



Ambrose Ely Ring

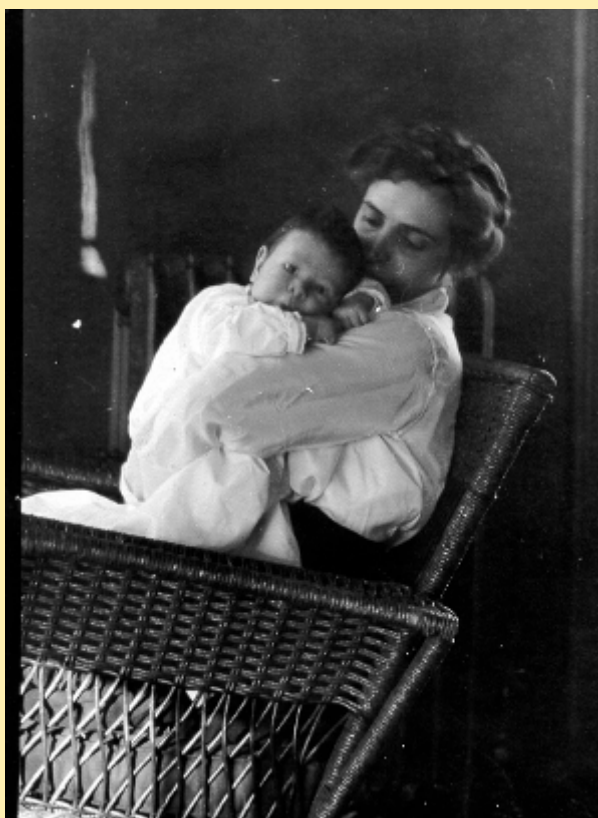
Diary 1916

1916 Nothing written.

NOTE: Ambrose did not mention in his diary, but he attended the A.I.M.E., (American Institute of Mining Engineers) Tour of Arizona Mines and took the following pictures of that tour.

C. E. Ring, Year by Year Diary 1916

Continued to live in Flatriver – Grandmother Ring (From New York) visited.



Grace & Clinton.





A. I. M. E. Tour of Arizona Mines

For the first time in its history, the American Institute of Mining Engineers will hold its meetings within the State of Arizona. A special train will leave New York on Thursday, Sept. 14, at 5:30 p.m., but members and guests may join it at other points en route.

Arrived at Santa Rita, N. M., on Monday, Sept. 18, an inspection will be made of the Chino Copper Co.'s mines and also of the Empire Zinc Co.'s mill, arriving at Hurley in the afternoon for inspection of Chino.

The program at Douglas, Ariz., the next day, includes visits to the reduction works of the Copper Queen and of the Calumet & Arizona companies. The first technical sessions will be held in the afternoon and evening on the subjects of smelting and leaching respectively.

Wednesday, Sept. 20, will find the party at Bisbee for an early visit to the mines of the district, to be followed in the afternoon by a technical session; subject, "Mining and Geology of the Warren District." The evening will be given over to a banquet and social evening.

Arrived at Globe the next morning, the party will visit the mines and reduction works of the Old Dominion company. The subject of the afternoon technical session will be, "Concentration and Flotation." The evening's banquet will be followed by a technical session on the subject of fine grinding.

Friday Sept. 22, will be spent in a visit to the reduction works of the International Smelting company and the concentrators of both the Miami and Inspiration companies. The technical session of the afternoon on the subject of mining and smelting will be followed by a banquet and social evening. The Ray Copper Co. will welcome members and guests who desire to visit its mine at Ray, but those taking this trip must rejoin the party at Phoenix.

Sunday, Sept. 24, is bound to be a memorable day. Arriving at the Grand Cañon of Arizona at 8 a.m., a visit will be made to the river 6,000 ft. below the level of the plateau. Leaving the Grand Cañon at 7:40 p.m. Sunday night, the return will be made via Alberquerque, Kansas City, and Chicago, reaching New York on Sept. 28.



Bisbee Daily Review, September 10, 1916.



Mining Engineers of Country Soon To Tour Arizona

American Institute of Mining Engineers, Including in Its Membership the Greatest Mining Men in the World, Will Visit the State of Arizona Between September 19 and September 23, Traveling on Special Train.

Special Will Stop in Bisbee September 20; Will Look Through Mines and Hold a Technical Session, and a Banquet in the Evening—Preparations Are Being Made for the Visitors' Reception in Every Mining District of the State.

At the invitation of the Arizona subdivision of the organization the world's greatest association for the dissemination of technical information on mining and metallurgy will meet in the state of Arizona between September 19 and September 23. This is the annual meeting of the American Institute of Mining Engineers and includes in its membership the leaders in that profession in the entire country, which means the world.

Annually this organization holds two meetings, one at the headquarters of the Institute in New York and the other in one of the mining sections of the country. Last year the mining section chosen was that of California; the principal meeting being held in San Francisco. The previous year the meeting was held in Salt Lake City and before that in Butte, Montana.

The local branch of the Institute was organized last February in Globe. It consists of engineers from Arizona, western New Mexico, the states of Chihuahua and Sonora, Mexico, and numbers about two hundred men. The general committee, having the Arizona part of the trip in hand this year, consists of Gerald Sherman, chairman; Arthur Notman, secretary; John C. Greenway, B. B. Gottsberger, of Miami; Norma Carmichael, of Clifton; Will L. Clarke, of Jerome; Forest Rutherford, of Douglas, and W. G. McBride, of Morenci.

While in Bisbee, where the special train of the Institute members arrives on the morning of September 20, the sub-committees are: I. B. Joralemon, general chairman. Mines Committee, Captain J. P. Hodgson, chairman, W. E. McKee, E. E. Whiteley. Entertainment, W. B. Cohring, chairman, A. C. McGregor, H. C. Henrie. Automobiles, Charles A. Mitke, chairman, Phillip D. Wilson, D. M. Rait.



Bisbee Daily Review, September 10, 1916.



These committees will see to it that the visitors and their wives and women folks are entertained while in the Warren District

The program here includes visits to the various mines on the morning of arrival, a technical session in the afternoon in the auditorium of the High School and a banquet in the evening at the Warren District Country Club. The special leaves that evening at 10 o'clock, from Corta, for Globe, where the special will spend two days between that city and Miami.

While on the trip a large number of highly interesting papers will be given by various members of the Institute. Sixty-three is the number now scheduled on the program. Among the papers of special interest to people in this section will be "Stopping in the Calumet and Arizona Mines" by Phillip D. Wilson, of Warren; "Co-Operative Effort in Mining", by Captain J. P. Hodgson, of Bisbee; "Geology of the Warren District", jointly by Y. Bonillas, J. B. Tenney and Leon Feuchere, all of the Warren District; "Features of the New Smelting Plants in Arizona" by A. G. McGregor, of Warren.

At Douglas, where the special will arrive from Hurley, New Mexico, at 7 A. M. on the morning of September 19, the method of entertainment includes visits to the two smelters there in the morning, lunch on the special train of the Institute, and a technical session on smelting practice in the afternoon. That night the special will leave for Bisbee.

From Bisbee the special goes to Globe for two days. After the Globe-Miami District the members will go by automobile to Phoenix, via the Roosevelt Dam, their special train in the meantime being sent by rail through the capital city. The program includes a stop at the big reservoir and an arrival at Phoenix about 6 o'clock Sunday evening. The train will immediately leave for the Grand Canyon, where the arrival of the train is expected at 8 o'clock Sunday morning. This concludes the itinerary of the trip through Arizona.

All of the great mining engineers and metallurgists in the country may be numbered as members of the American Institute of Mining Engineers and a large number will make the trip this year. According to present estimates about 160 people will be on the train.

Among those who are expected are: Dr. L. D. Ricketts, president of the Institute; W. L. Saunders, a past president of the Institute and president of the Ingersall Rand Company, and a member of the Naval Consulting Board of the United States; Benjamin B. Thayer, another past president of the Institute, and vice-president of the Anaconda Mining Company; Seeley W. Mudd, director of the United Eastern and the Ray Consolidated Copper Company and largely interested in Arizona mines; E. P. Mathewson, one of the officials of the Anaconda company; Charles F. Rand, president of the Cuban-American Iron Company, and many others of national repute.

The New York Times of August 23 contained an interesting article on vanadium, and it will be of special interest to stockholders of the Shattuck Copper company, since that company has an estimated tonnage of 3,000 tons of ore running 10 per cent magnetic vanadium, and a much larger tonnage of 1.8 per cent concentrating ore.

This ore is at present unmarketable as ore, and the Shattuck management in laboratory experiments has separated the principal metals and recovered the vanadium as an oxide. An electric furnace has now been ordered for its further reduction to commercial alloy, ferro-vanadium. If the tests with this furnace are successful a plant is contemplated for treating the ore and on a commercial scale at the property or at least for its partial treatment. According to all tests the ore carries an unusually high percentage it should prove an asset of much future value.

The Times' article follows:



Bisbee Daily Review, September 10, 1916.



"One of the most remarkable stories of a business success achieved through the changing industrial situation of the United States since the outbreak of the European war came to light yesterday with the brief announcement that the American Vanadium company of Pittsburgh, a \$700,000 corporation formed in 1906 to mine and sell vanadium, had been purchased by a group of Eastern capitalists.

"At the head of the syndicate which takes over the young company are J. L. Replogle, who became a millionaire almost overnight through his coup in Cambria Steel, and Kuhn, Loeb & Co. With them are associated Cassatt & Co. of Philadelphia, Chandler Brothers & Co., Harrison Williams, and half a dozen others. Mr. Replogle, now vice-president and general manager of the company, will be made president after the conclusion of the sale. James J. Flannery, head of the present company, will become chairman of the board. Mr. Flannery desires to be relieved of active duties.

"A year ago American Vanadium stock was considered to be worth \$152 a share. The last sale reported was made at about \$600. The syndicate is offering \$1,000 a share, of which \$650 will be paid in cash and \$350 in 6% notes, or in stock of the new company. The new company, which will retain the name of the old, will have a capital of \$13,500,000, made up of \$5,000,000 of 7% preferred stock, \$6,000,000 of common, and \$2,500,000 of 6% short term notes. Mr. Replogle will hold a very large interest in the new company. Gossip in the financial district yesterday had it that he has sold his stock in the present company at a profit of between \$1,500,000 and \$2,000,000.

"Vanadium was one of the rarest minerals known until 1905 when rich deposits were discovered in the Peruvian Andes, 16,200 ft. above sea level. In 1892 it was listed as the rarest metal, being valued at that time at \$4,792 a pound, or at twenty times the value of gold. It is now sold at \$3.50 a pound, and its uses have increased at a rapid rate. It is sold very largely to the makers of high speed tools, large calibre guns, helmets, aeroplanes, locomotives and railroads. The American Vanadium company owns 92% of the known deposits of the metal.

"The sale of the American Vanadium company to the Eastern interests will probably be ratified next Tuesday. Most of the stock is in the hands of the management and has been pledged under the plan. No earning statement has been made public, but the profits of the last two years are known to have been very large. Despite the loss of one of the principal markets for the metal the blockade of the Central Powers."





1916

Bisbee Daily Review, September 17, 1916.

American Institute of Mining Engineers Visits Bisbee During Coming Week

ELABORATE PROGRAM WILL PROVIDE FOR MANY TRIPS INTO MINES OF BIG STATE

Special Train of the Institute Arrives in Southwest Mining Country Tomorrow at Santa Rita, New Mexico, Where the Chino Copper Company will Be Visited – Douglas and Its Array of Smelters Will Be the Next Stopping Place.

Bisbee Will Be Visited Wednesday When Local Engineers and Their Friends will Take Visitors Through Mines in the Morning and in the Afternoon will Hold a Technical Session With a Banquet at the Country Club in Evening.

Monday, September 18th:

Arrive Santa Rita, 4:00 A. M.
Breakfast.
Visit mines of Chino Copper Company and mill of Empire Zinc Company.
Luncheon.
Leave Santa Rita 2:00 P. M.
Arrive Hurley, 2:45 P. M.
Visit mill of Chino Copper Company.
Dinner.
Leave Hurley 10:15 P. M.

Tuesday, September 19th:

Arrive Douglas, 7:00 A. M.
Breakfast.
Visit Reduction Works of Copper Queen Consolidated Mining Co. and of Calumet & Arizona Mining Co.
Luncheon.
Technical Session on "Smelting".
Dinner.
Technical Session on "Leaching".
Leave Douglas 11:00 P. M.

Wednesday, September 20th:

Arrive Bisbee, 1:00 A. M.
Breakfast.
Visit mines of district.
Luncheon.
Technical Session on "Mining and Geology".
Banquet at Warren District Country Club, 7:00 P. M.
Social evening.
Leave Warren District Country Club, 10:00 P. M.

Thursday, September 21st:

Arrive Globe, 9:00 A. M.
Breakfast.
Visit to Mines and Reduction Works of Old Dominion Copper Co.
Luncheon.
Technical Session on "Concentration and Flotation".
Dinner.
Technical Session on "Fine Grinding".

Friday, September 22nd: (Globe)

Breakfast.
Visit Reduction Works of International Smelting & Refining Co., and Mills of the Inspiration Consolidated Copper Co., and the Miami Copper Co.
Luncheon.
Technical Session on "Mining and Smelting".
Banquet.
Social evening.

(The Ray Consolidated Copper Co. will welcome members and guests who desire to visit the mine at Ray. Special arrangements must be made by omitting other features on the program, and with the understanding that those who go to Ray must reach Phoenix in time to take the train from there).

Saturday, September 23d: (Globe)

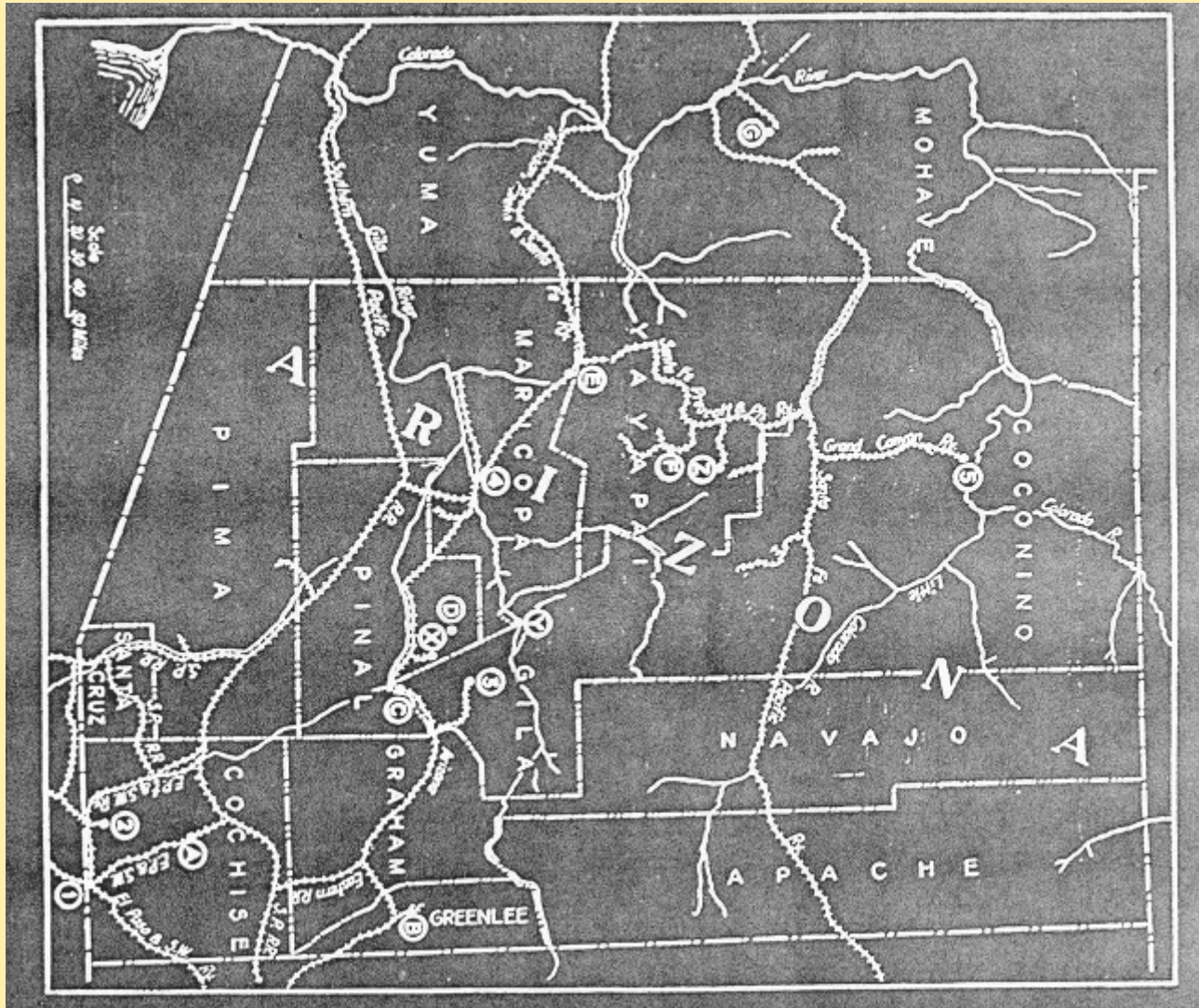
Breakfast.
Leave Globe by automobile over Apache Trail, including visit to Roosevelt Dam.
Box luncheon en route.
Arrive Phoenix about 5:30 P. M.
Dinner.
Leave Phoenix 8:00 P. M.

Sunday, September 24th:

Arrive Grand Canyon, 8:00 A. M.
Breakfast.
Visit to points of interest.
Luncheon.
Dinner (early), 5:00 P. M.
Leave Grand Canyon 7:40 P. M.



Bisbee Daily Review, September 17, 1916.



The accompanying map taken from Metallurgical and Chemical engineering for August 15, 1916, gives the location of the principal metallurgical plants in the state. Numerals and letters refer to locations on the map, the former indicating the Institute route and the latter other metallurgical centers.

Copper Concentrating Mills.		Cyanide Mills.	
B	Arizona Copper Company, Clifton.	A	Commonwealth Mining and Milling Company, Pearce.
F	Consolidated Arizona Smelting Company, Humboldt.	Z	Copper Chief Mine (Hayden Development Co.), Jerome.
B	Detroit Copper Mining Company, Morenci.	G	Gold Road Mines Company, Goldroad.
3	Inspiration Consolidated Copper Company, Miami.	G	Tom Reed Gold Mines Company, Oatman.
D	Magma Copper Company, Superior.	G	United Eastern Mining Company, Oatman.
3	Miami Copper Company, Miami.	E	Vulture Mines Company, Wickenburg.
X	Old Dominion Copper Mining and Smelting Co., Globe.		
X	Ray Consolidated Copper Company, Hayden.		
B	Shannon Copper Company, Clifton.		
Copper Reduction Works.			
C	American Smelting and Refining Company, Hayden.		
B	Arizona Copper Company, Clifton.		
1	Calumet and Arizona Mining Company, Douglas.		
F	Consolidated Arizona Smelting Company, Humboldt.		
1	Copper Queen Consolidated Mining Company, Douglas.		
B	Detroit Copper Mining Company, Morenci.		
3	International Smelting Company, Miami.		
3	Old Dominion Copper Mining and Smelting Co., Globe.		
B	Shannon Copper Company, Clifton.		
Z	United Verde Copper Company, Clarkdale.		



Bisbee Daily Review, September 17, 1916.



ARIZONA COMMITTEE ON ARRANGEMENTS

Gerald F. G. Sherman	Chairman
Arthur Nottman	Secretary
Norman Carmichael	
W. G. McBride	
John C. Greenway	
W. L. Clark	
B. Britton Gottsberger	
Forrest Rutherford.	

COMMITTEE ON TRANSPORTATION

Walter Douglas	Chairman
Cleveland E. Dodge	Secretary
Arthur S. Dwight	
John C. Greenway	
Julius Kruttschnitt, Jr.	

LOCAL CHAIRMEN

Santa Rita	J. M. Sully
Douglas	Forest Rutherford
Bisbee	I. B. Joralemen
Globe	L. O. Howard
Miami	F. W. McIennan

OFFICERS

For the Year Ending February, 1917

L. D. Ricketts	President
B. B. Thayer	Past-President
W. L. Saunders	Past-President
Sidney J. Jennings	First Vice-President
George C. Stone	Treasurer
Rossiter W. Raymond	Secretary Emeritus
Bradley Stoughton	Secretary
H. C. Hoover	Vice-President
Joseph W. Richards	Vice-President
Sidney J. Jennings	Vice-President
Phillip N. Moore	Vice-President
Karl Ellers	Vice-President
James MacNaughton	Vice-President
Reginal W. Brock	Director
D. C. Jackling	Director
Albert R. Ledoux	Director
Charles W. Merrill	Director
Henry L. Smyth	Director
Walter H. Aldridge	Director
Robert W. Hunt	Director
Hennen Jennings	Director
George C. Stone	Director
Samuel A. Taylor	Director
George D. Barron	Director
Charles W. Goodale	Director
Edwin Ludlow	Director
Charles F. Rand	Director
Thomas B. Stearns	Director



Bisbee Daily Review, September 17, 1916.



BRAINS OF PROFESSION TO GIVE TALKS AND PAPERS DURING THE BIG MEETING

Many of the Leading Authorities in the Industry Will Be on Board the Special Train and Their Lectures Will Be Offered at the Various Technical Sessions to Be Held Along the Route—Many Will Be of Interest to Warren District

Several Engineers From the Warren District on the Program for Papers Relating to Mining and Geology, and One Is to Give a Paper Upon the New Smelting Plants in State of Arizona—Technical Session to Be Held in High School.

MINING.

Mines Accounting for Small Mines. By James E. Chapman
Automatic Operation of Mine Hoists as Exemplified by the
New Electric Hoists of the Inspiration Consolidated Cop-
per Company.

By H. Kenyon Burch and M. A. Whiting
Comparative Friction Test of Two Types of Coal Mine Cars.
By P. B. Liebermana

The Water Problem at the Old Dominion Mine.
By P. G. Beckett
The Composition of the Rock Gas of the Cripple Creek Min-
ing District, Colorado.

By George A. Burrell and Alfred W. Gauger
The Solution of Some Hydraulic Mining Problems on Ruby
Creek, British Columbia.

By Chester F. Lee and T. M. Daulton
The Rifling of Diamond-Drill Cores. By Walter R. Crane
Method of Mining Talc. By F. R. Hewitt
Stoping in the Calumet and Arizona Mines, Bisbee, Ariz.

By Phillip D. Wilson
Stoping Methods of Miami Copper Co. By David B. Scott
Co-operative Effort in Mining. By Joseph P. Hodgson
Diesel Engines Versus Steam Turbines for Mine Power Plants.
By Herbert Haas

Modern Methods of Mining and Ventilating Thick Pitching
Beds. By H. N. Crankshaw
Motor Truck Operation at Mammoth Collins Mine, Shultz,
Ariz. By Wilbert G. McBride

Mine Fire Methods Employed by the United Verde Copper Co.
By Robert E. Tally
Comparisons Between Electrolytic Copper and Two Varieties
of Arsenical Lake Copper with Respect to Strength and
Ductility in Cold-Worked and Annealed Test Strips.

By C. H. Mathewson and E. M. Thallheimer
Tungsten and Molybdenum Equilibrium Diagram and System
of Crystallization. By Zay Jeffries



**FLOTATION AND ORE DRESSING.**

Flotation Concentration at Anaconda, Mont.

By Frederick Laist and Albert E. Wiggin

The Flotation of Minerals. By Robert J. Anderson

An Explanation of the Flotation Process.

By A. F. Taggart and F. E. Beach

A New Flotation Oil.

By Maxwell Adams

A New Source of Flotative Agents. By G. H. Clevenger

History of the Flotation Process at Inspiration.

By Rudolf Gahl

Some Miscellaneous Weed Oils for Flotation.

By R. C. Palmer, Glenn L. Allen and O. C. Ralston

The Advent of Flotation in the Clifton-Morenci District,

Arizona, 1914-1915.

By David Cole

A Combined Hydraulic and Mechanical Classifier.

By M. G. F. Sohulola

Comparative-Test of the Marathon, Chillan and Hardinge

Mills.

By F. G. Blickensderfer

Mine and Mill Plant of the Inspiration Cons. Copper Co.

By H. Kenyon Burch

SMELTING, ETC.

The Decomposition and Reduction of Lead Sulphate at Elevated Temperatures.

By W. Mostowitsch, Edited by H. O. Hofman

Determination of Dust Losses at the Copper Queen Reduction

Works.

By J. Moore Samuel

Cost and Extraction in the Selection of a Mining Method.

By C. E. Arnold

The Illuminating Power of Safety Lamps. By W. M. Weigel

Power Plant at Barro Mountain Copper Co.

By Charles Legrand

Ore-Drawing Tests and the Resulting Mining Methods of In-

spiration Cons. Copper Co.

By G. R. Lehman

Shaft Sinking Through Soft Material. By Edward A. Sayre

The Block Method of Top Slicing of the Miami Copper Co.

Mine.

By E. G. Deane

The Antecedent Mineral Discovery Requirement.

By E. D. Gardner

GEOLOGY AND MINERALOGY.

Petrography of the Mount Morgan Mine, Queensland.

By W. E. Gaby

Geology of the Warren Mining District.

By Y. Bonillas, J. B. Tenney and Leon Feuchere

CYANIDATION.

Laboratory Method for Determining the Capacity of Slime-

Settling Tanks.

By H. S. Gee and G. H. Clevenger

The Liberty Bell Methods of Precipitate Refining.

By A. J. Weing

Mining and Milling Practice at Santa Gertrudis.

By Hugh Ross

Cyaniding Clayey Ores at the Buckhorn Gold Mine.

By Paul R. Cook

MISCELLANEOUS.

The Application and Earning Power of Chemistry in the

Coal Mining Industry.

By Edwin M. Chance

The System Tungsten-Molybdenum.

By Frank Alfred Fabrenwald

(Continued on Page 2)

(Continued from page one)

An Investigation into the Flowing Temperatures of Copper

Mattes and of Copper-Nickel Mattes.

By G. A. Guess and F. E. Lathe

Features of the New Copper Smelting Plants in Arizona.

By A. G. McGregor

Smelting at the Arizona Copper Co's Works.

By F. N. Flynn

The Basic Lined Converter in the Southwest.

By L. O. Howard

LEACHING.

2000-Ton Leaching Plant at Anaconda.

By Frederick Laist and Harold W. Aldrich

Possibilities in the Wet Treatment of Copper Concentrates.

By Lawrence Addicks

Leaching Tests at New Cornelia.

By H. W. Morse and E. A. Toblemann

ORE DEPOSITS.

Gold and Silver Deposits of North and South America.

By Waldemar Lindgren

Fuel in Turkey.

By Leon Dominian

Manganese Ores of Russia, India, Brazil and Chile.

By E. C. Harder

The Emerald Deposits of Muzo, Columbia.

By Joseph E. Pogue

The Radio-Activity of Allanite.

By L. S. Pratt

Zircon-Bearing Pegmatites in Virginia. By Thomas L. Watson

Iron Pyrites Deposits in Southeastern Ontario, Canada.

By P. E. Hopkins

PETROLEUM AND GAS.

Principles of Natural Gas Leashold Valuation. By S. S. Wyer

The California Gasoline Industry.

By W. R. Hamilton

The Diastrophic Theory.

By Marcel R. Daly

The Possibility of Deep Sand Oil and Gas in the Appalachian

Geo-Syncline of West Virginia. By David B. Roeger



Bisbee Daily Review, September 24, 1916.



Arizona Is Host to Greatest Gathering of Men In Its Life

During the Past Week the Special Train Bearing the American Institute of Mining Engineers, Has Been Paying Arizona a Long Expected Visit—Nearly Every Bib Mining and Smelting Center Will Have Been Visited Before the Trip Is Ended.

Refining Capacity of the United States Does Not Appear to Be Keeping Pace With the Greatly Increased Production of the Mines and Much Speculation Is Aroused, as a Consequence, Over the Ability of Copper Production to Be Augmented.

Arizona, during the past week, has been host to the most eminent train-load of visitors in its history. This became a fact with the arrival in Douglas, last Tuesday morning, of the train bearing the members of the American Institute of Mining Engineers, the leading organization of its character in the world.

The state has been more or less familiar with the members of the A. I. M. E., through the press and particularly that part of it which devotes considerable space to the work of mines and their operators. A large number of the visitors are interested directly or indirectly in properties in the youngest state and with those whose interests are in other parts of the United States and the entire world made a particularly good impression on the people of the commonwealth.

Undoubtedly much good will come of the engineers visit to the state. They visited Douglas' smelters, Bisbee's mines, Globe and Miami, where both mines and smelters were seen and then looked over the fountain head of Arizona's big irrigation project—the Roosevelt Dam, and finished by witnessing the greatest wonder in the world—Arizona's Grand Canyon. Could these spectacles fail to impress even the most hardened professional man in America



Bisbee Daily Review, September 24, 1916.



THE REFINING CAPACITY.

Numberless people who look into the future are wondering that the effect of the great increase in production and the very limited increase in refining capacity will bring forth in the next year. Will it force some of the mines and great properties to curtail production? Some say it will. Others are of the opinion that the one will keep pace with the other.

The Engineering and Mining Journal, which is quoted here, throws some interesting light on the refining capacity of the country:

"It is well known that the production of crude copper has increased in 1916 to a larger extent than has that of refined copper. The lag in the latter has been due to inability to increase quickly the refining capacity, which throughout the year has been taxed to the utmost. The supply of copper has in fact been checked in the refineries. We have recently made a survey of this situation.

"On January 1, 1916, the electrolytic refiners of the United States reported an aggregate capacity at the rate of 1,877,000,000 pounds of copper per annum, or about 156,000,000 pounds per month. Adding 20,000,000 pounds per month for the copper that is refined otherwise than electrolytically and for what is marketed as pig, we had a total capacity for the production of about 176,000,000 pounds of refined copper per month.

"However, the operators of refineries are seldom able to maintain the full rated capacity for a long period. The actual production during the first half of 1916 is estimated at about 1,000,000,000 pounds, or about 167,000,000 pounds per month, and that estimate is probably not far out of the way.

"On September 1, 1916, the refiners reported an aggregate capacity of 2,173,000,000 pounds per annum. The increase was due chiefly to the new Anaconda refinery at Great Falls, intended to replace the old one, which had been begun in 1915. At three other refineries there had been increases of capacity relatively small.

"On September 1, 1916, there was construction going on at four refineries, which was figured as adding about 220,000,000 pounds per annum to the capacity of the United States. This was coming along but slowly, owing to the inability to obtain prompt delivery of material and machinery. It is estimated that part of it will be ready for use in January, 1917, and part of it in February. However, at present there is no certainty respecting estimates of time.

"Anyway, it is clear that no relief from the tightness in the position of refined copper is to be expected until the early part of 1917. In the mean time, many mines producing increased quantities of copper must face the contingency of being unable to sell all of it immediately out of sheer inability to get it smelted and refined. The situation in copper is now similar to the situation in zinc in 1915, but copper refining capacity cannot be augmented so easily and so rapidly as was the case with zinc."





1916

Bisbee Daily Review, September 24, 1916.

EUROPE WANTS COPPER.

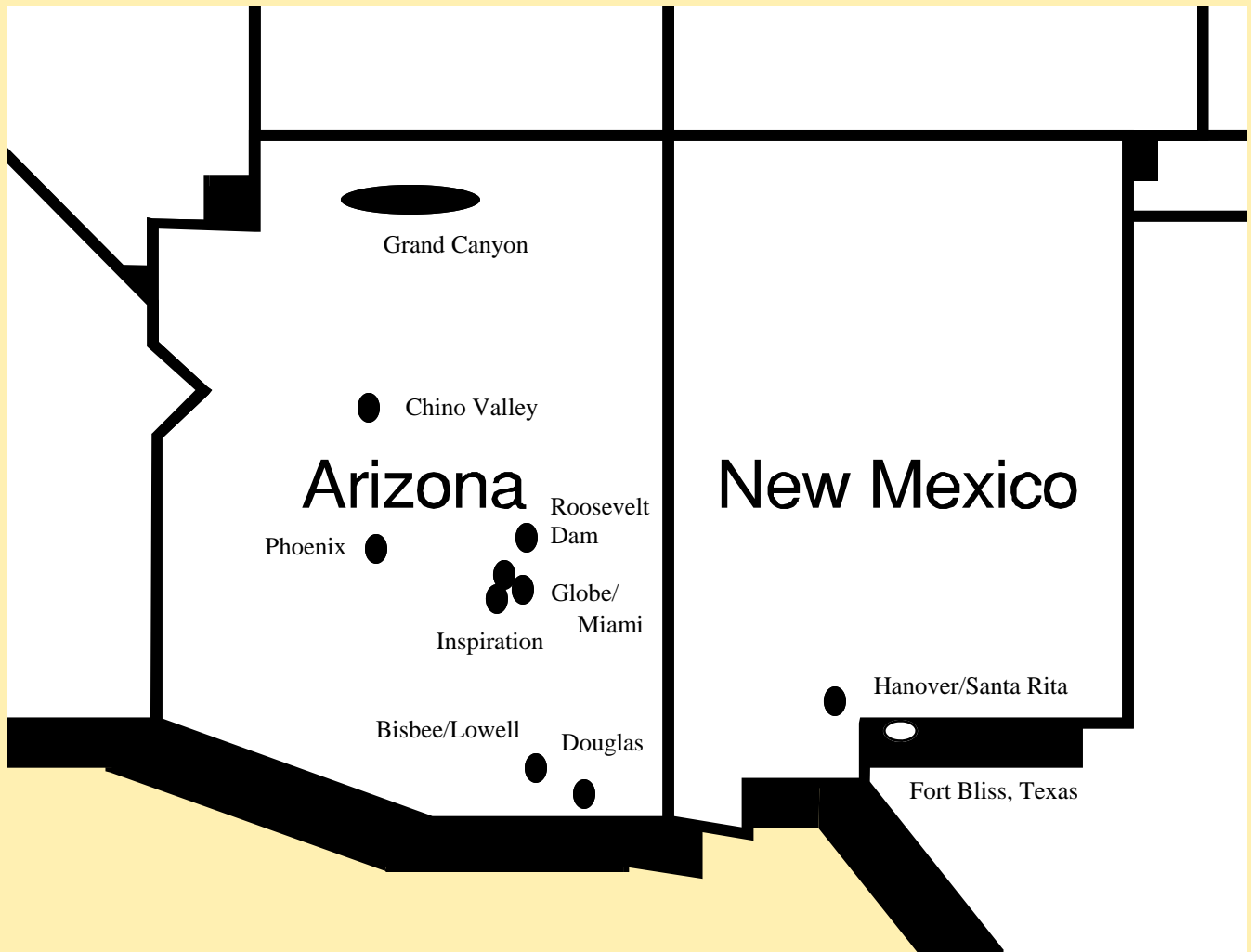
"It is reported that the allied governments of Europe have reopened their negotiations for 400,000,000 or 500,000,000 pounds of copper, deliverable in equal monthly instalments throughout 1917. The producing companies are showing an indisposition to make contracts so far in advance and the negotiations probably will result in the purchase of 200,000,000 or 300,000,000 pounds to be delivered during the first four to six months of the year," says George S. Walker in his Weekly Copper Letter.

"Domestic manufacturers are receiving new orders for munitions and for brass rods and sheets, and are contracting for copper to cover such requirements. So far as can be learned, all of the copper that has been sold for home delivery was to cover orders actually in hand and none of it represents speculation or anticipation of possible future business. These new orders are not being taken subject to cancellation. The products will be turned out and delivered, making it certain that none of this copper will come back on the market.





Some places visited on the AIME Tour of Mines, 1916.



People listed in the pictures:

Moore, Buehler, McCount, Davis, Ransone, Krugan, Rawlins, J. Grugan, A. E. Ring, R. Hall, E. Robinson, J. Manning, H. Swartley, J. Watkins, R. McIntosh and P. Sterling.





SME & AIME

In 1905 Ambrose became a member of the **Society for Mining, Metallurgy, and Exploration**, which also made him a member of the umbrella society of **The American Institute of Mining, Metallurgical, and Petroleum Engineers**. He was a member until his death in 1952.

Society for Mining, Metallurgy, and Exploration



The Society for Mining, Metallurgy, and Exploration advances the worldwide mining and minerals community through information exchange and professional development. Through its technical publications and meetings, minerals professionals collect, disseminate and exchange information concerning the exploration for and extraction and processing of metallic, nonmetallic, and fuel ores and other materials produced through mining techniques for the public benefit.

The American Institute of Mining, Metallurgical, and Petroleum Engineers



AIME was founded in 1871 by 22 mining engineers in Wilkes-Barre, PA. Just as when it was founded, the goal of AIME today is to advance the knowledge of engineering and the arts and sciences involved in the production and use of minerals, metals, materials and energy resources, while disseminating significant developments in these areas of technology. Today the memberships of the AIME Member Societies total nearly 90,000 and include some of the most important, influential and innovative figures in the engineering and scientific communities.



AIME is uniquely structured among engineering societies in that it embodies the interests of several engineering groups. It is composed of five separately incorporated units, AIME Institute Headquarters, and four autonomous Member Societies:

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American Institute of Mining Engineers (AIME)
Tour of Mines in 1916.



Fort Bliss – from the train.



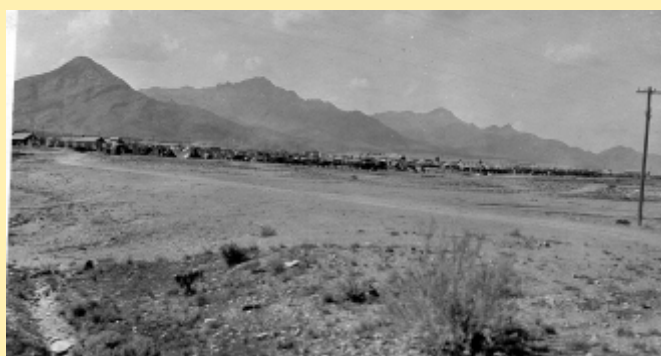
Overlooking Ft. Bliss from the Mesa.



Ft. Bliss – Parade Ground in distance.



Ft. Bliss in distance.



Ft. Bliss.



Ft. Bliss.



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A.I.M.E. Train-14 Cars at Santa Rita,
N.M.



Chino Copper Co. sight seeing train.



Two Views of Chino Copper Co. Office at Santa Rita—large slab of Native copper, skin
bags, old timbers, skin windlass bucket and rope used by Spaniards.



Two Views of Barbecue on concrete Tennis Court at Santa Rita.



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West Pit at Chino.



East Pit at Chino



Looking South from "A" in above.



Shooting in east Pit – Chino.



Tailings Dam below Chino Mill at Hurley
a second dam shows in the distance
next.



Oliver Filters and Concrete Concentrate
Tanks. Clam shell bucket crane loading
box cars through traveling hopper.



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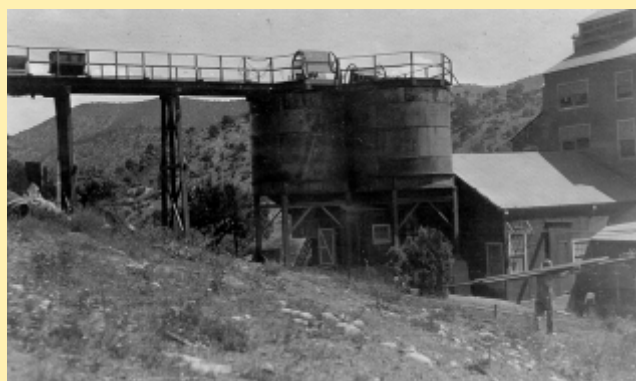
Main Concentrate Tanks – Distributing Arm Launderers on arcs. Traveling Crane and bucket loads out of bins into cars.



All Concentrates pass over a magnetic drum which removes the magnetic iron.



Custom House at Douglas, Arizona.



Empire Zinc Co. – Hanover N.M. (near Santa Rita) 3 Circular Storage Bins – Witherell Magnetic Separators.



Two Views of Copper Queen Bedding Troughs Layers of ore, lime molten slag, etc. dumped in and spread with machine in left picture. Reclaiming done with bucket hoist in right picture.



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Two Views of Calumet & Arizona Smelter – Douglas, Ariz. Ore Bedding – Ore is distributed by belt conveyers (also fluxes). Machine shown takes lateral slices, scraping on to belt conveyor in side ditch.



Copper Queen Smelter
Converters blowing.



Copper Queen Smelter
Converters blowing.



Casting Machine at Copper Queen
Smelter.



Lowell, Arizona from Briggs Shaft,
(Bisbee).





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Part of Bisbee – Sacramento Hill in background.



Extra Cages at Junction Shaft – Bisbee.



Steel Car – Briggs Shaft – Bisbee.



Storage bin at Old Dominion Shaft,
Globe, Arizona.



Old Dominion Tailings Disposal. Radial
launder on tracks.



Mexicans working over caved surface of
Old Dominion fault about 200 ft. below
crest of hanging wall.



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Junction Shaft, Bisbee.



Brigs Shaft, Bisbee
Double Deck cages.



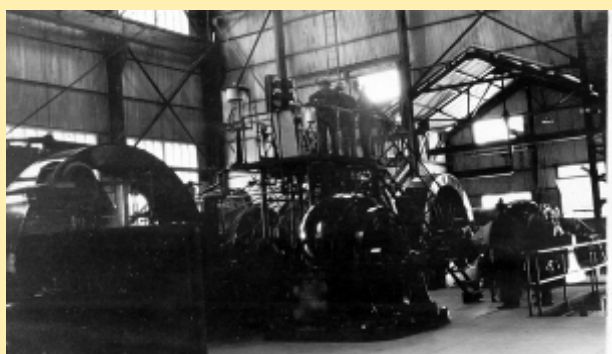
Removable "Man" cages at
Old Dominion Shaft.



Messrs. More, Buehler, McCourt, Davis, Ransome & Supt. On Old Dominion Hill – Globe. International Smelter in distance..



Inspiration Copper Co.
Shaft Entrance.



Inspiration Copper Co., Engine room – 6
Hoists – no engineer.



Inspiration Copper Co., 12 to Skip.



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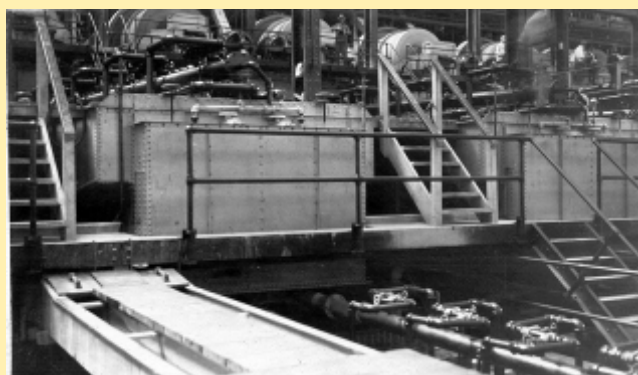
American Institute of Mining Engineers (AIME)
Tour of Mines in 1916.



Inspiration Copper Co., Skip Dumps



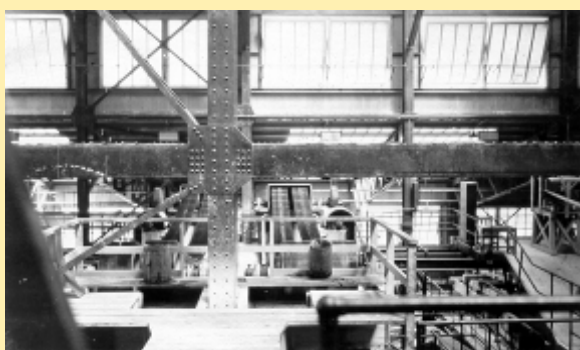
Inspiration Copper Co., Miami, Arizona.



Inspiration Mill – Flotation Machines.



Inspiration Mill, Double Deck Deister Tables and Drag Classifiers.



Inspiration Mill, Double Deck Deister Tables and Drag Classifiers.

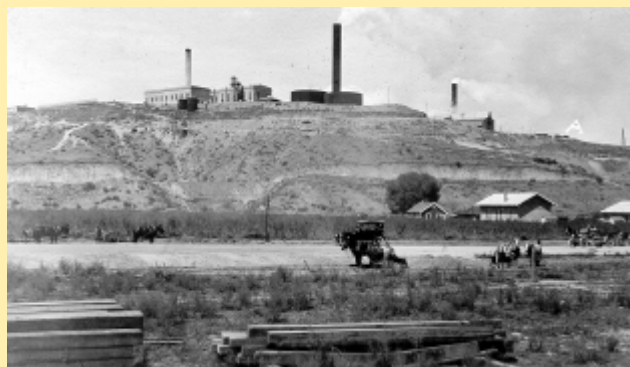


Miami, from "A" in next picture.



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International Smelter – Miami, Arizona.



Not Captioned.



Not Captioned.



From Globe to Phoenix, First view of Roosevelt Lake.



Globe to Phoenix – Closer to Roosevelt Lake.



Globe to Phoenix – Cacti on Hillside.



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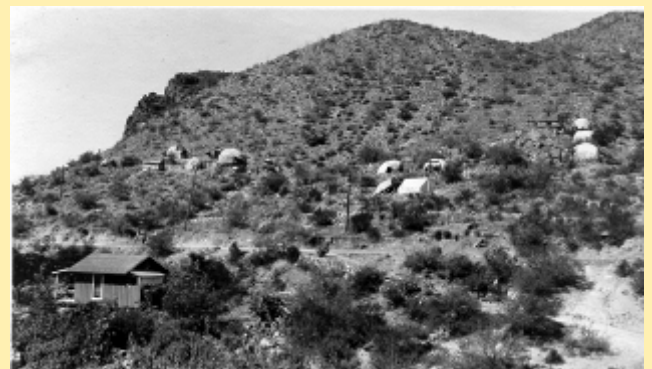
Globe to Phoenix – Roosevelt Lake.



Globe to Phoenix – Roosevelt Dam from Road
– Cement plant for building dam on left.



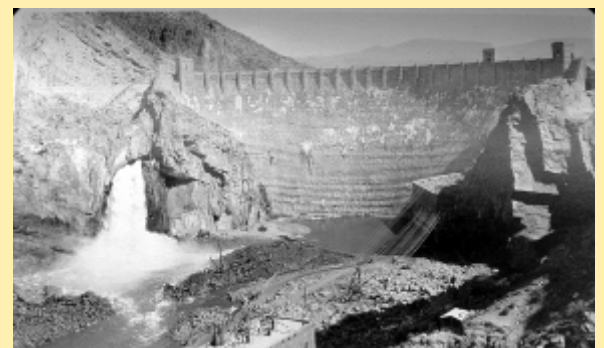
Globe to Phoenix – Lake from Hotel.



Globe to Phoenix – Apache Village near
Roosevelt.



Globe to Phoenix – “Our Party” Messrs.
Moore, Krugan, Kuchs, Rawlings,
Buehler.



Globe to Phoenix – Roosevelt Dam –
from below 255’ High.



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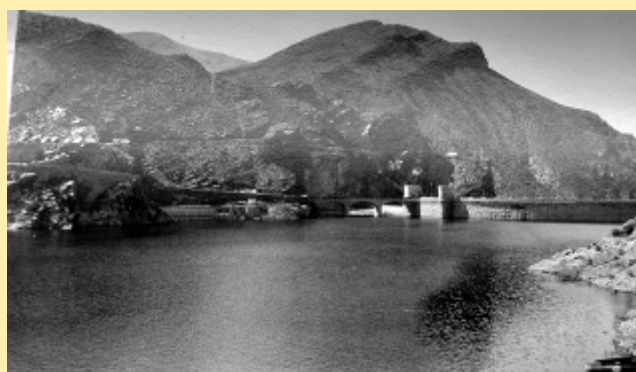
Globe to Phoenix – Roosevelt Dam –
East End – Main Road above.



Globe to Phoenix – Roosevelt Dam –
waste water fall.



Globe to Phoenix – Roosevelt Dam –
waste water fall.



Globe to Phoenix – Roosevelt Dam &
East Spillway from Hotel.



Globe to Phoenix – Apache Village near
Dam.



Globe to Phoenix – Cacti.

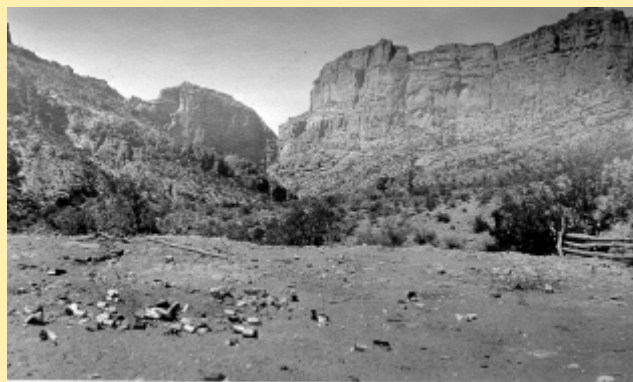


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Tour of Mines in 1916.**



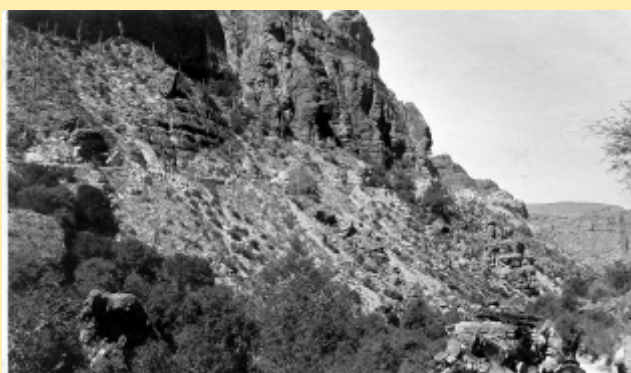
Globe to Phoenix – Taking a picture of Apache Squaw at Roosevelt.



Globe to Phoenix – View from Fish Creek.



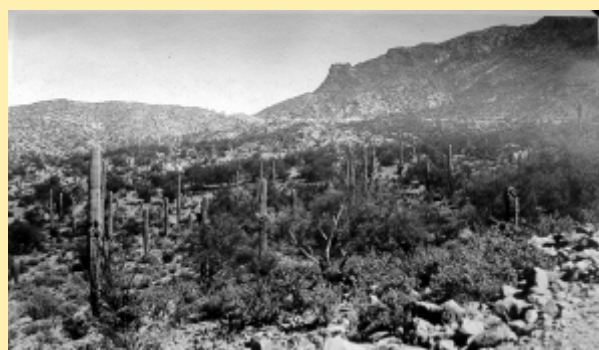
Globe to Phoenix – In Fish Creek.



Globe to Phoenix – Road out of Fish Creek Canyon.



Globe to Phoenix – Road out of Fish Creek Canyon.



Globe to Phoenix – Cactus Field.

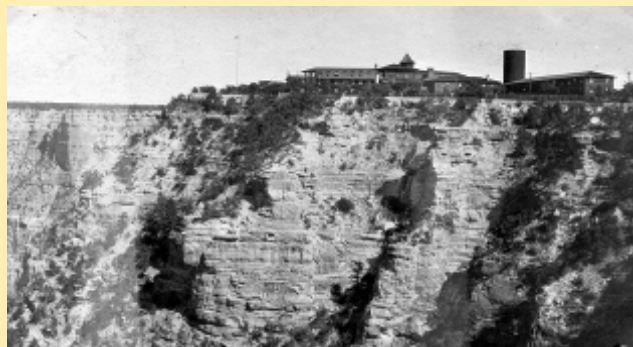


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Tour of Mines in 1916.



Globe to Phoenix – Canyons from the Trail.



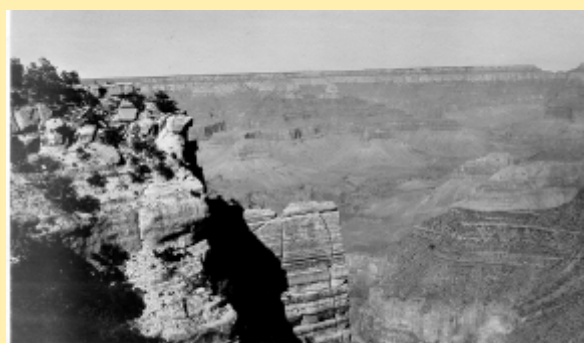
El Tovar Hotel.



The Grand Canyon of the Colorado.
From El Tovar Hotel “Afternoon.”



Hotel from Maricopa Point.



A View on the way to Maricopa Point.



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Tour of Mines in 1916.



From near Maricopa Point.



On Maricopa Point - Krugan & Buehler.



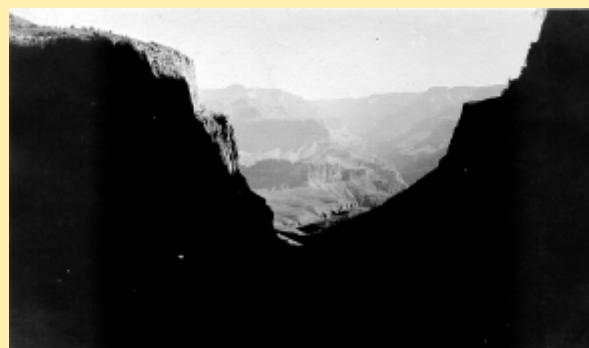
On Maricopa Point - Krugan & Buehler.



Sunset from Maricopa.



Sunrise.



Early Morning – Looking out from Bright Angel Trail.



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A portion of the upper part of the trail.



Across the Plateau – Morning.



Across the Plateau – Trail passes to right,
down into Canyon about 1500' deep, af-
ternoon.



Across the Plateau.



Looking down on Devils Corkscrew –
Trail shows some 1000' down at bot-
tom.

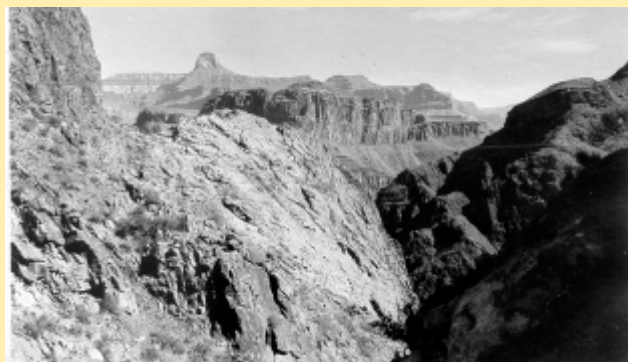


View from top of Corkscrew.

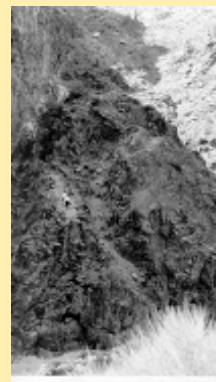


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View toward River from Corkscrew.



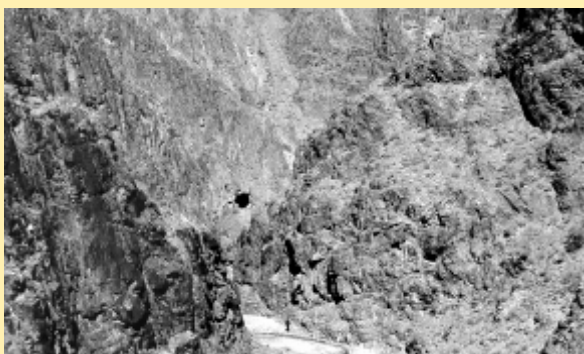
The Devils Corkscrew from below – some hot climb.



Below the Corkscrew in the Lower Canyon but still some distance from the River.



View in Lower Canyon.



View in Lower Canyon.



North East up the Colorado.



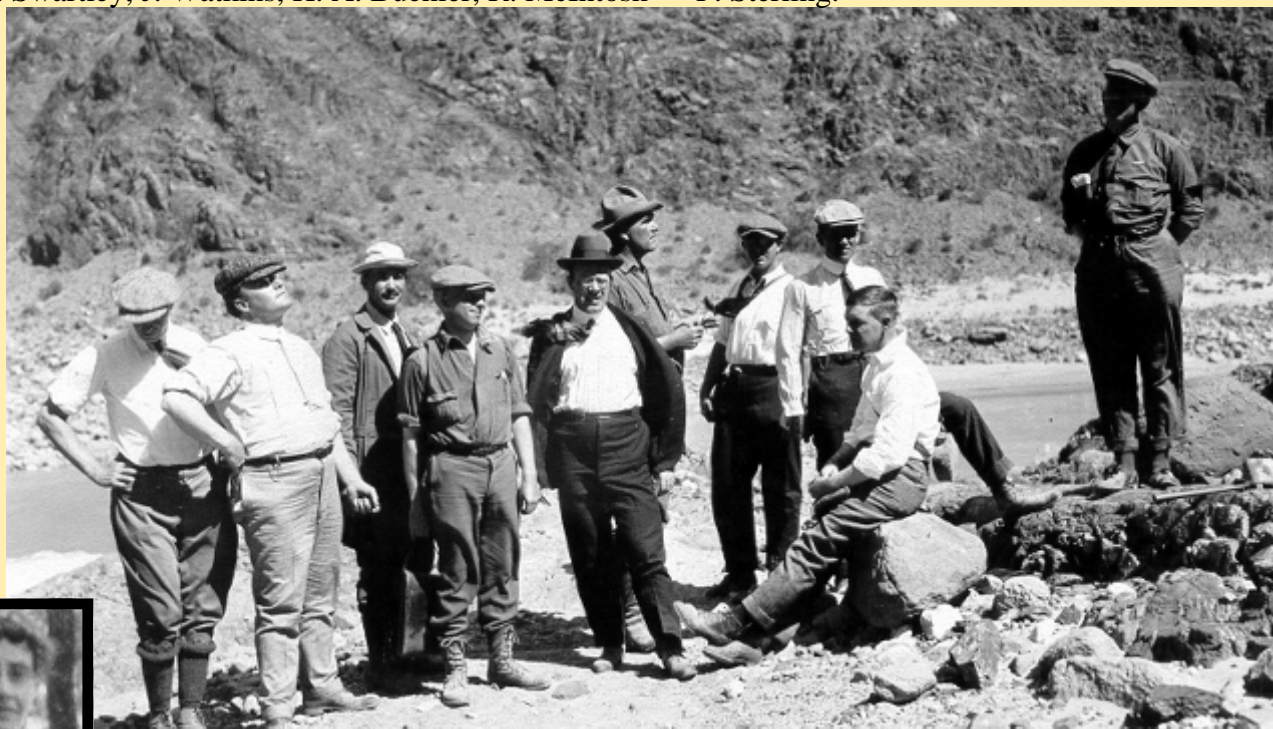
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At the River – J. Grugan – N.Y., E. Mills – Korea, R. McIntosh – Mich., E. Robinson – Pa., J. Manning – Korea, R. Hall – N.Y., Swartley – Pa., H. A. Buehler – Mo., P. Sterling – Pa., J. Watkins – D.C.

At the River – (below) J. Grugan, A. E. Ring, R. Hall, E. Robinson, J. Manning back row.
H. Swartley, J. Watkins, H. A. Buehler, R. McIntosh — P. Sterling.



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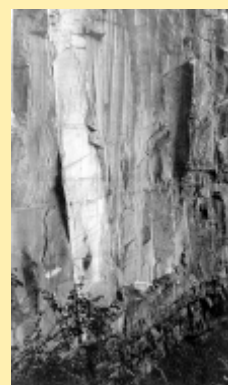
Down the Colorado.



Lunch at River.



On the Trail between the River and the
Corkscrew.



Contact.



Down from point about 1000' down
Bright Angel Trail.



Down Bright Angel Trail from near the
top.



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Hopi Indian House at El Tovar Hotel.



No Caption.

