The company had erected a combination mill (equipped to 40 stamps) after paying \$1,750,000.00 for the property and expended over \$500,000.00 in development of mines and water supply but so much extravagant expenditures occurred that trouble and estrangements forced the closing down of the property. The Black Spar claims this ledge has a course of about N. 90° E or E & W is exposed by open cuts and shallow shafts 1200 ft. along the ledge. The Emma mine is the easterly extension of the same ledge and on this a shaft develops the ledge 100 ft deep fully 800 ft further east. The walls of the ledge are 25 to 30 ft apart with a dip northerly of 35° between the walls the vein filling is quartz and Porphyry. The pay shoot turn diagonally from the foot walls to hanging walls in a north-westerly direction and there dip from 45° to 60° northeasterly. These pay shoots are about 40 ft. apart and 40 to 50 ft. in length diagonally along the hanging and the foot walls, but it is 30 to 4 ft. wide. When the diagonal pay shoots start and end, these diagonal pay shoots will average 20 to 3 ft. in width and the ore in both shoots is well defined and easily separated from the walls. The ore in this claim shows higher Gold values than in any others. Samples taken from the ore in several pay shoots exposed in shallow shafts and cuts assayed 1-1/10 oz gold 5-2/10 oz silver or a total value of \$30.60 per ton there is on the various dumps about 100 to 125 tons of ore from these samples were taken giving a fair average of the whole. These assayed 1-8/10 oz gold 2-8/10 oz silver total value per ton \$37.40 (silver at 50¢ per oz) lead is present in the ore to a small extent as will be seen by the returns from shipments. The following assays of ores made during the development work I have obtained are reliable. See list of assays.

The following shipment record is given and show the value of large quantities which of course are of ore sorted to high grade, the culls being left on the dumps.

See Shipments.

It will be seen by inspection of the average of dumps values 1-8/10 oz gold 2-8/10 oz silver and the shipment values 3-5/10 oz gold 13-2/10 oz silver that can be extracted for milling on the ground having an average value of \$37.00 per ton, but if the value of the ore in the dumps (after picking out the best) be taken as a minimum or \$37.00 and 80% of that can be save in reduction it will be seen that very profitable operations can be carried on. As to the ore reserves, it is not practicable to estimate the tonnage as the development is but numinal. As a rough approximation we may assume that 1200 ft of the ledge 800 ft wall shows 1 foot of ore on each wall and that the diagonal ore shoots will occur every 100 ft. measuring 40 ft in length and averaging 2 ft width of pay ore. This

will give total length along two walls 1600 ft x 1 ft wide equaling 1600 square ft, total length of diagonal 12 x 40 equals 480 ft. x 2 ft, 960 square feet (indicated by ditto marks in original document copied form) or a total of 2500 square feet taken for 100 ft. depth at 2500 x 100 ft equals 250,000 cu. ft. 250,000 ft at 13 cu. ft. per ton equals 19,230 tons.

In the next group laying north and about 600 ft distant are the Cornicopia and "good Luck" (formerly the W. J. Bryan and Jim Blaine) claims. The corner of the main ledge through these claims is about N. 70° W. about 50 feet north is another strong ledge running parallel to the main ledge intersecting the main ledge, through these claims is about N. 70° W. about 50 ft north is another strong ledge running parallel to the main ledge intersecting the main ledge, about 270 ft. east of west end of claims is another ledge crossing the claims diagonally on a course of N. 80° E. The main ledge is narrow 12 inches to 18 inches in width but the pay streak 2" to 6" contains high values, the ledge lying north is tracable 300 to 400 ft east from the west end of claim and there has been some development upon it, one shaft 70 ft deep from which a small lot of high grade ore has been shipped, it presents the same characteristics as the main ledge but not quite as large. The diagonal or cross ledge is a strong one with well defined walls, it will average 2 ft to 6 ft in width with a dip 45° N.W. On this ledge several shafts have been sunk as follows: beginning at the west end of claim 20 ft east, 35 ft deep, 100 ft from this 10 ft deep. 125 ft further east 70 ft deep, these are all on the ledge, 95 ft east from the last is another shaft 35 ft deep on the ledge and 40 ft east of this shaft on the ledge 50 ft deep. All of these shafts expose a strong ledge 2 to 6 ft wide and from which considerable high grade ore has been shipped by the "Chloriders" Some of these I have been able to get records. One lot 2,088 lbs yielded 15/100 ozx gold 277-8/10 ozx Silver \$153.45. Another 1,027 lbs 15/100 gold 216-9/10 oz Silver \$123.45 The last from 70 ft shaft. On the main ledge much development has been done and a large amount of high grade ore shipped. The ledge has been exposed in many places throughout the length of the Cornicopia and also on its east extension. The good Luck records of shipments are lacking but that of one shipment is 2,390 lbs 25/100 gold, 667 ozs. Silver \$348.50. I am informed that over \$2500.00 has been received by lessors "Chloriders" which would mean over \$3,500.00 has been taken out. Nearly all from surface and 70 ft down on the place. The list of shipments accompanying this report shows the general values of the ores which of course were worked to as high a grade as possible. The following are the shafts on the main ledge commencing on the west end of claim 100 ft easterly from west end of shaft No. 1. 40 ft on ledge, further east shaft No. 2 - 100 ft. 75 ft easterly No. 3 or main shaft 170 ft on the dip of ledge, and 71 ft along the ledge in a drift. 70 ft east shaft No. 4 - 135 ft on ledge. By reference to the accompanying sketches it will be seen that the ledge has a dip of 30°, the first 30 ft of shaft was sunk at a slope of 45° until the ledge was cut and from this point the shaft follows the ledge. At 46 ft the ledge was found interrupted by a "Fault" the first portion have been thrown down or depressed by volcanic or other force leaving the continuing of the ledge some 6 ft above, the shaft was then driven on a level until the ledge was again encountered about 30 ft further and a drift or a "raise" driven backward and along the ledge till the first "fault" was met. At 43 ft the ledge was again found cut off by "fault" No. 2. The same method was followed until the shaft cut the ledge and the "raise" driven backward to the faulting point. In this the ledge was faulted 18 ft. from this point the shaft continues 80 ft when it turns to the right (east) until at 24 ft from the surface the shaft is running N. 60° east or about right angle to the course of the first 50 ft. From this shaft stopes have been driven and ore taken out 20 to ft 50 east of and the full length of shaft while from the

west side for about 80 ft down the ore has been stoped, for 20 ft. to 40 ft. from the shaft the ledge has averaged 12 to 18 ft. width and appears to be increasing in width with depth. The ledge is easily mined, the ore being free from the walls. Samples were taken from the ledge from 150 ft to 240 ft in shaft. The best of all the exposed ore having been carefully extracted by the "Chloriders" the average of these samples assayed 8/10 (in pencil above 0.08) ozs gold 39-4/10 ozs silver or \$21.30 (silver at 50¢ per oz.) At the several shafts samples of all the dumps were taken and the average of which assayed gold 6/10 oz silver 21-8/10 oz or \$22.90 there is about 110 tons of ore in the dumps these dumps have been sorted over several times and the best ore shipped. As near as I could determine the shipping ore in the definitely defined chimneys while fully 75% of all the vein filling is milling ore. The values being quite uniformly distributed. Any estimate of the ore in the mine would be approximate only and may be stated to be the contents of a ledge 300 ft long with an average width of 12 ft to 18 ft for which depths as has already been reached or 170 ft down the average value of ore taken out by "Chloriders" may be approximately ascertained by comparisons of shipping records and assays of material left on dumps, the average value of such shipments of which I have records is 23/100 oz gold 375-5/10 silver or \$183.35 per ton of which ore 41,283 lbs or 20-6/10 tons were shipped a total value of \$3,777.00. On the dumps there is 110 tons of \$22.90 ore value \$2,519.00, hence the 130-6/10 tons are worth \$6,296.00 or \$48.00 per ton which from this date would indicate the value of the ore in the ledge before extraction. To what extent this value will obtain throughout the ledge or to what depth can only be definitely determined by development. The data at hand may be summed up as follows: At 170 ft. depth on ledge, the ore assayed \$21.30; the dump samples assayed \$22.90. Shipping records from 3000 ft. length of ledge show average values of \$183.35 which added to what was left on the dumps gives \$48.00 per ton as the value of the ore taken out in the search for the best. The assay (\$21.30) of the ore at present showing in the lower works may be taken as a fair average or minimum value of the general ore along the ledge.

The Good Luck was not examined for values, as I was informed that it is to be considered as an addition to the properties, regardless of value. But I may add, that, judging from the work done, the ledge and spurs (see plan) as exposed in the ten or more shafts, are identical in character with the Cornicopia ledge. Much ore was taken from these by the "Chloriders" of which I have but one record; 2390 lbs. gold 25/100 oz. silver 667 oz or \$338.50 per ton (silver at 50¢) When the "Chloriders" came upon the first fault in the ledge, they considered the ledge at an end and either started another hole or quit entirely. The various shafts are as follows: beginning at west end of Good Luck (Jim Blaine) claim 70 feet deep; 10 ft., 15 ft. 10@ ft. 35 ft. 35 ft. 60 ft. and 10 ft. On the north spur, 10 ft. 35 ft. On the next spur south, one shaft 40 ft deep. These are all sunk in the ledge.

I can see no reason why the Good Luck should not prove as good a property, upon development, as the Cornicopia.

Grant Group - This group consists of three claims, Grant, its eastern extension, the Black metal, and the Bonanza, located on a parallel ledge to the south of the Grant. This group lies about 600 ft northeasterly from the Cornicopia group. On the Black Metal little development has been done, but sufficient to show that ledge runs through the greater part of the claim. As this claim and the Bonanza stand in the same relation to the Grant as does the Good Luck to the Cornicopia, I.E. As claims additional to the original properties, no samples were taken from the ledges on these claims. The ores on the Black Metal are, so far as known at present, lower in grade than the Grant ore, but for milling on the ground, they may be considered as good; the same may be said of the Bonanza. While not much shipping ore has been found, there is a large quantity of milling ore.

On the Black Metal there is, about 750 ft from the west end of claim, a shaft 60 ft. deep, at the bottom of which drifts 20 ft long have been run east and west from the shaft, and from which good milling ore was taken. The ledge dips about 65° north. West of shaft is a small shaft 60 ft. deep, and east of shaft are two more small shafts 8 ft. and 6 ft. respectively. In all of these, the ledge shows strong and with well defined walls; the ledge is 4 to 6 ft. wide, and the ledge filling is quartz-porphry. The same character of ore is found on the Bonanza. On the Bonanza claim the following are the developments; begining at westerly end of claim, about 500 ft. east, 4 ft. shaft, then 10 ft. 40 ft. 20 ft. 15 ft. shafts. On a small parallel ledge about 150 ft north is a 10 ft shaft which shows good ore in a small ledge. The Black Metal for 3/4 of its length lies on a flat; the ground shops upward from there gradually, the entire length of the Grant; the highest point being not more than 75 ft. above the flat.

On the Grant considerable development has obtained. The course of the ledge is N. 90° E. (east and West) The dip 40° north; the ledge 3 to 4 ft. wide. The foot wall is white porphyry; between the wall and the ledge is a strong gauge of white tale; the same gauge appears on the hanging wall. The ledge is composed of quartz-porphry. Silver in form of chloride is present and predominates; the gold is fine and varies from 1/10 oz to 8/10 oz per ton, while the silver runs from 25 ozs to over 400 oz per ton.

I have records of but two ore shipments; one lot 30657 lbs. contained 11/100 oz gold 25 oz silver 0 However, the owner, who shipped this ore to the White Hills Mill informs me he was cheated on this mail run, and that his dump sample of this ore showed over 50 oz silver and higher gold value. This would appear to be confirmed by a second shipment record 2500 lbs. from main shaft gave 8/10 oz gold, 368.4 oz silver; in addition to the assay of my samples from the 25 tons of ore now on the dumps, which was 8/10 oz gold 68/2 oz silver: these dumps having been stripped of the best ore.

About 700 ft from west end of Grant claim, a shaft No. 1 has been sunk on the ledge 65 ft deep, from which, at 50 ft. a drift runs east 43 ft. and connects with the main shaft (No. 2) at the 50 ft level. The ore has been stoped out above this drift to within 5 ft of the surface, about 685 (?) tons, of which 1/3 was shipped; 1/3 of the balance was hoisted out and after some asorting was milled; and the remaining third, about 228 tons, is in the stopes. The value of this ore is probably about the same as that now on the dumps, or \$50.10 per ton. 43 feet east of shaft No. 1 is the main shaft (No. 2) which has been sunk on the ledge 75 ft. deep. On the west side at 50 ft. level is the drift above referred to. From the east side of shaft at 35 ft down, a drift runs on ledge, 15 ft long. At 50 ft. a drift has been run 25 ft. east. Between these two drifts the ore has been stoped out, or about 121 tons, of this, one-third remains, broken down in stope, or about 40 tons, probably valued same as that above.

45 ft east of main shaft, a third shaft (No. 3) was been sunk 75 ft deep.

at 35 ft. down, a draft has been run 10 ft. west and 20 ft. east. Above the east drift the ore has been stoped about 10 ft above the drift, about 40 tons, of which one-third remains in stope.

Between shafts Nos. 2 and 3 on the surface about 25 tons of ore was taken out and milled. This lot is the one referred to, the returns of which the owner claims are not correct.

Summing up, 871 tons have been mined, of which about 290 tons remain in the stopes.

Excelsior Group: Consists of Excelsior ( located as Little Hootsey Tootsey) and Union Claims, covering 3000 ft. one one ledge and about 1000 ft. of the Onion ledge proper, a total ledge length of 4000 ft.

The course of the main ledge is N. 85° E. that of the Onion ledge is N. 90° E. The Ledges will average 5 ft. to 9 ft. wide.

Unlike all the other ledges of the McKesson mines, this ledge is practically vertical, and would seem to be the north boundary or limit of this mineral belt, and towards which the other ledges are dipping. It is quite probable that, as depth is obtained, some of the nearest of the ledges lying south may be found intersecting the Excelsior ledge, with probable increased enrichment at such points.

The main shaft is 185 ft deep and vertical. At 45 ft. drifts have been run west 15 feet and east 80 ft to a shaft 40 ft. deep. From this much good ore was taken and sorted for shipping, the balance remaining on the dumps; 180 tons remains in the stops and 40 ft. shaft. At 100 ft. 40 ft. drifts were driven each way on the ledge; at 140 ft. 12 ft. drifts were run each way from shaft. In all these drifts the ledge shows milling ore, although all good ore brought to light was grouged out by the operators. Several other shafts have been sunk, from 15 to 40 ft. deep on the ledge, from all of which considerable high grade ore has been shipped. One lot - 6 tons netted shipper \$468.00 or \$78.00 per ton, after paying excessive freights and charges and receiving 93% of the silver and but \$19.00 per ounce for the gold. A second lot of 15-1/2 tons netted \$844.00; 17 tons milled by the White Hills M. Co. netted \$657.00. The records accompanying show the results of these and other lots.

There is on the various dumps, 277 tons, samples from which averages assays 3/10 oz gold, 9-1/10 oz silver, or \$10.00 per ton. These dumps have been very closely sorted over for "best" leaving only the poor ore. The ore exposed in the ledge is also as poor as there is, the best having been closely skimmed. Assays of samples from the ledge gave across 7 ft. in drift west from shaft at 45 ft. level, 1/10 oz gold 4.5 oz silver --\$4.25. Across 3 ft. bottom of drift east for 30 ft. 25/100 oz gold 17-95/100 oz silver --\$14.00. Across 4 ft. roof drift west and east 100 ft. level 5/100 oz gold 20-9/10 oz silver --\$11.50.

Onion Claim: This claim contains two ledges, one, the continuation of the Excelsior ledge for 1500 ft. and 1000 ft. of the Onion ledge. Course of Onion ledge about No. 90° E. Average width of ledge 5 to 9 ft. Dip 90° - Development consists of several shallow shafts and cuts on the ledges, for 750 ft. at the center of the claim is a cut 25 ft. long, and one the south wall a shaft 3' x 4' 40 ft. deep has been sunk on the ledge.

From the various openings, samples were taken, the average of which gave 3/10 oz gold 1403/10 oz silver, or \$13.15 per ton. These dumps, like all the others, have been stripped of the best ore. I have but two shipping records - one, of ore taken from the shaft at upper cut, 472 lbs. 2-5/10 oz gold, 757 oz silver, and one lot 6350 lbs. taken from all openings, 13/100 oz gold 13-6/10 oz silver, shipped for milling after sorting out the best. Much ore of shipping values was taken from these ledges, but the records are not available.

In conclusion I feel well satisfied from this examination, that the mines of the McKesson group are valuable properties and well worthy of development and installation of suitable and adequate mining and milling machinery. I am convinced that the comparatively uniform distribution of milling values heretofore found in the ledges will be found to continue with depth. The values are there, and of all the samples taken, no ore has been found that will not yield a good profit. I am confident the ores can be mined and milled for not to exceed \$3.50 per ton and probably for \$3.00 per ton.



Freight rates can be obtained on hauling of less than 1/2 cent per pound; labor will not be high for a mining camp, \$3.00 to \$3.50 per day for miners, with an 8 hour day. While wood for fuel is scarce and costly, crude oil can be used very advantageously and delivered at the mines for less than \$4.00 per barrel of 42 gals. Gasoline would probably furnish the cheapest power at 27¢ per gal. The roads are excellent, and such that any load the wagon will carry can be hauled. Water at present costs \$1.00 per barrel, but I am sure that water will be encountered in the Excelsior shaft before it reaches 250 ft. mark.

It would seem, therefore, that the conditions are all favorable for economical mining, and an exceptionally good return from the investment of the necessary amount of money for the installation of a proper plant. As such, I recommend the mines of this group.

Respectfully submitted,

Charles W. Raymond, M.C.E.

Kingman, Arizona.  
Dec. 7, 1903.

DATE	(W.J.Bryan)Cornicopia.	SILVER per oz	Pounds	ASSAY PER TON Gold	Silver	NET VALUE
Dec '95	South ledge 20' shaft	59-1/8	1341	.25	450 oz	\$119.79
Oct '95	Main shaft	58-1/8	3527	.20	319.40	310.63
" '99	" " Stopes	"	3527	.22	324.70	317.09
Sep "	" " "	59-1/16	4686	.29	338.31	386.61
Apr '97	" " "	61-3/4	1845	.30	387.70	182.34
June "	" " "	60	2290	.25	600.75	370.48
July '99		56-1/4	1606	.24	425.86	157.53
Sep "		62.5	2829	.10	150.90	69.28
Dec '96		65-1/4	589	.20	166.30	21.88
" '97		60	822	.20	267.40	37.75
Febby '92		55	798	.20	284.40	41.92
March '97	cross ledge	63-3/4	2088	.15	277.85	155.69
Oct '99	stope	54.5	303	.40	404.30	24.17
July "		56.74	1606	.30	443.62	185.55
Oct "		54.5	303n	.36	440.44	26.36
June "		61.25	1364	.20	379.20	105.24
July "		56-3/4	711	.10	83.90	6.24
Apr 1900		59.5	684	.20	117.50	14.77
Oct 1901		57-1/8	3147		203.20	126.21
Dec '96		65-1/4	48	.25	340.50	1.58
Mar '98	Main 200' level	63-3/4	1027	.15	216.95	39.06
Jan 1900	Cross ledge 70' shaft		4478	.40	769.00	889.97
Mar "	2° Fault raise per ton		1100	.26	978.14	258.00
" "	" " 2° Grade		1064	.14	210.66	422.49

	BLACK SPAR	LEAD	PRICE per oz	Pounds	Gold	Silver	Net
June 1900	Main Shaft	6-1/2%		1100	4.40	14.60	
	" "			4313	3.00	19.00	67.64
May "	" "			269	2.40	10.50	.63
June "	" "	2%		1085	2.40	8.60	17.38

Assays

Apr 1900	Monument Shaft	4-1/10%			2.88	9.60	
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Black Stuff

May 1900	Old shaft west side 20' deep	1-2/10%			2.80	11.84	
	Old Shaft Foot wall 5' deep				1.00	25.68	
	Old shaft West side 20' deep				7.66	21.90	
	White Porphy				.10	.78	
June 1900	Galena ore				3.00	49.58	
	Grey Carbonates Old shaft Carbonate Lead				4.00	15.64	
Apr 1900	Monument shaft	12-9/10%			3.90	9.34	
	Middle " Surface				2.58	12.99	
	Foot wall shaft east of cabin Lead				2.38	27.00	
" "	Old Shaft west side 20' deep	2.5%			3.60	24.40	
	Old Shaft 10 ft. shaft west	1.%			.40	26.40	
	Old 4ft. " "	2.1%			1.44	7.86	
	" Shaft Lower vein South 100 ft.	1.2%			1.50	6.58	

Assays made at Kingman

Dec 1903	1				.10	4.55	4.25
	2				.25	17.95	14.00
	3				.05	20.95	11.50
	4				.30	9.10	10.50
	5				.08	14.30	13.15
	6				.60	39.40	21.30
	7				.80	21.80	22.90
	8				1.40	68.20	50.10
	9				1.80	5.20	50.65
	10				2.90	4.20	37.40

DATE	CLAIMS	LBS. GOLD	OZ. SILVER	PER TON VALUE	CHARGES	NET REPT.
June 1896	Hootsy Tootsy new Excelsior	1790 <i>6.31</i> 20/100	455.65	319.26	\$30.00	\$479.46
Oct 1896	"	4151 <i>0.2</i> 11/100	164.60	117.16	"	260.46
Apr 1899	Milled at 45 ft. land	34223 <i>0.11</i> 11/100	96.57	65.16	12.00	657.14
Dec 1899	Smelter	7405 <i>0.15</i> 15/100	104.05	67.00	24.40	255.52
Dec 1896	"	30970 <i>0.17</i> 17/100	111.20	58.00	24.40	844.74
Dec 1899	"	19057 <i>0.11</i> 11/100	39.00	13.60	24.40	390.34
Dec 1900	Arion-Upper East Shaft Arion	472 <i>0.65</i> 65/100	13.60	757.5		95.00 28.92 Several other shipments made.
	GRANT					
Dec 1899	Shaft and open cut	30657 <i>0.11</i> 11/100	25.00			
Apr 1896	Sulphides fro Hydro Leaching	13525 <i>0.11</i> 12/100	5208.96			Process good for silver only.
Aug 1896	Main shaft	2500 <i>0.80</i> 80/100	368.46			Values in tailings \$40.00 per ton. XXX
Apr 1900	Jim Blain now Good Luck	2590 <i>0.25</i> 25/100	667			422.15

REPORT ON THE McKESSON MINES

WHITE HILLS      ARIZONA

by  
Chas. W. Raymond, M.C.E.

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The McKesson Mines are situated in the INDIAN SECRET Mining District, White Hills, Arizona, in the Northwestern portion of the County.

The district is accessible from Kingman (Elevation 3260) on the main line of the Santa Fe R. R. and by the Arizona & Utah narrow gauge R. R. 23 miles from Chloride. Its present terminus and thence 25 miles from Chloride over an excellent wagon road with no heavy grades, to the Mining Camp of White Hills (Elevation 3100).

The McKesson Mines consist of 9 mining claims lying in four groups, as follows:

- 1st -- "Black Spar" 1500 by 600 3800 ft. north of White Hills.  
The "Cornicopia" 1500 by 600 and its easterly extension -- Extension? Lue
- 2nd -- The "Good Luck" 1500 by 600 about 600 ft. north of the 1st group and 4400 north of White Hills. The "Grant" 1500 by 600 its westerly extension the "Black Spar" 1500 by 600 and third claim called
- 3rd -- The "Bonawea" 1500 by 600 lying alongside and parallel to the Grant about one mile north of the town.  
The "Excelsior" 1500 by 600 located as the Little Hootsey Tootsey.
- 4th -- The "Orion" 1500 by 600 the easterly extension of the above.  
This latter group is about 2500 ft. north of the Grant group or about  $1\frac{1}{2}$  miles north of White Hills.

These claims are located on ledges approximately parallel to each other, at the foot of the northern area of the White Hills Mts. which here runs about North, the ledge having the general course of east and west crossing the general direction of this portion of the range. The range at this point makes a turn to the east, at the turn or elbow and on the south slope of the east and west arm are situated the various mines of the White Hills Mining Co. which made the White Hills Camp quite prominent in mining circles.

The ledges of the McKesson mines dip to the north; that

of the "Black Spar" dips 35 degrees northerly from the horizontal. The "Cornicopal" ledge dip 35 to 40 degrees northerly; on the Grant, the dip is 40 to 45 degrees westerly, while the dip of the Excelsior and Orian ledge is about 90 degrees or vertical.

North of this ledge there seems to be no mineralized rock. Certainly none has been found therefore the Excelsior ledge would seem to mark the northern limit of the ore bearing zone of the Indian Secret Mining District.

The ledges are all true fissures lying in an eruption formation, granite and fosphysite; the former in many of the outcroppings being quite Schystose. The vein filling or gauge is generally quartz, rarely massive at the present depth and accompanied by Phorphys and Porphysitic material with talcy gauge on the foot and hanging walls, which makes excellent breaking ground. The ore drills easily with occasional hard places locally called "Nigger Heads" and in a general way may be called "easy ground" hence can be mined cheaply.

The contents of value are gold, silver and occasionally lead and with the exception of the "Black Spar" ledge in which gold values are greater and silver less, the silver predominates largely and is in the form of a chloride with rarely cases of Metallic Silver.

Much of the ores will pan showing free gold on fine particles and yield the gold and silver values up to 80 to 85 per cent by combination process stamps and pans Amalgamation.

The Black Spar ledge carries a large percentage of gold while the ledge north, silver is in excess. The gold value generally being small. On inspection of the assays and records of shipments to samples and smelters will show this more particularly.

On these claims there is a known practically exposed ledge of length of over 7000 ft. not including the ledges on the three so called "outlying claims" "Black Metal", "Bonawea", & "Good Luck" which were not specifically examined but upon which the ledges are known to exist and from some of the workings (of which first class ore has been found. These ledges are strong with well defined walls, and the pay

portions vary from 18 inches to 4 ft. width while in several cases the width between walls is 5 to 30 ft. the latter being the ledge width between walls. At the "Black Spar" the character of the ores is more particularly described in the description of each claim hereinafter. The topography of the district is like much of this part of the territory.

The Sacramento Valley running southeasterly from the Colorado River on the north, through Mohave County to and into Yuma Co.

This is a detrital valley lying between the "Blue Ridge Mts." on the west and the White Hills Mts. Corbat, Hulalapai Mts. on the east a length of over 130 miles. The elevation at Kingman is 3260 ft., while at White Hills it is about 3000 ft. the valley sloping towards the Colorado River. Going north the grade and general surface is such that Railroad construction is very feasible. The soil is generally sandy but in no case is the sand more than a few inches deep, in the wagon roads the roads are in good condition and can be made excellent nominal expense. A wagon can be driven almost in any direction, where no road exists, so free and uniform is the general surface. Cacti of many varieties. Gruce Wood and Yucca trees (herecalled Joshuas) form the only growth in the valley. The Yucca affords a fair fuel but is far from plentiful. The district is practically devoid of timber for fuel and building purposes but transportations facilities remedy this to a great extent. Water is very scarce so far as springs and streams are concerned but it has been found that a plentiful subterraneum supply exists. At kingman water is found by drilled wells from 80 to 100 ft. At Chloride about the same depth, while at White Hills several shafts have developed the water supply at 300 to 500 ft. depths, the water being of excellent quality.

On the Excelsior claim it is thought at 225 to 250 ft. the main shaft will be in water the bottom now at 185 ft. is quite damp. The summer season is quite warm although comfortable in the shade; the nights are comparatively cool. The winter temperature reaches the freezing point although the north winds being excessively dry are very chilling in effect. Snow is uncommon and an inch or two the maximum which disappears in a few hours. July to Sept. inclusive the most rain falls but the amount is slight. Throughout the year

mining operations can be concluded without interruption. The White Hills mineral deposits lie in the broad belt which begins at the Colorado River in the northwestern part of Mohave County and extends 500 miles southeasterly across the territory to and beyond Tombstone and the southeast. The White Hills mines have been largely operated by "Chloriders" who have excavated the richest portions of the pay streaks to depths on the ledges varying from a few feet to 250 ft. in a few cases. This ore has been again culled or sorted to as high a grade as possible in order that it would yield a profit after the excessive charges of transportation, sampling and treatment have been deducted. As a consequence ores yielding less than \$75. to \$100 per ton were not shipped, and the lower grades thrown on the dumps. When milling plants were installed in the district ores of a lower grade could be worked and a further sorting of dumps took place and the product was sent for reduction to the nearest mill. Extensive and systematic development was carried on in but few properties. The White Hills Co. sunk the Occident shaft to the 700 ft. level encountered water at about 500 ft. fan drifts on the several levels above that depth and extracted a large amount of ore that yielded excellent returns. On the hill just north of the town leases were given to many "Chloriders" who burrowed the ledge to moderate depths and extracted a large tonnage of high grade ore. The company had erected a combination mill (equipped to 40 stamps) after paying \$1,750,000.00 for the property and expended over \$500,000.00 in development of mines and water supply but so much extravagant expenditures occurred that trouble and estrangements forced the closing down of the property. The Black Spar claims this ledge has a course of about N. 90° E or E. & W is exposed by open cuts and shallow shafts 1200 ft. along the ledge. The Emma mine is the easterly extension of the same ledge and on this a shaft develops the ledge 100 ft. deep fully 800 ft. further east. The walls of the ledge are 25 to 30 ft. apart with a dip northerly of 35° between the walls the vein filling is quartz and Porphyry. The pay shoot turn diagonally from the foot walls to hanging walls in a northwesterly direction and there dip from 45° to 60° northeasterly. These pay shoots are about 40 ft. apart and 40 to 50 ft. in length diagonally



along the hanging and the foot walls, but it is 30 to 40 ft. wide. When the diagonal pay shoots start and end, these diagonal pay shoots will average 20 to 30 ft. in width and the ore in both shoots is well defined and easily separated from the walls. The ore in this claim show higher Gold values than in any others. Samples taken from the ore in several pay shoots exposed in shallow shafts and cuts assayed 1-1/10 oz. gold 5-2/10 oz silver total value per ton \$37.40 (silver at 50¢ per oz) lead is present in the ore to a small extent as will be seen by the returns from shipments. The following assays of ores made during the development work I have obtained are reliable. See list of assays.

The following shipment record is given and show the value of large quantities which of course are of ore sorted to high grade, the culls being left on the dumps.

#### See Shipments

It will be seen by inspection of the average of dumps values 1-8/10 oz gold 2-8/10 oz. silver and the shipment values 3-5/10 oz gold 13-2/10 oz silver that can be extracted for milling on the ground having an average value of \$37.00 per ton, but if the value of the ore in the dumps (after picking out the best) be taken as a minimum or \$37.00 and 80% of that can be saved in reduction it will be seen that very profitable operations can be carried on. As to the ore reserves, it is not practicable to estimate the tonnage as the development is but nominal. As a rough approximation we may assume that 1200 ft. of the ledge 800 ft. wall shows 1 foot or ore on each wall and that the diagonal ore shoots will occur every 100 ft. measuring 40 ft. in length and averaging 2 ft. width of pay ore. This will give total length along two walls 1600 ft. x 1 ft. wide equaling 1600 square ft. total length of diagonal 12 x 40 equals 480 ft. x 2 ft. 960 square feet (indicated by ditto marks in original document copied form) or a total of 2500 square feet taken for 100 ft. depth at 2500 x 100 ft. equal 250,000 cu. ft. 250,000 cu. ft. at 13 cu. ft. per ton equals 19,230 tons.

In the next group laying north and about 600 ft. distant are the Cornicopia and "Good Luck" (formerly the W. J. Bryan and Jim Blaine) claims. The corner of the main ledge through these claims is about N. 70° W. about 50 feet north is another strong ledge running parallel to the main ledge intersecting the main ledge, through these claims is about N. 70° W. about 50 ft. north is another strong ledge running parallel to the main ledge intersecting the main ledge, about 270 ft. east of west end of claims is another ledge crossing the claims diagonally on a course of N. 80° E. The main ledge is narrow 12 inches to 18 inches in width but the pay streak 2" to 6" contains high values the ledge lying north is traceable 300 to 400 ft. east from the west end of claim and there has been some development upon it, one shaft 70 ft. deep from which a small lot of high grade ore has been shipped, it presents the same characteristics as the main ledge but not quite as large. The diagonal or cross ledge is a strong one with well defined walls, it will average 2 ft. to 6 ft. in width with a dip 45° N. W. On this ledge several shafts have been sunk as follows: beginning at the west end of claim 20 ft. east, 35 ft. deep, 100 ft. from this 10 ft. deep. 125 ft. further east 70 ft. deep, these are all on the ledge, 95 ft. east from the last is another shaft 35 ft. deep on the ledge and 40 ft. east of this shaft on the ledge 50 ft. deep. All of these shafts expose a strong ledge 2 to 6 ft. wide and from which considerable high grade ore has been shipped by the "Chloriders". Some of these I have been able to get records. One Lot 2.088 lbs. yielded 15/100 oz. gold 277-8/10 oz. silver \$153.45. Another 1,027 lbs 15/100 gold 216-9/10 oz. Silver \$123.45. The last from 70 ft. shaft. On the main ledge much development has been done and a large amount of high grade shipped. The ledge has been exposed in many places throughout the length of the Cornicopia and also on its east extension. The good Luck records of shipments are lacking but that of one shipment is 2,390 lbs. 25/100 gold, 667 ozs. Silver \$348.50. I am informed that over \$2500.00 has been received by lessors "Chloriders" which would mean over \$3,500.00 has been taken out. Nearly all from surface and 70 ft. down on the place. The list of shipments accompanying this report

shows the general values of the ores which of course were worked to as high a grade as possible. The following are the shafts on the main ledge commencing on the west end of claim 100 ft. easterly from west end of shaft No. 1. 40 ft. on ledge, further east shaft No. 2 - 100 ft. 75 ft. easterly No. 3 or main shaft 170 ft. on the dip of ledge, and 71 ft. along the ledge in a drift. 70 ft. east shaft No. 4 - 135 ft. on ledge. By reference to the accompanying sketches it will be seen that the ledge has a dip of  $30^{\circ}$ , the first 30 ft. of shaft was sunk at a slope of  $45^{\circ}$  until the ledge was cut and from this point the shaft follows the ledge. At 46 ft. the ledge was found interrupted by a "Fault" the first portion have been thrown down or depressed by volcanic or other force leaving the continuing of the ledge some 6 ft. above, the shaft was then driven on a level until the ledge was again encountered about 30 ft. further and a drift or a "raise" driven backward and along the ledge till the first "fault" was met. At 43 ft. the ledge was again found cut off by "fault" No. 2. The same method was followed until the shaft cut the ledge and the "raise" driven backward to the faulting point. In this the ledge was faulted 18 ft. from this point the shaft continues 80 ft. when it turns to the right (east) until at 24 ft. from the surface the shaft is running N.  $60^{\circ}$  east or about right angle to the course of the first 50 ft. From this shaft stopes have been driven and ore taken out 20 to 50 ft. east of and the full length of shaft while from the west side for about 80 ft. down the ore has been stoped, for 20 ft. to 40 ft. from the shaft the ledge has averaged 12 to 18 ft. width and appears to be increasing in width with depth. The ledge is easily mined, the ore being free from the walls. Samples were taken from the ledge from 150 ft. to 240 ft. in shaft. The best of all the exposed ore having been carefully extracted by the "Chloriders" the average of these samples assayed  $8/10$  ( in pencil above 0.08) ozs. gold  $39-4/10$  ozs silver or \$21.30 (silver at 50¢ per onz.) At the several shafts samples of all the dumps were taken and the average of which assayed gold  $6/10$  oz silver  $21-8/10$  oz. or \$22.90 there is about 110 tons of ore in the dumps these dumps have been sorted

over several times and the best ore shipped. As near as I could determine the shipping ore in the definitely defined chimneys while fully 75% of all the vein filling is milling ore. The values being quite uniformly distributed. Any estimate of the ore in the mine would be approximate only and may be stated to be the contents of a ledge 300 ft long with an average width of 12 ft. to 18 ft. for which depths as has already been reached or 170 ft. down the average value of ore taken out by "Chloriders" may be approximately ascertained by comparisons of shipping records and assays of material left on dumps, the average value of such shipments of which I have records is 23/100 oz. gold 375-5/10 silver or \$183.35 per ton of which ore 41,283 lbs or there is 110 tons of \$22.90 ore value \$2,519.00, hence the 130-6/10 tons are worth \$6,296.00 or \$48.00 per ton which from this date would indicate the value of the ore in the ledge before extraction. To what extent this value will obtain throughout the ledge or to what depth can only be definitely determined by development. The data at hand may be summed up as follows: At 170 ft. depth on ledge, the ore assayed \$21.30; the dump samples assayed \$22.90. Shipping records from 3000 ft. length of ledge show average values of \$183.35 which added to what was left on the dumps gives \$48.00 per ton as the value of the ore taken out in the search for the best. The Assay \$21.30 of the ore at present showing in the lower works may be taken as a fair average or minimum value of the general ore along the ledge.

The Good Luck was not examined for values, as I am informed that it is to be considered as an additional to the properties, regardless of value. But I may add, that, judging from the work done, the ledge and spurs (see plan) as exposed in the ten or more shafts, are identical in character with the Cornicopia ledge. Much ore was taken from these by the "Chloriders" of which I have but one record; 2390 lbs. gold 25/100 oz. silver 667 oz. or \$338.50 per ton (silver at 50¢) when the "Chloriders" came upon the first fault in the ledge, they considered the ledge at an end and either started another hole or quit entirely. The various shafts are as follows: beginning at west end of Good Luck (Jim Blaine) claim 70 feet deep; 10 ft., 15 ft., 10 ft., 35 ft., 35 ft. 60 ft. and 10 ft. On the north spur, 10 ft. 35 ft. On the

next spur south, one shaft 40 ft. deep. These are all sunk in the ledge.

I can see no reason why the Good Luck should not prove as good a property, upon development, as the Cornicopia.

Grant Group - This group consists of three claims, Grant, its eastern extension, the Black metal, and the Bonanza, located on a parallel ledge to the south of the Grant. This group lies about 600 ft. northeasterly from the Cornicopia. group. On the Black Metal little development has been done, but sufficient to show that ledge runs through the greater part of the claim. As this claim and the Bonanza stand in the same relation to the Grant as does the Good Luck to the Cornicopia, I.E. As claims additional to the original properties, no samples were taken from the ledges on these claims. The ores on the Black Metal are, so far as known at present, lower in grade than the Grant ore, but for milling on the ground, they may be considered as good; the same may be said of the Bonanza. While not much shipping ore has been found, there is a large quantity of milling ore.

On the Black Metal there is, about 750 ft. from the west end of claim, a shaft 60 ft. deep, at the bottom of which drifts 20 ft long have been run east and west from the shaft, and from which good milling ore was taken. The ledge dips about  $65^{\circ}$  north. West of shaft is a small shaft 60 ft. deep, and east of shaft are two more small shafts 8 ft. and 6 ft. respectively. In all of these, the ledge shows strong and with well defined walls; the ledge is 4 to 6 ft. wide, and the ledge filling is quartz-porphry. The same character of ore is found on the Bonanza. On the Bonanza claim the following are the developments; beginning at westerly end of claim, about 500 ft. east, 4 ft. shaft, then 10 ft. 40 ft. 20 ft. 15 ft. shafts. On a small parallel ledge about 150 ft. north is a 10 ft. shaft which shows good ore in a small ledge. The Black Metal for  $\frac{3}{4}$  of its length lies on a flat; the ground slopes upward from there gradually, the entire length of the Grant; the highest point being not more than 75 ft. above the flat.

On the Grant considerable development has obtained. The course of the ledge is N.  $90^{\circ}$  E. (east and West) The dip  $40^{\circ}$  north; the

ledge 3 to 4 ft. wide. The foot wall is white porphyry; between the wall and the ledge is a strong gauge of white tale; the same gauge appears on the hanging wall. The ledge is composed of quartz-porphyry. Silver in form of chloride is present and predominates; the gold is fine and varies from 1/10 to 8/10 oz. per ton, while the silver runs from 25 ozs. to over 400 oz. per ton.

I have records of but two ore shipments; one lot 30657 lbs. contained 11/100 oz. gold 25 lz. silver. However, the owner, who shipped this ore to the White Hills Mill informs me he was cheated on this mill run, and that his dump sample of this ore showed over 50 oz. silver and higher gold value. This would appear to be confirmed by a second shipment record 2500 lbs. From main shaft gave 8/10 oz. gold, 368.4 oz. silver; in addition to the assay of my samples from the 25 tons of ore now on the dumps, which was 8/10 oz. gold 68/2 oz. silver; these dumps having been stripped of the best ore.

About 700 ft. from west end of Grant claim, a shaft No. 1 has been sunk on the ledge 65 ft. deep, from which, at 50 ft. a drift run runs east 43 ft. and connects with the main shaft (No. 2) at the 50 ft. level. There has been stoped out above this drift to within 5 ft. of the surface, about 685 (?) tons, of which 1/3 was shipped; 1/3 of the balance was hoisted out and after some assorting was milled; and the remaining third, about 228 tons, is in the stopes. The value of this ore is probably about the same as that now on the dumps, or \$50.10 per ton. 43 feet east of shaft No. 1 is the main shaft (No. 2) which has been sunk on the ledge 75 ft. deep. On the west side at 50 ft. level is the drift above referred to. From the east side of shaft at 35 ft. down, a drift runs on ledge, 15 ft. long. At 50 ft. a drift has been run 25 ft. east. Between these two drifts the ore has been stoped out, or about 121 tons, of this, one-third remains, broken down in stope, or about 40 tons, probably valued same as that above.

45 ft. east of main shaft, a third shaft (No. 3) has been sunk 75 ft. deep.

At 35 ft. down, a draft has been run 10 ft. west and 20 ft. east. Above the east drift the ore has been stoped about 10 ft. above the drift, about 40 tons, of which one-third remains in stope.

Between shafts Nos. 2 and 3 on the surface about 25 tons of ore was taken out and milled. This lot is the one referred to, the returns of which the owner claims are not correct.

Summing up, 871 tons have been mined, of which about 290 tons remain in the stopes.

Excelsior Group: Consists of Excelsior (located as Little Hootsey Tootsey) and Union Claims, covering 3000 ft. one ledge and about 1000 ft. of the Union ledge proper, a total ledge length of 4000 ft.

The course of the main ledge is N. 85° E. that of the Union ledge is N. 90° E. The Ledges will average 5 ft. to 9 ft. wide.

Unlike all the other ledges of the McKesson mines, this ledge is practically vertical, and would seem to be the north boundary or limit of this mineral belt, and towards which the other ledges are dipping. It is quite probable that, as depth is obtained, some of the nearest of the ledges lying south may be found intersecting the Excelsior ledge, with probable increased enrichment at such points.

The main shaft is 185 ft. deep and vertical. At 45 ft. drifts have been run west 15 feet and east 80 ft. to a shaft 40 ft. deep. From this much good ore was taken and sorted for shipping the balance remaining on the dumps; 180 tons remains in the stopes and 40 ft. shaft. At 100 ft. 40 ft. drifts were driven each way on the ledge; at 140 ft. 12 ft. drifts were run each way from shaft. In all these drifts the ledge shows milling ore, although all good ore brought to light was grouged out by the operators. Several other shafts have been sunk, from 15 to 40 ft. deep on the ledge, from all of which considerable high grade ore has been shipped. One lot - 6 tons netted shipper \$468.00 or \$78.00 per ton, after paying excessive freights and charges and receiving 93% of the silver and but \$19.00 per ounce for the gold. A second lot of 15-1/2 tons netted \$844.00; 17 tons milled by the White Hills M. Co. netted \$657.00. The records accompanying show the results of these and other lots.

There is on the various dumps, 277 tons, samples from which averages assasy 3/10 oz. gold, 9-1/10 oz. silver, or \$10.00 per ton. These deumps have been very closely sorted over for "best" leaving only

the poor ore. The ore exposed in the ledge is also as poor as there is, the best having been closely skinned. Assays of samples from the ledge gave across 7 ft. in drift west from shaft at 45 ft. level, 1/10 oz gold 4.5 oz. silver -- \$4.25. Across 3 ft. bottom of drift east for 30 ft. 25/100 oz. gold 17-95/100 oz silver --\$14.00. Across 4 ft. roof drift west and east 100 ft. level 5/100 oz gold 2-9/10 oz silver -- \$11.50.

Onion Claim: This claim contains two ledges one, the continuation of the Excelsior ledge for 1500 ft. and 1000 ft. of the Onion ledge. Course of Onion ledge about No. 90° E. Average width of ledge 5 to 9 ft. Dip 90° - Development consists of several shallow shafts and cuts on the ledges, for 750 ft. at the center of the claim is a cut 25 ft. long, and on the south wall a shaft 3' x 4' 50 ft. deep was sunk on the ledge.

From the various openings, samples were taken, the average of which gave 3/10 oz. gold 14-3/10 oz. silver, or \$13.15 per ton. These dumps, like all the others, have been stripped of the best ore. I have but two shipping records - one, of ore taken from the shaft at upper cut, 472 lbs. 2-5/10 oz. gold, 757 oz. silver and one lot 6350 lbs. taken from all openings, 13/100 oz gold 13-6/10 oz silver, shipped for milling after sorting out the best. Much ore of shipping values was taken from these ledges, but the records are not available.

In conclusion, I feel well satisfied from this examination that the mines of the McKesson group are valuable properties and well worthy of development and installation of suitable and adequate mining and milling machinery. I am convinced that the comparatively uniform distribution of milling values heretofore found in the ledges will be found to continue with depth. The values are there, and of all the samples taken, no ore has been found that will not yield a good profit. I am confident the ores can be mined and milled for not to exceed \$3.50 per ton and probably for \$3.00 per ton.

Freight rates can be obtained on hauling of less than 1/2 cent per lb. labor will not be high for a mining camp, \$31.00 per day



for miners, with an 8 hour day. While wood for fuel is scarce and costly, crude oil can be used very advantageously and delivered at the mines for less than \$4.00 per barrel of 42 gals. Gasoline would probably furnish the cheapest power at 27¢ per gal. The roads are excellent, and such that any load the wagon will carry can be hauled. Water at present costs \$1.00 per barrel, but I am sure that water will be encountered in the Excelsior shaft before it reaches 250 ft. mark

It would seem, therefore, that the conditions are all favorable for economical mining, and an exceptionally good return from the investment of the necessary amount of money for the installation of a proper plant. As such, I recommend the mines of this group.

Respectfully submitted,

Charles W. Raymong. M. C. E.

Kingman, Arizona

Dec. 7, 1903.

DATE	( W. J. Bryan( Cornicopia.	SILVER		ASSAY PER TON		NET VAL.
		per oz.	Pounds	Gold	Silver	
Dec. '95	South ledge 20' shaft	59-1/8	1341	.25	450 oz.	\$119.79
Oct. '95	Main shaft	58-1/8	3527	.20	319.40	3310.63
" '99	" " Stopes	"	3527	.22	324.70	317.09
Sep "	" " "	59-1/16	4686	.29	338.31	386.61
Apr '97	" " "	61-3/4	1345	.30	387.70	182.34
June "	" " "	60	2290	.25	600.75	370.48
July '99		56-1/4	1606	.24	425.86	157.53
Sep "		62.5	2829	.10	150.90	69.28
Dec '96		65-1/4	589	.20	166.30	21.88
" '97		60	822	.20	267.40	37.75
Feb. '92		55	798	.20	284.40	41.92
March '97	cross ledge	53-3/4	2088	.15	277.85	145.69
Oct '99	stope	54.5	303	.40	404.30	24.17
July "		56.74	1606	.30	443.62	185.55
Oct "		54.5	303	.36	440.44	26.36
June "		61.25	1364	.20	379.20	105.24
July "		56-3/4	711	.10	83.90	6.24
Apr. 1900		29.5	684	.20	117.50	14.77
Oct 1901		57-1/8	3147		203.20	126.21
Dec. '96		65-1/4	48	.25	340.50	1.58
Mar '95	Main 200' level	63-3/4	1027	.15	216.95	39.06
Jan 1900	Cross ledge 70' shaft		4478	.40	769.00	889.97
Mar "	2° Fault raise per ton		1100	.26	978.14	258.90
" "	" " 2° Grade		1064	.14	210.66	422.49

BLACK SPAR			LEAD	PRICE per oz	Pounds	Gold	Silver	Net
June 1900	Mine Shaft		6- $\frac{1}{8}$ %		1100	4.40	14.60	
"	"				4313	3.00	19.00	67.64
May	"	"	"		269	2.40	10.50	.63
June	"	"	"	2%	1085	2.40	8.60	17.38

Assays

Apr. 1900	Monument Shaft		4-1/10%			2.88	9.60	
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Black Stuff

May 1900	Old shaft west side							
	20' deep		1-2/10%			2.80	11.84	
	Old Shaft					1.00	25.68	
	Foot wall 5' deep							
	Old shaft							
	West side 20' deep					7.66	21.90	
	White porphyry					.10	.78	
June 1900	Galena ore					3.00	49.58	
	Grey Carbonates Old shaft					4.00	15.64	
			Carbonate Lead					
Apr 1900	Monument shaft		12-9/10%			3.90	9.34	
	Middle "		Surface			2.58	12.99	
	Foot wall shaft east of cabin					2.38	27.00	
			Lead					
"	"							
	Old Shaft west side							
	20' deep		2.5%			3.60	24.40	
	Old Shaft							
	10 ft. shaft west		1.%			.40	26.40	
	Old 4 ft. " "		2.1%			1.44	7.86	
	" Shaft Lower vein							
	South 100 ft.		1.2%			1.50	6.58	

Assays made at Kingman

Dec. 1903	1					.10	4.55	4.25
	2					.25	17.95	14.00
	3					.05	20.95	11.50
	4					.30	9.10	10.50
	5					.08	14.30	13.15
	6					.60	39.40	21.30
	7					.80	21.80	22.90
	8					1.40	68.20	50.10
	9					1.80	5.20	50.65
	10					2.90	4.20	37.40

DATE	CLAIMS	. lbs.	OZ GOLD	OZ. SILVER	PER T. VALUE	CHGS.	NET RECPT.
June 1896	Hootsy Tootsy Now Excelsior	1790	0.3	455.65	319.26	30.00	\$479.46
Oct. 1896		4131	0.2	164.60	117.16	"	260.46
Apr. 1899	Milled at 45 ft. land	34223	.11	96.57	65.16	12.00	657.14
Dec. 1899	Smelter	7405	.15	104.05	67.00	34.40	253.52
Dec. 1896	"	30970	.17	111.20	58.00	24.40	844.74
Dec. 1899	"	19057	.11	39.00	13.60	24.40	390.34
Dec. 1900	Arion-Upper East Shaft Arion	472 6313	.65		757.5		95.00* 28.92
	GRANT						
Dec. 1899	Shaft and open cut	30657	.11	25.00)			
Apr. 1896	Sulphides from Hydo Leaching	13525	.12	5208.96)**			
Aug. 1896	Main Shaft	2500	.80	368.46)***			
Apr. 1900	Jim Blain now Good Luck	2390	.25	667			422.15

\* Several other shipments made.

\*\* Process good for silver only.

\*\*\* Values in tailings \$40.00 per ton.