to the property it will undoubtedly be one of the largest producers in the district. There are also many thousands of tons of almost pure gypsum, which can be shipped and will be a source of much revenue to the company.

Ore Deposits of the Third Class. The deposits of the third class include those previously mentioned under the heading of those which have been sufficiently developed to be called either lode or prospects. They are characterized by the development of chalcanthite and pyrite in some of the country rock alongside. Where there has been filling of open spaces, the workings show the ores to be chrysocolla, malachite, azurite, and native silver. Mineralization had usually worked metasomatically outward from the contact between the beds and enclosing walls, which produced low grade sulphide deposits. These have been enriched to some extent by downward working of the ore deposits of the second class.

The veins are propylitic in type, in that the whole body in which the ore occurs is propylitically altered. The ore is silver, along with copper, lead and zinc. The ore body at nearly right angles to its trend. The veins are characterized by the development of chalcanthite and pyrite in some of the country rock alongside. Where there has been filling of open spaces, the workings show the ores to be chrysocolla, malachite, azurite, and native silver. Mineralization had usually worked metasomatically outward from the contact between the beds and enclosing walls, which produced low grade sulphide deposits. These have been enriched to some extent by downward working of the ore deposits of the second class.

The third class deposits have also been formed by ascending hot waters, working their way along crevices and fissures, and into the country rock forming the walls, replacing it with ore. The deposition has always taken place along the walls of the deposit, and altered and contain in places much free silver. There has been very little secondary alteration of the deposits, and mineralization has usually worked metasomatically outward from the contact between the beds and enclosing walls, which produced low grade sulphide deposits. These have been enriched to some extent by downward working of the ore deposits of the second class.

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When, at the beginning of the present school year, the Alumni Association employed an Assistant Secretary, it was the intention that he should place the previously established Capability Exchange on a regular basis. It is only fair that those who benefit by the services of the exchange should contribute to its maintenance. The Assistant Secretary desires to call attention to the fact that it is necessary to secure funds to carry on the work of the exchange. The alumni association is just sufficient to pay the general expenses of the association, so it is only fair that those who benefit by securing positions through the exchange should contributes an extra expense by the payment of a reasonable commission.

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The Colorado School of Mines

Vol. I. GOLDEN, COLO., JANUARY, 1911 No. 4

Advertising rates on application to the Manager. Single copies, 25 cents

Subscription price, $1.25 per annum. Edited by JAY LONERGAN, '05, Editor and Manager.

The Assistant Secretary desires to call particular attention to the letter of Mr. Kirchmair, published under Alumni News, and the reply of the President therein. The Alumni Association falters to appreciate the necessity of Mr. Kirchmair's position. The Assistant Secretary would be glad to receive and publish letters addressed to the Alumni Association, discussing the criticism raised by this letter. How are we going to accomplish anything as an alumni association unless we pull together? Although Mr. Kirchmair may not feel that his brother alumni can do him any good, it is more than probable that by joining the association and lending his support and encouragement, he will be able to help them.
BASKETBALL PROSPECTS.

Golden, Colo., Dec. 19.—With the first three weeks of practice over, the basketball outlook at the Mines assumes brighter than ever. The fact that there are four men left from last year's championship, a squad of thirty men has turned out regularly for practice. This is the largest squad that has ever reported for the winter sport, and it includes many players who will make the veteran battle if they wish to hold the positions which they played last year.

The old men on the squad are Klaasen, explain; Woot; our last year's captain and star quarterback of this year's football team; Davis and Hitchcock. Gilbert, who has left school, is the only man missing.

Woolf and Klaasen were both picked for last year's All-College team.

Among the other men who have reported are Paine, Thomas and Backwood, who, with another, make up the quartet of the Arctic Brotherhood team, champions of Alaska. This team made an ex- tensive tour of the country a couple of years ago, winning 26 per cent. of their games and beating the best team the Miners ever turned out. Burns and Harper have also shown very promising form.

Although the athletics will not be positively known till after the next conference meeting, the following games are likely to be included. There will be eight intramural contests, two each with Boulder, Argus, Denver and Wyoming. It is also possible that the University of Colorado will be met in Golden. It is about probable that the other dates will be January 30 and February 17. The first game will be in Golden preceding a school dance given on that night. Owing to this a very large crowd is expected at the games. Shortly after the holidays the team will make a trip to Longmont, where they will meet Colorado School of Mines, and Wyoming teams.

The coaches are confident that this year's team will bring the Mines its seventh consecutive championship, and their only regret is that there has been no trophy offered for the winter. —Denver Post.

The FOOTBALL SITUATION.

Golden, Colo., Dec. 15.—The selection of Ted Shratl to coach the Mines football team again this year is causing considerable comment. On this account a special meeting of the alumni board of the school will be called within the next few days and some further action may be taken. New student members have been elected to the board and will assume their duties January 1. The following men have been elected: D. R. Alexander and C. H. May.

There has been more interest in this elec- tion than usual and close contests for the positions has been the result. It is not im- probable that the trustee of the school will take a hand in the athletic situation and that the council will be called in to give board in these affairs. The results for the board are as follows:

Quarterback: R. E. DeLaith, J. R. Deardorff and R. May. It is said that the trustees of the school will consider these results before they make any decision on this question.

The Colorado conference is on its good behavior as far as the conference is con- cerned, at least in connection with the School of Mines. According to reports, this feeling is not confined to the Mines alone as the majority of the conferences during the past two years are considered very in- effective and tasty manner. Doubtless it was the finest piece of work of the kind that could be desired, and included the soprano and the tenor. Miss Pahlen and B. M. Field was the leader of the dis- cussion, and compared the way in which the following discussion was conducted and the way in which the methods of this school. After he had fin- ished his remarks several other men spoke.

The next week the topic was "Excuses," and R. M. Field was the leader of the discus- sion. His speech of the many reasons given for not taking an active part in Christian activities in church and school, paying particular attention to those ad- vanced in this school. After he had finished his remarks several other men spoke. Briefly the things they had heard ad- vanced as excuses for not doing work in this organization. After all was said, how- ever, there were not more than two valid excuses remaining.

Lest We Forget" was the subject of the Christmas meeting held on December 20th and led by V. C. Robbins, '12. This evening was spent in talking about the ways in which we should spend the day and comparing them with the way in which others spend the day. The discussion was manifestly very encouraging, and many of the twenty-two men present took an active part in the meeting.

The Kellogg-Hall Singing Party.

The second number of the Entertainment Course was given on the evening of De- cember 3rd, in Guggenheim hall, before a large and appreciative audience. The course over was one continuous surprise, the pro- gram being so well arranged that the audience sat so well entertained, that there was not one person who did not enjoy the evening. It was a very well arranged and popular program. The audience was composed of many of the students and alumni of the school, and the audience was given a hearty welcome by the director of the program, Mr. J. Breach, who gave a very fine address on the subject of the volume, December 6th. The idea of music serv- ing as a means of entertainment is one that is gaining ground, and it is hoped that many men will come prepared to defend or attack the system as it is followed in other schools and colleges.

Frank R. Harris, '12, chose "The Second March" of Beethoven for the evening of December 6th. The idea of music serv- ing as a means of entertainment is one that is gaining ground, and it is hoped that many men will come prepared to defend or attack the system as it is followed in other schools and colleges.

Athletic News.

The recent line-up won by Dr. J. P. Kelly, president of the board of trustees, and Mrs. Kelly; Dr. Victor C. Alderson, president of the School of Mines, and Mrs. Alderson; Crit. C. Tolman, president of the class of 1914, and Miss Marion Crocker of Denver; Dunling commenced at 9:30, led by Presid- ent Tolman and Miss Crocker, with a capi- taincy by Tolman and Miss Crocker of ten pieces, partially concealed behind a huge bank of zizalka and feme, and continued until 5 o'clock.

Officers of the Freshman class, who are largely responsible for the unqualified suc- cess of this hall, are Crit. C. Tolman, presi- dent; Lillian W. Mathewson, vice-president; Russell P. Loke, secretary; Frank J. Pili- man, treasurer.

At the first fraternity banquet, and at many Golden homes, large home parties were en- tertained, so the festivities lasted through- out Saturday, and in some cases over Sun- day. There were a number of coaching positions and ten pieces. There was a large amount of interest shown by the Miners in these affairs, and the Miners were not the only ones who were interested in the party. The Miners were met by the New Century Band, and were entertained by the Miners.

Despite the fact that there are four high schools in the vicinity, there was no competition for the Mines in these affairs.

The Y. M. C. A. NOTES.

Religious Meetings.

The last four meetings of the Association have been led by students, and devoted to the discussion of questions that are of par- ticular interest to college men. The last meeting before Christmas, however, was a Christmas meeting.

November 28: R. V. Thurston, '11, chose an interesting subject for the evening. "The Vocal Chorus, J. W. 5. The composition of the group was very good, and the subject was well handled. It was not a very long meeting, but it was very interesting and entertaining. It was a very well arranged and popular program. The program was very well arranged and popular program. The audience was composed of many of the students and alumni of the school, and the audience was given a hearty welcome by the director of the program, Mr. J. Breach, who gave a very fine address on the subject of the volume, December 6th. The idea of music serv- ing as a means of entertainment is one that is gaining ground, and it is hoped that many men will come prepared to defend or attack the system as it is followed in other schools and colleges.

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The Alumni

Andrew Welsh has for the past month been very sick at his home in Denver. He is recovering rapidly and will soon return to Mitchell, Nebraska, where he has charge of the North Grade project for the Government.

W. W. Lloyd is superintendent of the mill for the Bonanza Vanadium Mining Company at Santa Fe, New Mexico.

Walter Furlanite is recovering from a broken arm, received some time ago in an automobile, near Golden.

Walter A. Funk has moved from Central City, Colorado, to Hondo Falls, Idaho, where he will still follow general mining engineering work.

H. J. Walton has left the employ of the International Smelting Company, of Tooele, Utah, and is now superintendent of construction for the Murco V alley Mines Company, Walker, Nevada. The latter company is building a thousand-ton smeltery, on the International Smelting Company, of Tooele, Utah, and is now superintendent of construction for the Mesa Valley Mines Company, Walker, Nevada. The latter company is building a thousand-ton smeltery, on

Andrew Weiss has for the past month been operating a lease. He is in the employ of the American Smelting Company.

Walter A. Funk has moved from Central City, Colorado, to Hondo Falls, Idaho, where he will still follow general mining engineering work.

Richard L. Grider is now assayer and supervisor of the Virginia Mines Company, Indian Lake, Nevada.

Stephen L. Goodale is professor of Metallurgy and Ore Dressing at the University of California.

Cutter, New Mexico.

The Alumni Meeting

The Executive Committee of the Alumni Association met in the office of F. S. Titcomb on December 12. The officers present were E. S. Titcomb, president; Arthur Dodson, secretary; F. C. Hitchcock, treasurer; J. W. Johnson and T. P. Ellis, members. The meeting was called to hear the report of the committee on the Capability Exchange, the last meeting, held on November 6, and take action thereon, to consider also the appointment of the Alumni member of the Board of Trustees of the Colorado School of Mines.

The report of the committee on the Capability Exchange as submitted by Chairman, Charles W. Cook, has been approved by the Executive Committee, as follows:

Statement and Agreement

The aim of the Capability Exchange is to keep every member of the Alumni, who is in good standing, in as good a position as his capabilities and experience will enable him to hold satisfactorily, to place under-graduates in need of work and experience in profitable positions during vacation periods and make employers in obtaining competent men.

Only graduates in good standing (that is, with a clear registration and record) and worthy undergraduates are eligible to consideration by the Capability Exchange.

This Exchange is not run to make money, but may be necessary expenses in connection with the proper management of the Exchange. The men benefited should help meet these expenses.

The fees charged for placing men in positions through the Capability Exchange will be as follows: Two (2) per cent. of one full month's salary for positions paying $50 or less per month; fifteen (15) per cent. for positions paying over $50 and not exceeding $75; twenty (20) per cent. for positions paying over $75 and not exceeding $100, and twenty-five (25) per cent. for positions paying over $100 per month. If a man is already employed at a regular salary and in a fairly permanent position and the Exchange obtains a better paying position for him, or he is given an increase of pay in his present position in order to hold him when offered a better position through the Exchange, then the fee will be sixty (60) per cent. of the monthly increase of pay received, unless such fee would exceed the regular fee for positions in above, in which case the regular fee will apply.

If living expenses, board or quarters are furnished in connection with the position, the prevailing rates for same are to be deducted in the rate of salary in figuring the commission. These fees are due upon acceptance of the position and must be paid to the Executive Committee, as soon as the position is accepted and the Exchange obtains a better paying position for him, or he is given an increase of pay in his regular salary and in a fairly permanent position.

Excellent salaries of $30.00 per month. If a man is already employed at a regular salary and in a fairly permanent position and the Exchange obtains a better paying position for him, or he is given an increase of pay in his present position in order to hold him when offered a better position through the Exchange, then the fee will be sixty (60) per cent. of the monthly increase of pay received, unless such fee would exceed the regular fee for positions in above, in which case the regular fee will apply.

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that in no case shall the total of these fees exceed the regular fee for positions.

All communications from the managers of the Exchange MUST be promptly answered.

This is absolutely necessary to the Exchange to accomplish good results. In some cases positions must be filled very quickly to prevent men from other agencies getting them. Even if the applicant does not care to consider the position, the manager must be informed immediately, that the next on the list may be notified.

It is difficult to write a telegram on behalf of an applicant, costing over fifty cents, the applicant will be expected to pay for the same in addition to the regular fee.

When a permanent position is secured for an applicant, if he leaves it of his own accord, or loses it through negligence or misfeasance, in every case the full fee will be charged.

Under no circumstances does the Exchange guarantee successful employment for anyone. The Exchange will, however, use, in its best endeavors to secure positions, and is willing to list the name of a graduate for examination and, if accepted, will be charged.

It is understood, when an applicant is put in communication with a potential employer that it is a confidential transaction, and he agrees not to divulge anything, in any manner, in connection with the same.

I have read the above agreement carefully and understand and accept the conditions as stated.

Communications.

Kyshtim, Russia, Oct. 11, 1910.

Mr. F. S. Titsworth,

Mr. Horace H. Emrich,

Mr. R. F. Stoughton,

Mr. F. T. Titsworth,

Mr. W. H. Emrich,

Mr. E. R. Emrich,

Mr. H. W. Emrich,

Mr. C. H. Emrich,

Mr. H. H. Emrich,

Mr. H. H. Emrich,

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Engineering and Mining Journal, Nov. 28, 1910, p. 1067.

This is a continuation of the article appearing in the issue of Nov. 5. The following methods are given: Pillar carrying system at the Canamin-Doluth mine; back stoping on waste at the Elma mine; and the pyramidal system of stopping at the Veta Grande mines. The author gives the requirements for the application of each with the advantages and disadvantages.

Tin Sticking in Tasmania, by Edward Edwards.

Mines and Minerals, Dec., 1910, p. 599. Describes the methods of sampling and analyzing the tin deposits of northeastern Tasmania.

Metalurgical and Assaying and Chemistry.

Note on Reduction Plants for Gold and Silver Ores, by A. A. Drainy.


An article in which the author discusses the new lead smelter, recently completed by the Webb City Smelting Co.

Notes on Electrostatic Separation and Ore Dressing, by P. K. McGreggor.


Describes the Hoff process in use at the American Zinc Ore Separating Co.'s plant, Plattsburg, Mo., working on custom ores and the United States Smelting, Refining and Mining Co.'s plant at Midvale, Utah.

New Lead Smelters for Webb City, Mo., by Otto Ruhl.


The Outlook for Hydrometallurgy of Copper, by William H. Greenawalt.

Engineering and Mining Journal, Nov. 11, 1910, p. 964.

An article in which the author states that the Chino mill is essentially a slime ing apparatus, the value of which is beginning to be realized by mill men.

The Problem of Fine Grinding in Tube Mills, by H. W. Harding.

Engineering and Mining Journal, Nov. 26, 1910, p. 967.

The author states that tube mills require twice the calculated theoretical horsepower, and are all inefficient.

Hydrometallurgy of Cobalt Ores.


This article first gives the early history of the district. Following this the milling and sorting of the ore is taken up, with a particular division into two classes—smelting and copper. The latter amounting to 75 per cent. The silver or other ore is treated in lead with the silver or copper being carried by the slimes. Following the lead process which are given: Buffalo mill, Ontario Central mill, Colonial Mill, Conlips mill, King Edward mill, McKee-Durham mill, Nightingale mill, Northern Cobalt mill, O'Brien mill, Nova Scotia mill, Silver Cliff mill, Temiskaming mill, and Tretheway mill.

Evolution of the American Copper Converting Process, by Charles G. Christiansen.


This article briefly describes the general process of converting copper, and the vertical or “Parrey,” the square or “Buckhorns,” and the louver or “Bolts” types of converters. A detailed description is given of a louver type of converter known as the “Babcock.”

Electrothermic Separation and Ore Dressing, by P. K. McGreggor.


An article in which the author discusses the new lead smelter, recently completed by the Webb City Smelting Co.

Notes on Concentration of Tin, by H. B. Hatter.


Notes on the practice in vogue at the plant of the South Crofty mine, Cornwall, for treating a complex cassiterite, wolfram, arsenic, and copper ore. Also on a plant erected in South Africa to treat a very fine grained cassiterite ore.

Notes on Reduction Plants for Gold and Silver Ores, by A. A. Drainy.


An article in which the author discusses the stamp mill and tube mill or a combination of both systems. Milling systems in general are worked to better advantage by changing to the longwall system.

Milling Methods Employed at Cananea, Mexico, by Morris J. Eising.

Mining and Mining, Nov. 12, 1910, p. 964.

The author states that many mines in this country, working under heavy cover and now using the longwall system, could be worked to better advantage by changing to the longwall system.


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Electro Amalgamation, by Elmer E. Carey.

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A Successful Treatment of Concentrates by Electro Amalgamation, by R. E. Tremoureux.

Notes on Battery Practice on the Rand, by R. G. Casey, Jr.

The author states that a satisfactory extraction can be secured by first regrounding the concentrates and then mixing them with the tailings. This scheme is cheaper than sifting all the tails from the battery direct, without previous concentration.

An Australian Electrolytic Copper Re-covery, by B. G. Oakey, Jr.


Electro Amalgamation gives a complete description of the plant located at Port Kembla, New South Wales.

When our present powerhouse was completed, the old engine, jackshaft, pulleys, cables, and generators were moved from the present location of "Engineering Hall" where they had been installed in 1884 and were given a new place in one end of the new building. This equipment was set up in the same relative position that it had occupied in its original location and comprised a fifty-horsepower Bessemer highspeed engine, a thirty-kilowatt, one hundred and twenty-five cycle, single-phase General Electric lighting alternator, a fifteen-kilowatt direct current machine, and a two and one-half kilowatt Dalian bipolar generator.

When the Testing Plant was projected the designers planned a motor installation of two hundred and seventy horsepower. It was thought that a possible maximum of one hundred and fifty horsepower might be used at one time and the power house equipment was selected on that basis. As the generator capacity in kilowatts should be approximately equal to the motor output in horsepower, it was necessary to provide for one hundred and fifty kilowatts.

After the engines and generators had been put in place, together with an exhaust steam feed water heater and two boiler feed pumps the engine room was less than half full. Many persons thought we would never be able to fill up the engine room, and for a year or two it was used as a museum and mining laboratory. The five-panel black enameled switchboard, built by the Western Electric Company, controls the output of the turbines.