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A Modern MILL for Your LABORATORY

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**COLORADO SCHOOL OF MINES MAGAZINE**

Published every month in the year, at Golden, Colo., by the Alumni Association of the Colorado School of Mines.

C. ERB WUENSCHE, '14, EDITOR.

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THE ALUMNI ASSOCIATION OF THE COLORADO SCHOOL OF MINES HAS A CAPABILITY EXCHANGE which renders efficient Employment Service; if you want a man or a new position wire them.
What Is Air?

BEFORE 1804 every chemist thought he knew what air is, "a mechanical mixture of moisture, nitrogen and oxygen, with traces of hydrogen and carbon dioxide," he would explain. There was so much oxygen and nitrogen in a given sample that he simply determined the amount of oxygen present and assumed the rest to be nitrogen.

One Great English Chemist, Lord Rayleigh, found that the nitrogen obtained from the air was never so pure as that obtained from some compound like ammonia. What was the "impurity?" In co-operation with another prominent chemist, Sir William Ramsay, it was discovered in an entirely new gas — "argon." Later came the discovery of other rare gases in the atmosphere. The air we breathe contains about a dozen gases and gaseous compounds.

This study of the air is an example of research in pure science. Rayleigh and Ramsay had no practical end in view—merely the discovery of new facts.

A few years ago the Research Laboratories of the General Electric Company began to study the destruction of filaments in exhausted lamps in order to ascertain how this happened. It was a purely scientific undertaking. It was found that the filament evaporated—boiled away, like so much water.

Pressure will check boiling or evaporation. If the pressure within a boiler is very high, it will take more heat than ordinarily to boil the water. Would a gas under pressure prevent filaments from boiling away? If so, what gas? It must be a gas that will not condense. Nitrogen is a useful gas in this case. It does form a few compounds, however. Better still is argon. It forms no compounds at all.

Thus the modern, efficient, gas-filled lamp appeared, and so argon, which seemed the most useless gas in the world, found a practical application. Discover new facts and their practical application will take care of itself.

And the discovery of new facts is the primary purpose of the research laboratories of the General Electric Company.

Sometimes years must elapse before the practical application of a discovery becomes apparent, as in the case of argon; sometimes a practical application follows from the mere answering of a "scientific" question, as in the case of a gas-filled lamp. But no substantial progress can be made unless research is conducted for the purpose of discovering new facts.

The Future of the Petroleum Industry in the United States

By Francis M. Van Tuyll.

Introduction.

Few people realize the magnitude of the oil industry in the United States, and that this industry is destined to undergo a revolution within the next few years if we are to maintain the world leadership in this field. But in several others of the products of the industry, including the production, transportation, refining, and distribution of petroleum and its products, is the third largest in this country today. Yet we are faced with the undeniable fact that our petroleum resources are far from being inexhaustible. Indeed, several technical men of high standing have stated that the peak of production has already been reached. It is doubted by many if this is true. But all who have made a careful study of the subject agree that our petroleum resources are not sufficient to completely meet the rapidly increasing demand of the country upon the industry for more than a short period of years. In the year book of the United States Bureau of Mines for 1916, Mr. Van H. Manning makes the following statements (pages 116 and 117), regarding our petroleum reserve:

"At our present rate of consumption our estimated supplies are sufficient to meet our present needs for a comparatively short period, conservatively estimated to be from 25 to 30 years, taking no account of the increased demand for petroleum and its products. This estimate not only includes the oil fields already known and developed, but makes liberal allowances for undiscovered fields in prospective oil provinces. It should not be thought that our petroleum supply at the end of this period will be cut off abruptly, for the wells will continue to produce through a declining output for many years."

"This country is producing about two-thirds of the world's output of crude petroleum, and has produced approximately 2,750,000,000 barrels (estimated of 1916) since the drilling of the first well by Col. Drake in 1859. Our future supply from both proven and prospective oil fields, based on geological possibilities, is estimated to be approximately 7,400,000,000 barrels, which will last us only about 25 years at our present rate of consumption."

It will be noted that this estimate does not take into consideration the increase in production from year to year, induced by extensive drilling campaigns following in the wake of greater demands upon the industry and increased prices for petroleum and its products.

Bearing in mind that the decline in yield per well per day is comparatively rapid, and that the life of a single pool which has been thoroughly developed is usually not more than from ten to thirty years, the peak of production generally being reached soon after discovery, the amount of development work required in order to maintain even a uniform output will be appreciated. In this connection it is interesting to observe that there are approximately two hundred fifty thousand producing oil wells in the United States today, but that the average production per well per day is only four and one-half barrels.

The annual increase in production, therefore, has been accomplished only by the most extensive campaign of wildcat drilling the world has ever known. This has resulted in the discovery of large and important new pools yearly. It is doubtful if the future drilling campaign will be attended with the same degree of success, for the percentage of large undiscovered pools in the oil territory is yearly becoming less, and the attendant chances of striking oil in exploratory drilling consequently fewer.

A few years ago the situation which confronts the oil industry was viewed with considerable concern by those familiar with the circumstances, but the recent discovery of extensive deposits of oil shale at several localities in the country, capable of yielding millions more oil than ever has been or ever will be recovered from wells the world over, lends a more optimistic aspect to the problem. However, the difficulties which the oil industry will encounter in adapting itself to the utilization of oil shale are considerable, and the change will undoubtedly be deferred by the larger oil companies as long as possible. Let us, therefore, consider briefly the present status of the various oil fields and the possible methods of prolonging the life of our petroleum resources.
In 1908, when 33,686,000 barrels of oil were produced. It has been declining since 1904. For which year it was 24,689,377 barrels. There is an important discovery of the rich pools at Cretaceous and Tertiary strata. These tend to give a large flush production but decline rapidly. The oil is from the latest pools of low grade, ranging from 15° to 23° Béaume, and much of it contains considerable hydrocarbon sulphur. The poorer grade product is used chiefly as fuel oil.

The Gulf Coast Field.

This includes a large number of small, detached oil pools in southeastern Texas and southern Louisiana, which differ markedly from all other American occurrences in that the areas associated with salt domes in Cretaceous and Tertiary strata. These tend to give a large flush production but decline rapidly. The oil is from the latest pools of low grade, ranging from 15° to 23° Béaume, and much of it contains considerable hydrocarbon sulphur. The poorer grade product is used chiefly as fuel oil.

The Rocky Mountain Field.

This field includes producing territory in Wyoming, Colorado, and Montana, and produces oil territory in Utah and New Mexico. The petroleum is derived from Carboniferous and Cretaceous formations, and occurs in anticlines, domes, terraces, and lenticular sands.

The Illinois Field.

This field includes the important pools in the northeastern portion of the state and a number of small, scattered pools in the central and western portions. Oil was discovered in important quantities in 1908, when 33,986,996 barrels of oil were produced. It has been declining ever since, and, in 1918, amounted to 13,357,974 barrels.

River, and Sabine Parishes. Most of the pools yield a high gravity oil (up to 43° Béaume), but some give low grade asphaltic and generally a mixed asphaltic and paraffin type of oil. The discovery of important additional pools in southern Louisiana is anticipated as a result of the present activities, but the amount put out of production is not large.

The California Field.

California has produced more oil than any other single state, and is the most important producing districts: (1) the San Joaquin and (2) the Coastal Division, both in the southern half of the state.

The productive strata range in age from the upper Cretaceous to the Quaternary, but the source of most of the commercial production is the Tertiary beds. Oil is found in almost every known variety of structure in this field.

Practically all the oil is low grade and asphaltic, but small quantities of higher grade paraffin oil are found in a few pools. The range in gravity is from 13° to 35° Béaume. The maximum annual production was probably reached in 1914, when it amounted to 109,000,000 barrels. Most of the productive areas are believed to have been developed, although a few new fields will doubtless be discovered.

Summarizing the conditions in the several fields, one of the most important is that we have discovered in southeastern Texas, three (North Louisiana, North Texas, and Rocky Mountain) are still approaching their peaks, which will probably be reached in all cases within the next ten years.

Manning expresses himself regarding the situation as follows: We have done a great deal, but there is much left to be done. We have used the most valuable parts of the oil for purposes to which the cheapest should have been devoted. We have lacked the knowledge of how to properly produce one needed product without overproducing products for which we have little need. We have used the most valuable parts of the oil for purposes to which the cheapest should have been devoted. For many years the gasoline fractions were practically the only products of the kerosene with the development of the internal combustion engine the kero-
Possible Methods of Prolonging the Life of the Industry.

Up to the present effective steps have been taken by the states or the federal government to prolong the life of the oil fields, although this could be done without seriously affecting the industry. However, several possible methods of deferring the time of exhaustion of our oil supply have been proposed recently.

These are as follows:
1. By the discovery of new domestic fields.
2. By the elimination of waste in production.
3. By the greater extraction of values.
4. By the development of foreign sources of supply.
5. By the development of the shale oil industry.
6. By the development of substitutes.

To this list the writer would add:
7. By the intelligent supervision of wildcatting.
8. By the testing of deeper sands in known oil territory.

Let us consider briefly the possible application of each of these suggestions.

The Discovery of New Domestic Oil Fields.

As has been previously stated the present great campaign of exploratory drilling results in the discovery of several new oil pools annually, but the proportion of new discoveries in the future will undoubtedly become less as the untapped territory becomes smaller. It is not probable, therefore, that this measure will be effective for many years.

The Elimination of Waste in Production.

Gilbert and Pogue state that "improvements in value extraction from the petroleaum output will come through the extension and further improvement of 'cracking' methods of distillation; through improvements in the design and efficiency of the internal combustion engine; through the widening use of the Diesel type of engine, thus gradually deflecting fuel oil from its illegitimate role of a steam raising undercooler to coal; and through careful planning for building up a great oil by-products industry to give multiplications of value to the portion of oil left after the energy, fuel, and lubricating values are extracted."

The Development of Foreign Sources of Supply.

The exhaustion of our petroleum supply will undoubtedly be deferred for a number of years by the development of foreign fields, and the importation of large quantities of oil and its products. Very large undeveloped reserves lie in the republics of Mexico, Central America, and South America. Exploration work is now being done by geologists in these countries, and we shall undoubtedly learn something more definite regarding their oil possibilities in the near future. Our imports from Mexico at the present time supply almost entirely of our present needs.

Considerable activity is now being shown in wildcat areas in northwestern Canada, and important fields are predicted for that country, but it is doubtful if Canada will ever be able to do more than supply her own domestic requirements.

The Development of the Shale Oil Industry.

Within the past few years large areas of oil shale have been discovered and explored. Some of these are known oil territory, and in several central and eastern states. It is estimated that these oil shales are capable of furnishing sufficient oil to supply the country for several hundred years. The largest and richest single deposit is in the Colorado and adjacent portions of Utah and Wyoming. Much of this shale is said to be capable of yielding 500,000 tons of coal and 8,000,000 tons of ammonium sulphate per ton. The Colorado shales alone underlie approximately 1,400 square miles with an average aggregate thickness of 53 feet, and are estimated to contain 100,000,000,000 cubic feet of natural gas, and 300,000,000 tons of ammonium sulphate.

The utilization of these bodies of oil shale, however, has been retarded by the difficulties encountered in the development of a satisfactory process of extraction of the oil, and also by the large initial cost of building up a large scale of industry. With the increasing price of oil and its products, and the accompanying increase in prices of oil and its products, shall render the business

The Development of Substitutes.

There are several possible substitutes for gasoline for use in the internal combustion engine. The most promising of these are benzol, a product of coke ovens, and alcohol. Inasmuch as neither of these will probably be able to compete seriously with gasoline in the future, the short-range possibilities of their cost and other difficulties, they do not deserve serious consideration at the present time.

The Intelligent Supervision of Wildcatting.

An enormous amount of money and much labor is wasted annually by would-be oil operators who drill for oil in territory holding out not the slightest chances for success. In most cases these operators are not guided by geological advice of any kind. In others, the instructions of pseudo-geologists, who would not recognize an oil structure if they should, by any chance come upon one, are followed. There can be no doubt that additional new oil pools could be opened up each year, and much money saved to innocent investors if some sort of intelligent supervision were exercised by the states in which operations are carried on.

The Testing of Deeper Sands.

Experience has shown that some oil structures possess more than one productive horizon, and it is believed that deeper drilling in many oil districts will reveal the presence of large quantities of oil below the present "pay sands." The recent successful experiments in deeper drilling in the Panhandle, Howard, Louisiana, and the Texas, and the Rocky Mountain fields, lend strong support to the advisability of this practice at those localities where the underlying formations are not known to be unfavorable.

In conclusion, it is believed that the present output will be maintained if not exceeded during the next few years, but beyond this new oil pools and the drilling to deeper sands in known oil structures in the Mid-Continent, North Louisiana, North Texas, and Rocky Mountain fields will then set in. This will result in a steady increase in prices of oil and its products, and will not only stimulate the shale oil industry and bring about greater activities in foreign countries and cause larger importations, but will also lead to more efficient methods of production and refining in this country under more intelligent supervision. All these factors working together will serve to prolong the life of the industry.
A REPRIMAND.

Denver, Colo., December 13, 1920.

The Editor:

I was much interested in the September, '20, issue of the Alumni Magazine. I read with great interest the letter from Mr. Harold C. Price, class of '13; also the limited remarks by the editor. Mr. Price's letter states clearly what I think is the essential information that should be incorporated in a Magazine of the Colorado School of Mines.

I believe that the present editor of the Magazine should be both complemented and criticized for his work—complimented for the general arrangement, appearance and the untiring effort he has put forth on limited means, to make the Magazine appear to the Alumni in general, as well as the advertisers in mining journals, but criticized for his apparent neglect to answer just such letters as Mr. Price's, within a reasonable time. I do not like to criticize until I have given the editor a chance to explain his position, for I feel that under the conditions there might be many influences which are being brought to bear upon him that might be shaping his policy. I, however, dislike to believe that such is the case.

I have awaited each issue of the Magazine to see if Mr. Price's letter would be answered. Three months have elapsed and still no answer has been made. Can it be that, as alumni, have to go to the technical? I do not want to get to the point: Is it not possible to have had this money expended at our experimental plant as so to determine some method of treatment?

In the September, '20, issue of the Colorado School of Mines Magazine, there was published a letter from Harold C. Price, class of '13, remonstrating the Magazine for its failure to publish any statement of facts relative to the above affairs. Since, he inferred, makes it appear that the Magazine was to refrain from entering into a discussion of the administrative acts of the School. In his instructions that the general policy of the Magazine was to refrain from entering into a discussion of the administrative acts of the School. This policy was adopted in order to prevent further ill-feeling between the Anti-Alderson and Pro-Alderson factions of the Alumni, which resulted from the controversies relative to the reappointment of former President Victor C. Alderson, in the summer of 1917. However, the time has arrived when it becomes necessary for the Alumni Association of the Colorado School of Mines to awaken to its duty, to stand up and fight for its Alma Mater's good name, or like men acknowledge her guilt and make restitution. To do this the Association must ascertain the absolute facts relative to conditions prevailing at Golden in order to refute or acknowledge the charges made by the American Association of Professors and others. Note, I say absolute facts. By that I mean that it is time to stop compromising with the truth because of political expediencies. It should be made by real men, free from pre-judice and unafraid to speak the profound truth regardless of consequences—men whose ideals are dominated by the conviction "that the truth has no enemies save the ignorant or the corrupt."

The latter part of September I prevailed upon the President of the Alumni Association, Mr. Will H. Coghill, to call a meeting of the Alumni Association, at which time I would lay before the members the conditions prevailing at Golden, and thus invoke a discussion as to what would be the most expedient manner of remediying the political defects at the Colorado School of Mines and replying to the editorial charges above mentioned. Mr. Coghill advised me that he was at this time because he felt that the Alumni Association took so little interest and such a meeting would be of no avail. He intimated that it was better not to have a meeting but rather leave things take their natural course because there was sufficient political influence among the mining men in Denver to place the School of Mines under the regency of the University of Colorado. To have a meeting at this time he felt might hinder this legislation because there might be some opposition, and I pointed out that this was all the more reason why it was imperative that we should have a meeting. For me to permit this agitation to go on without doing anything relative to it would certainly lay me liable to severe criticism from the hands of the alumni subscribers of the Colorado School of Mines Magazine. They would write in and say that we were so desirai—i.e., I think best informed that this was an important meeting at which time I would lay before the members of the Alumni Association a body endorsing the movement. We were unable to reach an agreement, and I therefore told him that I would make a request amongst the members of Denver...
for a meeting and thus over-rule his presidential authority. Mr. Alderson was absent in Europe when this took place, and hence the blame must not be laid upon his shoulders.

Before Mr. Skinner criticizes the work done by the Chemical Experimental Plant, he had better first get matters straightened by the Board of Trustees. It would be wise for him to apply the methods of research work that is really worth while, instead of attempting to do a cooperative basis of research work that is really worth while, that is doing it for a commercial organization, that is, by ‘factory methods’.

The head of the Hall of Engineering and the contrast in facilities available at the testing plant, can readily appreciate why the Bureau of Mines decided to use the Hall of Engineering for research work that is really worth while above is that done by a commercial organization, that is, by ‘factory methods’.

Mr. Keeney expressed himself to the effect that he has little regard for the work done by the U. S. Bureau of Mines. In short, his course of action was that the Hall of Engineering could be more efficiently utilized for the growing needs of the School. A day or two before this letter was written, a delegation of the Board of Trustees called on the President of the U. S. Bureau of Mines, and went through the building, ostensibly for the purpose of seeing what was being done. No one doubts the fact that perhaps the Board of Trustees felt that the Hall of Engineering was better utilized than the U. S. Bureau of Mines.

No one doubts the fact that perhaps the Board of Trustees felt that the Hall of Engineering was better utilized than the U. S. Bureau of Mines. It may be noted that one of the first and best pieces of apparatus ever run in this country was the Caron Process, and many others.

The Bureau has its new quarters at that institution at Reno. In addition it is a sin against the public to waste so much time and money in the hope of doing something that can be accomplished by a commercial organization.

Let us now briefly review the Report of the Board of Trustees, showing them, in a word, its traditions. The Board of Trustees discussed the matter with the officials of the U. S. Bureau of Mines. It was a conclusion arrived at by the Board of Trustees, which had the authority of the Board of Trustees to act, and no open-minded person who knows the facts is justified in attacking the conduct of the School.

There were only six or seven months left of the term. Mr. Robert M. Keeney, Director of the School, was away for several months at the time engaged in private consulting work while this work was going on. The Board of Trustees was justified in waiting until the results of the work done by the U. S. Bureau of Mines could be obtained and compared. Mr. Keeney, Director of the School of Mines Experimental Plant, was away for several months at the time engaged in private consulting work while this work was going on. Mr. Skinner decided to outline the work without the inconvenience of attempting to cooperate with an absent director. Mr. Keeney has been deprived of its services because of the Board of Trustees' action against the School of Mines Experimental Plant and the Board of Trustees' action against the School of Mines Experimental Plant.

Mr. Robert M. Keeney, Director of the School of Mines, has been deprived of its services because of the Board of Trustees' action against the School of Mines Experimental Plant and the Board of Trustees' action against the School of Mines Experimental Plant.

The School of Mines Experimental Plant and the Board of Trustees' action against the School of Mines Experimental Plant.

President Alderson was absent in Europe while this took place, and hence the blame must not be laid upon his shoulders.

Mr. Keeney's contract with the School, he has offered 223.000 for the work he does, is out of all proportion to that paid to the members of the Faculty.

The U. S. Bureau of Mines was immediately offered the facilities of two other institutions should be sufficient evidence to show that their work is of an entirely different order than the work of the U. S. Bureau of Mines.

No one doubts the fact that perhaps some of the work of the Bureau of Mines might be done more efficiently. But who can place research work on a cooperative basis of research work that is really worth while, that is done by a commercial organization, that is, by ‘factory methods’.

The purpose of the Bureau is to investigate scientific principles and put the information obtained in such shape that it can be used by the ‘practical man’ as an outcome of this, they have discovered several principles which have been the basis of commercial operations, to wit: their contributions to the radium industry, the uses of mesothorium, radium, the Caron Process, and many others.

The success of the U. S. Bureau of Mines is so generally admitted that this point needs no further comment here.

To what extent his well to call attention to the animosity entertauned by the officials of the U. S. Bureau of Mines toward the U. S. Bureau of Mines. According to the agreement entered into between the School of Mines and the U. S. Bureau of Mines, no research work was to be done on a cooperative basis between the staff of the Bureau and the faculty of the School. This was impractical, and of course the Board of Trustees felt that joint research between staffs of the School of Mines and the U. S. Bureau of Mines was away for several months at the time engaged in private consulting work while this work was going on. Mr. Keeney, Director of the School of Mines Experimental Plant, was away for several months at the time engaged in private consulting work while this work was going on. Mr. Skinner decided to outline the work without the inconvenience of attempting to cooperate with an absent director. Mr. Keeney has been deprived of its services because of the Board of Trustees' action against the School of Mines Experimental Plant and the Board of Trustees' action against the School of Mines Experimental Plant.

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No one doubts the fact that perhaps some of the work of the Bureau of Mines might be done more efficiently. But who can place research work on a cooperative basis of research work that is really worth while, that is done by a commercial organization, that is, by ‘factory methods’.
Professors. This Association occupies a position in the educational world analogous to that of the American Institute of Mining and Metallurgical Engineers in the mining world. Its membership numbers 3,500. In October 708 new members were elected to membership. The Association is the prominent organization of practically every institution of the higher learning in the United States. In order to be eligible for membership one must have taught at least five years and have attained a professorial rank. The Association endeavors to promote, foster, and perpetuate the highest traditions of the science of education. One must be elected by a few of its monthly bulletins to appreciate the high standard of the organization. This investigation was made for the purpose of determining the defects in the administration of the Colorado School of Mines whereby the school is constantly in turmoil, which is not conducive to rendering its best service to education.

It will also be remembered that this investigation was made at the request of three members of the Association who are members also of the faculty of the Colorado School of Mines, who were dismissed unjustly without sufficient cause or warning [Dr. H. B. Patton, for twenty-four years Professor of Geology-Mineralogy at the University of Chicago, and for ten years Professor of Mathematics, and the third, Dr. Herman Fleck, head of the chemistry department, who had resigned his position in 1906, having been professor for thirteen years. These members have the right to appeal to the Association for investigation. This investigation was made at the request of the most prominent members in the teaching profession, and it was not directed at any individual, as some, improperly informed, have supposed.

The following are the charges made:

1. Interference of members of the Board of Trustees in Matters of Discipline.

2. Cause of the Dismissal of President Parmelee.

3. Dismissal of teachers without charges, hearing or adequate warning.

4. Inventing of Standards of Scholarship by President Parmelee.

5. Exercise of improper pressure by President Alderson to cause teachers to support his policies or further his personal interests.

The summary of the Report of the American Association of University Professors reads as follows:

The above evidence leads the investigating committee to conclude that the first four of the five charges made by the complainants are sustained, the evidence as to the remaining charge being inconclusive.

1. The evidence shows definitely, with respect to President Alderson, that he is mainly responsible for the dismissal of strong teachers of professorial rank and of long service from the Colorado School of Mines without charges, hearing, or adequate warning; that he lowered the standards of scholarship of the institution by compelling members of the faculty to change grades of students, especially of his own pupils; that while in most cases he was justified, in general, he repeatedly violated the essential principles of sound educational administration and of professional discipline; that some of the Trustees, and not the Board of Trustees as a whole, were responsible for the dismissal of President Alderson.

2. The evidence shows that individual members of the Board of Trustees who composed the faculty of the Board in its responsibility for the dismissal of these men, in an attempt to reconcile the charges, in addition to inviting the condemnation of the educational world. It is inconceivable how the board should be permitted to make dismissals of teachers by such prominent men as those whose signatures are attached to the above report. M. F. Libby is one of America's highest authorities on philosophy. H. S. Alden is professor of law at the University of Colorado. Herbert S. Hadley is professor of law at the same institution. He is the well known ex-governor of the State of Missouri, who is present one of Colorado's most influential citizens. He is also noted for his vigorous attacks against the trusts, such as the Standard Oil and the Harvester Co.; a man of irreproachable integrity.

3. Mr. Rubey and Mr. Smith are the chief offenders. They clearly indicate the necessity of determining the defects in the administration of the Colorado School of Mines without charges, hearing, or adequate warning. The Trustees of the Colorado School of Mines do not seem to realize the importance of the evidence in this investigation, as the interference of the Trustees in the routine affairs of educational problems of the institution. To the sworn and detailed statements of the evidence in the School of Mines the Board opposes an insipid and evasive reply, which in effect admits the gravest of the charges as if they were of no serious importance. The Trustees' disregard of the facts and responsibilities of the charge. The Board is not competent to select and to support a President who has the proper educational ideals. Respectfully submitted,

M. F. LIBBY (Chairman)
HERBERT S. HADLEY
J. M. COULTER
H. O. HOPKINSON
A. A. POPPE
Committee

Before this report was published all the evidence contained in it was submitted to the Board of Trustees in order to give them an opportunity to refute the testimonies. Their replies are included in this report. They clearly indicate the self-exalted and narrow viewpoint of the Board. Their attitude was like that of a super-egotist, who considers himself beyond reproach, and sees in the very idea of any one being so presumptuous as to even entertain a critical thought about him. Because of this attitude they have been unable to detect the correctives of the charges, in addition to inviting the condemnation of the educational world.

Reasonable security in tenure of office must be assured to the college teacher. The interests of the country require that men who have long and faithful service and who are capable and competent should not be dismissed at the whim of a tyrannical president. The interests of the students require that the college teacher be independent enough to stand for what is right in discipline and in standards of scholarship, as well as in athletic control.

The public has recently reported the following resolution passed by the Board of the Colorado School of Mines:

"Resolved, that loyalty to the institution of its ideals and to those connected with it, will be considered of the utmost importance, and that, even though ability and attention to duties are marked, any member of the faculty or other employee who attempts to undermine, admittedly to advance personal interests at the expense of his colleagues or the school will not be retained."

This declaration of purpose requires no comment; no one acquainted with the previous methods of the Board can have any doubt as to the future course of action under the new resolution. He has shown foresight.

The conditions which brought in this investigation, unless remedied without delay, will prove most disastrous to the future of the school. To attract a large number of superior students, an institution must protect them and to retain teachers of superior qualifications, the Institute must present such a disparaging report if the facts did not justify it. I wish to add the following comments relevant to this entire matter.

Charge No. 1. This is absolutely true. Those of us who as students participated in any of the "strikes" at Golden realize the tendency of certain trustees to cater to the good-will of the students. In this respect trustees H. M. Rubey and James T. Smith are the chief offenders.

Charge No. 2. President Parmelee should have been unwise in his attitude and not dismissed to settle the matter to the satisfaction of the striking students. I personally believe that President Parmelee chose an inopportune time to enforce discipline. He certainly never knew of the tradition of "wrinkling" and of the tendency of the students to indulge in rowdism on student festival days. The necessity of the suddenness of the action to that of utmost severity was too unexpected to be a just action. The students should have been forewarned and disciplined gradually enforced. Perhaps President Parmelee is not to be entirely blamed for this apparent lack of tact because he was a new President and hence not thoroughly acquainted with these traditions. He was acting upon the advice of
Professors. This Association occupies a position in the educational world analogous to that of the American Institute of Mining and Metallurgical Engineers in the mining world. Its membership numbers 3,500. In October 708 new members were elected. The first members included the prominent professors of practically every institution of the higher learning in the United States. In order to be eligible for membership, the candidate must have taught at least five years and have attained a professorial rank. The Association endeavors to protect, foster and perpetuate the highest traditions of the science of education. One of its tasks is to see to it that every section of the country has members in the Association. In this way it succeeds in maintaining a high standard of the organization. This investigation was made for the purpose of determining the defects in the administration of the Colorado School of Mines whereby the school is constantly in turmoil, which is not conducive to rendering its best service to education.

It will also be remembered that this investigation was made at the request of three members of the Association who were members also of the faculty of the Colorado School of Mines, whom were dismissed unjustly without sufficient cause or warning [Dr. H. B. Patton, for twenty-four years Professor of Geology-Minerals, for ten years Professor of Mathematics], and the third, Dr. Herman Fleck, head of the chemistry department, who had resigned his position in 1916, after having been professor for thirteen years. These members have the right to appeal to the Association for investigation. This investigation was made by some of the most prominent members of the Association in the United States, and it was not directed at any individual, as some, improperly informed, contented, only insofar as these individuals are responsible for the defects in the administration.**

The following are the charges made:

1. Interference of members of the Board of Trustees in Matters of Discipline.
2. Cause of the Dismissal of Professor Parmelee.

** Those who question the legal right of the Board of Trustees in Matters of Discipline.

The Association of University Professors regards as its highest duty to protect, foster and perpetuate the highest traditions of the science of education. It will also be remembered that this investigation was made at the request of three members of the Association who were members also of the faculty of the Colorado School of Mines, whom were dismissed unjustly without sufficient cause or warning [Dr. H. B. Patton, for twenty-four years Professor of Geology-Minerals, for ten years Professor of Mathematics], and the third, Dr. Herman Fleck, head of the chemistry department, who had resigned his position in 1916, after having been professor for thirteen years. These members have the right to appeal to the Association for investigation. This investigation was made by some of the most prominent members of the Association in the United States, and it was not directed at any individual, as some, improperly informed, contented, only insofar as these individuals are responsible for the defects in the administration.**

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of faculty advisers, who betrayed their confidence in that they stated that such disorderly conduct as had occurred on this occasion had never before been known. This is lamentable, because it is a known fact that concomitant with this lack of respect was a corresponding disrespect in the past. But I maintain that once President Parmelee had enforced discipline that he should have been upheld by the Board of Trustees. It was a conflict between authoritative authority and student disinterest. Had the trustees upheld President Parmelee, the incorrigible traditions of rowdiness and public scandal would have been blown over. The students of the future would have instilled into them the proper respect for discipline and their superiors; the school authorities held the trump to the situation; they could have devised the striking students to stand by their decision. If they did their school days would have been marked because every student absolutely refused to honor any of their credentials without which no reputable school would admit them. As it is, the students have had another precedent to look up. The Board of Trustees held the trump to the situation and merely voted with the trustees for the position of president. The very fact that they stated that such disrespect and insubordination were blow for President Parmelee is a blow for the exalted and highly moral religious institution of the Colorado School of Mines. He held this position until 1913, when he was ousted as a culmination of years of turmoil. From 1913 to 1917 he was engaged in various mining ventures. It is obvious from his record above, that he has had practically no mining experience other than that he has obtained by a process of absorption while President of the Colorado School of Mines. It is certainly unethical to remark in his biography that the title of "Consulting Mining Engineer" when he has not earned a degree, and is by and by threatened with disqualification. His activities from 1913 to 1917 were mostly in encouraging business ventures, including his work, which had been previously criticized and brought to light at the time of his re-election to the presidency of the Colorado School of Mines. Those who note that this was a blow for the re-election to the presidency of the Colorado School of Mines. Those who note that this was a blow for the reappointment. Many of the alumni members look upon the year 1913 to 1917 as the year of the work of Dr. V.C. Alderson. This may in part be due to the extensive advertising campaign that the School had employed. This is not a matter of facts, but of opinion. It has not been discredited by the admission of students, and the admission of students, in reality has been merely repeated by the Oil Shale Industry. Also, the School has been very grave in the matter of scholarships. Dr. Alderson has played into the hands of the industry. He has given statements of questionable scientific accuracy. In this book he discusses some of the reporting and refining problems as though he were skilled in the art, when in reality he is merely repeating what someone else had written. The primary object of his writing the book was to advertise Victor C. Alderson in a favorable manner so that he would have people thinking that he was an authority on this industry. It is true that Dr. Alderson is responsible for this large student body, as many of his friends advance as a strong argument for his ability. It is true that he is a capable politician and that he spends more time seeking favors with influential people than with those who are his friends and associates. Dr. Alderson has been a valuable adjunct. It might be well to note that this is a blow for the Colorado School of Mines, devoted to the Oil Shale Industry, is a masterful politician. He is disposed to practice a policy of stealing knowledge from others and utilizing it as though it were original. His latest book on the Oil Shale Industry is published by the Technical Press for its unfounded optimism and misstatement of facts.

Mr. H. M. Rubey is a banker whose interest in the School of Mines is secondary to that concerning the welfare of Golden. He is, perhaps, a good business man, and "a halo follow well". His name is not trained in that which constitutes the highest standard of scholarship. There is always the danger that. a local trustee lends to the belief that he is almost a graduate of the school. Mr. Rubey is a man of average intelligence who must be admired for his brazenness. Any man of average intelligence would have realized that Dr. Alderson was not the man for the position. The very fact that he was ousted four years previously should have warned them that they were inviting future turmoil. This very decision on the part should have been the absolute lack of respect for the position of president. Their procedure had all the appearance of the machinations of a political gang.

Mr. R. C. Carleton, the other trustee in the "conspiracy", scarcely ever attended any meetings of the Board of Trustees. He was absolutely indifferent to the welfare of the school. He is a well-read man, a clear thinker and able writer, but what right has he to comment on the qualification of the institution? He is an authority when it comes to the path of least resistance as it were. Compare this sort of an appointment with the appointment of a president in an educational institution where such methods are pernicious examples and out of place.
the oil shale industry stimulant and inti-
ately associated with the Colorado School of Mines with its development. This is commendable. Those in-
fomed on the subject of oil shales fully realize the importance of this industry, but they are also aware of the innumerable problems which must be solved before this time arrives. I maintain that the present method of training technical school personnel is not effective. The regula-
tion of the institution to attempt to write comprehensively on a subject when so many of the vital issues are as yet but "half-baked" is a serious matter. The unscientific expe-
th entation has disproven many of the state-
ments in Dr. Alderson’s book. The industry
is destined to ultimate success, and it is certainly advisable for one in his position to promulgate any but well estab-
lished facts. The industry is liable to be
given a set-back if initiative is based on partial truth. Let us look forward to the data published by the Colorado School of Mines as being authentic. What will be the reflection a short time hence when the true scientific facts become known?

Dr. Alderson is permitting unscrupu-
los oil shale promoters to use the school’s experimental facilities for the in-
vestment of oil shale shales. These plants are run a few hours at a time, and if the “wheels go round” while the spectators (presumably prospective investors) are present, the run and pro-
cess are acclaimed a “proven success.” One has but to refer to the advertise-
ments of these promoters to realize the purpose for installing their plants at the Colorado School of Mines. It gives them a background to make them appear genu-
ine—a subtle endorsement as it were. It also gives the School a lot of cheap ad-
terising.

I called Dr. Alderson’s attention to the unethical advertising (see advertisements of Porter Finance Company in various is-
ues of the Shale Review or the Railroad Red Book) that has been done by these companies. He has been using the School’s chemist to do his pri-
mary assaying for this company.

I then ask Dr. Alderson to decide for himself how he dares to do all this outside work, when in Aug-
ust, 1918, he refused an applicant in the position of chemist at the experimental plant. I remember that this applicant was honest and that the reason for wanting the position and as-
sured Dr. Alderson that he would attend to the school work first and do his own research work, if not needed, after regular hours, if necessary. He was refused the position because the Doctor felt that if he permitted this he might lay himself liable to personal crit-
icism. It might also be mentioned that at
the present time the staff at the experi-
mental plant are all doing outside work in regular hours, and that apparently the school work is in secondary considera-
tion; but these individuals, you under-
stand, are members of “Dr. Alderson’s clique.”

May I ask, why is it necessary for the head of the School of Mines to be absent over half of his time during business hours? Is it not the President of the Colorado School of Mines, but a side issue compared with his activities in the oil shale industry.

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I maintain that the president of any tech-
ical school should spend the majority of his time at the school. The position is a distinguished one because of the high prestige which the title should imply. Un-
fortunately at Golden, especially under the regime of Dr. Alderson, these titles are as deplorable as this, it is time
that steps were taken to remedy them.

Charge No. 2. Relative to the dismis-sal of professors without charge, har-rasing or adequate warning. Im-
mEDIATELY upon reading some of the testimony in this portion of the report, the reader knowing some of the pro-
fessors who have been discharged and whose cases are herewith discussed, im-
mediately says: “Professor So and So-
should have been fired long before he was”. Quite so, many of the professors in question should have been relieved long before, but what of the Professor who was not knowing the personalities involved, had to accept the testimony merely from the basis that, if the man in question was a professor, he assuredly should not be harassed, nor, without the consent of the faculty.

I asked Dr. Alderson a year or so ago what the cost of his trip to Scotland was. He, therefore, refused an applicant. ! insisted, of course, that the expenses of his trip to Scotland should be paid for by the School and he was refused the position because he was not honest enough to state the true facts. Yet, he had not realized the eventual success and import-
ance of the oil shale industry. This is commendable. Those in-
vestors are present, the run and pro-
cess are acclaimed a “proven success.” One has but to refer to the advertise-
ments of these promoters to realize the purpose for installing their plants at the Colorado School of Mines. It gives them a background to make them appear genu-
ine—a subtle endorsement as it were. It also gives the School a lot of cheap ad-
terising.

Dr. Alderson unquestionably feels that his position at the Colorado School is very insecure and that sooner or later he will again be removed. He, therefore, is doing all he can “to make hay while the sun shines.” It would be interesting to know with how many oil shale pro-
motions he is identified. Also who paid the expenses of his ‘private promontories’ until he finally earns the coveted title of “Professor.” For this he has sacrificed pecuniary gain in order to become a school professor, is derived by virtue of the academic freedom which his work involves. To be dropped like an unworthy laborer is certainly not consistent with this freedom of educ-
ation. It is a mark of warning to his colleagues which breaks down efficiency and breeds dissatisfaction.

Charge No. 4. Personally know of Dr. Alderson’s playing favorites and be-
ing lenient towards sons of influential citizens in much as is the case with a number of students. His ability to play politics is one of his greatest assets.

Dr. Alderson’s method of looking over examination papers, and appending his “Good, V. C. A.” and “Too Low, V. C. A.” is very insecure and that sooner or later he will again be removed. He, therefore, is doing all he can “to make hay while the sun shines.” It would be interesting to know with how many oil shale pro-
motions he is identified. Also who paid the expenses of his ‘private promontories’ until he finally earns the coveted title of “Professor.” For this he has sacrificed pecuniary gain in order to become a school professor, is derived by virtue of the academic freedom which his work involves. To be dropped like an unworthy laborer is certainly not consistent with this freedom of educ-
ation. It is a mark of warning to his colleagues which breaks down efficiency and breeds dissatisfaction.

Dr. Alderson because no suitable can-
didate will accept the position. If cer-

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The present system of trusteeship by appointment involves the Board of Trustees last year, to substantiate the "Loyalty Resolution" (see 225), which was passed by the Board of Regents, thus all prejudices would be attacked and many economies could be effected which would accrue to the benefit of the Institution.

I have attempted to speak the truth regardless of consequences. I have called "a spade a spade", because I felt that any half-hearted statement of facts would fail to arouse the attention of its lethargy. The reason for this indi­ference is quite evident to one from within—conditions are such that it is necessary to displace him, because he felt that the sooner the better. Why is it that a man should make such statements and then openly support the President in every controversy? Likewise with trustee Lewis B. Skinnere. He was appointed to the Board by his friends who knew of his adversity toward Alderson, and they kept him from using his influence to rid the School of him. In 1916, Mr. Skinnere offered the reappointment of Dr. Alderson, thereby tacitly accepting the charges which exposed him. What explanation has he to offer for this action? An explanation is due those who endorsed his appointment as trustee. With both of these men, Alderson apparently played up their "greatness" and by his unique system of flattery and entreaty (flattery) he has won them over. This doesn't show especial strength on the part of Dr. Alderson, but rather weakness on the part of these trustees.

Conclusions.

I am sure that if our graduates really realized the gravity of the situation that they would not be so indifferent to this report and would not sanction the attitude taken by the Board of Trustees. The Board of Trustees, I am forced to conclude that they are being appointed by the Governor to the trusteeship of the School of Mines and that they therefore are entirely responsible for the actions of the institution, and that no outside organization has any busines to meddle into their affairs. This attitude clearly stamps the self-exalted opinions of the Board of Trustees. By their attitude they have virtually ostracized the Colorado School of Mines in the eyes of the educational world.

Conditions are fundamentally wrong at Golden, first, with regard to the system of appointing trustees. The present system of appointments by the Governor places the administrative duties of the Colorado School of Mines in politics. Occasionally good men are appointed to the trusteeship, but more frequently they are not. A study of the personnel of the trustees during the past will confirm this statement. Likewise the fundamental policy of hiring professional personnel is equally bad. They are usually given a year contract and reappointed at the end of the year upon the recommendation of the President. This clearly gives the President the last word and is not conducive to getting the best type of teachers. In the past we have lost many of our best men because of this feature. You might imagine yourself in the position where your fitness is to be considered every year whether you will be retained for another, especially if some occasion has arisen during the year in which you have incurred the wrath of the President. One of the fundamental principles of education involves this point. A professor, after he has made good, should feel reasonably secure in his position. Otherwise, if a professor is incapable he should be dismissed after the first year and not retained or actually promoted, as has been done in the past. Under the present system of Golden, it is impossible to "attract and retain superior teachers". When a vacancy occurs in the faculty, it is almost impossible to secure trained teachers from other institutions who ordinarily would be delighted with an opportunity to teach in a school of this specialized character. Instead, it is necessary to enlist the service of other agencies. It is proper to use these agencies perhaps for securing instructors, but it should not be necessary for assistant professors except in emergencies. Thus men are obtained with little or no teaching experience or of proven ability. This is a dangerous policy as well as being unfair to the students. Occasionally a man is obtained in this manner, but as experience has shown, more frequently not. We have some very able instructors at Golden, but almost without exception they have had to go through the indignity of being dismissed after the first year and then being reappointed (theoretically, but actually, with little or no compensation) —they are waiting an opportunity to get out; or are attracted by the ideal location and climate of Golden. You have but to look at the record (see Table 295), which was passed by the Board of Trustees last year, to substantiate these assertions. If it were not for temporary expediency do you suppose these men would have tolerated such an insult? They attempted to instigate proceedings to demand that the trustees rescind this resolution, but through lack of co-operation places the administration of the Board of Trustees (especially the favorables of Alderson), whom they feared would betray the movement, nothing was done. To this day, this is a sore spot in the hearts of most of the professors. This resolution is a dangerous doctrine. It has been assiduously spread among the professors. This is a stupid ruling which confuses loyalty to the administration with loyalty to the School. It is high time to stop such nonsense and demand of the trustees to consider the possibility of disloyalty to the School resulting from the support of an administration which is itself disloyal to the School.

Because of Trustees you are hopelessly lacking in decency and common sense. Do you suppose you can obtain true loyalty by coercion? Never! Loyalty is inspired not instilled. If you or your President were the right sort of men, such legislation would be unnecessary. You insult your faculty and make them lose their self-respect, whereas you discipline other school employees are protected from your tyrannies by virtue of the Civil Service Commission.

Conditions are fundamentally wrong at Golden and require immediate correction. The present system of trusteeship by appointments made by the Governor, has had a long trial and been proven a failure. The reason is because of the difficulty of selecting men of the proper character—men free from local prejudice—possessing the proper educational ideas and habits. It lies in placing the school under the authority of the regents of the University of Colorado. If this is done, you will then be able to secure the services of a proven executive for the President, and you will be able to attract and retain efficient teachers from other universities. Some will object to this because they believe that the Colorado School of Mines losing its individuality. This suspicion is born of ignorance, many of the other schools of mines are under the authority of their regents, and yet they have retained their identity. Others in highest positions maintain that the regents are virtually political appointees, thus at Golden by the President instead of being appointed by the governor, are the trustees. They, therefore, cannot see how this would remove the influence of politics. This shows that this system works, just as it has shown that our system is a failure. The reason is that the people have a voice in the selection of the regents, whereas it is nominated, the alumni of the various schools have an opportunity to organize an effort to bring about their defeat. We would suggest that all the State's schools be under one board of regents, thus all prejudices would be attacked and many economies could be effected which would accrue to the benefit of the Institution.
Graduation May 10th.

The class of 1920, which was graduated May 10th with Director General Barrett of the Pennsylvania Railroad as solicitor of the day, has been favored with a demand from employees—both corporate and individual—for exceeding the experience of any other class, which were ventured to suggest, is not matched by the experience of any other college in America.

In 1917—the year which marked the return of Dr. Victor C. Alderson as president of the faculty—the class of 1920 had ninety-three members in its freshman, freshman, and junior classes, all of which number, partly owing to the demands of the world war and partly due to the requirements of an enlarged and exacting curriculum, reasonably enforced, only thirty-nine members received the degree of engineer in mines, or the equivalent degree of metallurgical engineer. This was 43 per cent of the class that entered in 1917. At West Point or Western Reserve, the percentage ranging 6 to 60 per cent of the entrance class make the course, which, like that of the Golden School, is mainly based on mathematics—an exacting program.

Graduates Are in Demand.

What has become of the thirty-nine graduates? These thirty-eight young men and one young woman—Miss Davis of Denver—were each favored with two or three offers, while the secretary of the Alumni Association, who conducts an employment bureau at the school, has at present on hand close to 100 unfilled requests. This 233.

Seven Go To Mexico.

Abadilla, Galluccio, Levington, Linn, Locke, Ordas, and Urteaga went to Mexico, while Yoong Yih Wong and Yu Den Woo are at the Liberty Bell mines and mill in the same district, gaining practical experience before they go home to take leading positions in China, which has been sending its mining and metallurgical students, exclusively, to the School of Mines for the past sixteen years, have unrivaled work, which was visited any other mining school know that they, too, have their share of Chinese students. Likewise to say that each of the thirty-eight graduates were favored with two or three offers is misleading. Two or three of these students may have had more than one offer. In most cases the second opportunity was far better than the one which had been generally passed around the class.

Likewise, such twaddle as contained in the last paragraph is deceptive. It is sheer nonsense to create the impression that the graduates are skilled in the numerous new branches of the mining industry. These ramifications are but new applications of fundamental principles. It is a physical impossibility for the student to learn anything in any of them. The study of these new arts is made possible through the concentration in the education of an engineer. These can be acquired in any trade school. Mastery in the fundamental subjects: mathematics, mechanics and geology, which constitutes the basis of a sound engineering education.

THE COLORADO SCHOOL OF MINES MAGAZINE.

TEN WAYS TO KILL AN ASSOCIATION

1. Don't come to the meetings.
2. But if you do come, come late.
3. If the weather doesn't suit you, don't think of coming.
4. If you don't attend a meeting, find fault with the work of the officers and other members.
5. Never accept an office, as it is easier to criticize than to do things.
6. Nevertheless, go sure if you are not appointed to a position, because if you are, do not attend the committee meetings.
7. If asked by the chairman to give your opinion regarding some important matter, say that you have nothing to say. After the meeting tell everyone how things ought to be done.
8. Do nothing more than is absolutely necessary, but when your members do their sleeves and willingly, unselfishly use their ability to help matters along, bawl that the association is run by a clique.
9. Hold back your dues as long as possible, or don't pay at all.
10. Don't bother about getting new members. "Let George do it," says the old Engineer.

In distant Bolivia, where American capital is now prominent, Charles M. Schneller ("Chuck," of the grid game) is engineer for the Bolivia Gold Exploration Company.

Juan Serrano is South American agent for the Hand-Ingersoll Drill Company at Karlton for the Western Edison Company of the Utah Fuel Company at Sunnyside, Utah. At Florence, this state, Myron LeRoy Simson is with the River Smelting and Mining Company as chemist and foreman.

Walter B. Tongue is on the Kansas geological survey as is also Ralph M. Weaver, Frederick A. Liechtenstein, a graduate of the class of 1908, is a large and chemical company in this city, having specialized in chemical work. He has several offers to choose from.

Denver Woman Invented Flotation.

This account of the world war class. The names of the corporations who have called these men attest the standing and standard of the Colorado School. We compare with that of 1903 is easily disposed of. In that distant year the electric furnace was not a reality, concentration was making itself felt, the cyanide process was a topic of academic discussion, while flotation (the invention of Carry J. Everson of this city) was yet an experiment in its application to ores. Last year it treated some 30,000,000 tons. Bearing this in mind, it is easy to see that the requirements of 1903 were less rigid than the requirements of the present day. The School of Mines was equal to the old requirements and it is also equal to those of the present, when the electric furnace, up-to-date concentration, cyanidation and the flotation process must be reckoned with as well as the various rare minerals.

Is such buncombe worthy of being reprinted on Colorado School of Mines stationery and distributed to advertise the school? It is such nonsense to create the impression that they, too, have their share of Chinese students. Likewise to say that each of the thirty-eight graduates were favored with two or three offers is misleading. Two or three of these students may have had more than one offer. In most cases the second opportunity was far better than the one which had been generally passed around the class.

Likewise, such twaddle as contained in the last paragraph is deceptive. It is sheer nonsense to create the impression that the graduates are skilled in the numerous new branches of the mining industry. These ramifications are but new applications of fundamental principles. It is a physical impossibility for the student to learn anything in any of them. The study of these new arts is made possible through the concentration in the education of an engineer.

These can be acquired in any trade school. Mastery in the fundamental subjects: mathematics, mechanics and geology, which constitutes the basis of a sound engineering education.

C. ERB WUESCHE.
and operations an equal share in the oil and stationary engines. Much can be extension of this time limit will demand this, the United States alone is believed 284...
His presence made the banquet a success, he was as keen and witty as ever.

Although it was evident that he was gradually failing in health, he was in his seventy-eighth year. His funeral services were held at the home of Mr. and Mrs. Francis Bulkeley, 1065 Pennsylvania Street, Denver, on December 5. Interment was in Fairmount Cemetery. The funeral services were conducted under auspices of the Alumni Association. The funeral sermon was preached by Rev. Gustave Lehman, of the Episcopal Church, of Golden.

The active pallbearers were John G. May, William B. Skinner, William D. Walton, Edwin H. Platt, Frederick C. Steinhauer and Orville R. Whitaker. The honorary pallbearers were Dr. Paul Meyer, Frank Dunn and Guy E. Miller, geologists with the Matador Petroleum Co. of Cheyenne, Wyo., were holiday visitors in Golden.

J. P. Bonardi, of the U. S. Bureau of Mines, Golden, Colo., has completed the prescribed course at the School for the degree of E. Met. He will not receive his diploma until next May. Bonardi will continue his work on the staff of the Bureau of Mines at Denver, the new home of the Golden station.

Jose Moraes will return to his home, Rua de Barao do Triunfho, 295 Recife, Pernambuco, Brazil, after visiting some of the important mining and smelting districts in Colorado, New Mexico, Arizona, Utah, South Dakota, Michigan and Pennsylvania.

A. H. Kiesel has gone to his home in Ouray, Colo., for a short visit. Wm. J. McKenna has gone to Tooele, Utah.

EX-MINES NOTES.

Maurice R. Hoyt and Mrs. Kathleen La Salle Murphy were married at Anaconda, Mont., on December 1. Mr. Hoyt is Assistant Superintendent of the Acid Plant of the Anaconda Copper Co.

Dr. Regis Chauvenet, our highly esteemed President Emeritus, died at his apartment in the Argonaut Hotel, in Denver, on Sunday afternoon, December 5. He was in his seventy-eighth year. His funeral services were held at the home of Mr. and Mrs. Frank Bulkeley, 1065 Pennsylvania Street, Denver, on December 7, 1920. Interment was in Fairmount Cemetery. The funeral services were conducted under auspices of the Alumni Association. The funeral sermon was preached by Rev. Gustave Lehman, of the Episcopal Church, of Golden.

The active pallbearers were John G. May, Lewis B. Skinner, William D. Walton, Edwin H. Platt, Frederick C. Steinhauer and Orville R. Whitaker. The honorary pallbearers were Dr. Paul Meyer, Frank Bulkeley, Capt. James T. Smith, Henry M. Rubey, Senator C. S. Thomas, Dr. H. B. Patton, Thomas L. Wilkerson, Ex-Gov. Alva Adams, Dr. Charles Nelin, Dr. John P. Kelly, Louis S. Noble, David W. Branton, Dr. J. H. Baker and Judge John C. Carroll.

The last time that Dr. Chauvenet appeared in public was at the Annual Alumni Banquet on May 8 of this year. He was our guest of honor. Although it was evident that he was gradually falling in health, he was as keen and witty as ever. His presence made the banquet a success. He jokingly remarked that he felt that this was the last Mines banquet that he would have the pleasure of attending. Little did any of those present that evening realize the sad truth that he had spoken. It is with profound sadness that we mourn his loss. His unusual personal charm and sterling character made him endear him to all of us. All those who attended school during his regime look back with pride to the days when they were known as "Chauvey's Boys". Dr. Chauvenet was born in Philadelphia, October 7, 1842. He was the son of William and Catherine (Hemple) Chauvenet. He graduated from Washington University in 1862 with the degree of Bachelor of Arts, and in 1864 he received the degree of Master of Arts. In 1867 he received the degree of Bachelor of Science at Harvard. In 1890 his alma mater conferred upon him the degree of Doctor of Laws.

From 1871 to 1883 Dr. Chauvenet had an office in St. Louis as an analytical chemist, and was not only successful in a financial way, but won a wide reputation technically. During this time he was chemist to the Missouri Geological Survey. From 1872 to 1875 he was also city gas inspector for St. Louis.

In 1883 he was called to the School of Mines as President and Professor of Chemistry and Metallurgy. It was largely through his high educational ideals and efforts that the School of Mines won its place among the institutions of highest learning of the world. In 1902, after a faithful service of twenty years, he resigned and again entered private practice as a consulting engineer and chemist, with offices in Denver. Dr. J. L. Palmer was appointed to the presidency, who in turn was succeeded by Dr. Alderson in 1905.

After Dr. Chauvenet resigned as active head of the institution, he was made President Emeritus, and for many years was a special lecturer in the chemistry and metallurgy departments. During the latter years of his life he had devoted most of his time to writing a history of the Colorado School of Mines. This manuscript, fortunately, was completed a very short time ago.

Dr. Chauvenet had been in great demand as a lecturer. His talks on stochiometry, theoretical chemistry, metallurgy of iron and steel, and lead and zinc, were famous. In 1911 he wrote a volume on "Chemical and Metallurgical Calculations" which enjoyed a wide circulation.

In 1887 he married Miss Virginia Mellen, a Golden school teacher. She survives him. They had no children. In ad-
Many of our graduates will be shocked to learn of the death of one of the School's well-known employees, a man who was the recipient of our nocturnal prank, John Jeuck.

John Jeuck died suddenly on Friday, December 19 from a stroke of apoplexy. Mr. Jeuck had been late watchman at the School the preceding night. During this time he had not had a single night's sleep due to his heavy duties. He fell better than he had in years. It was, therefore, a terrible shock.

Mr. Jeuck has been a resident at Golden since 1878. He was sixty-four years old. He was a prominent member of the Woodmen of the World. Mr. Jeuck is survived by his widow, two sons and two daughters.

SCHOOL NEWS.

The Trustees of the Colorado School of Mines are making plans to acquire a lease on the Miami Tunnel and adjoining mining properties at Idaho Springs. The purpose of the visit was a mining camp where the students can obtain some "practical experience in a real mine."

The Annual Freshman Ball was held at Guggenheim Hall on Friday, December 3. This year the dance was a formal affair, the first time in several years. All the fraternities gave their usual elaborate house parties.

School closed on December 18 for the Christmas holidays. Classes will be resumed on January 2.

A reprint from the Rocky Mountain News, December 15, which we thought might prove of interest to our readers: Head of Mines Will Tour West's Oil Shale Plants.

Taking advantage of the Christmas holidays at the Colorado School of Mines, President Victor C. Alderson yesterday started on a visit to Mines and the oil shale plants now in operation at different points in Utah, Nevada and California. WITH A VIEW TO KEEPING THE PRACTICE E F THE EXPERIMENTAL PLANT AT GOLDEN FULLY UP TO DATE.

On Tuesday evening, December 23, the Presidents of all the State Institutions (except Mines) met with Lieutenant-Governor George Stephen at the Metropole Hotel to discuss plans for the consolidation of their institutions. These present were as follows:

Lieutenant-Governor Stephen, chairman; President George Norlin, University of Colorado; President A. L. Lowry, Colorado Agricultural College; President J. C. Crabbe, Colorado's Teachers College; President Quigley, State Normal College; Prof. I. A. Palmer, Colorado School of Mines.

Prof. Palmer represented President Victor C. Alderson, who was absent on an oil shale inspection trip. The meeting should have been held in the afternoon, but it was postponed so that President Norlin of the University of Colorado could attend.

The Board of Regents held their meeting in the afternoon at Boulder.

Numerous proposals were discussed. The most interesting was the possibility of placing all the State institutions under one board of regents—this will have to be voted on by the people; the formation of a Central Board of the State Institutions; the formation of a Central Purchasing Agency.

Note how anxious President Norlin was to attend. Then refer to the sentence in the heavy letters in the previous item relative to Alderson's oil shale trip. This sounds interesting, but what practice is referred to? "Nuf said!"

The following men will graduate in January, 1921:

Brown, Frank A.
Buckley, H. G.
Charles, Ioslyn M.
Cunningham, Samuel D.
Dunlap, A. A.
Gunther, Walter A.
Hornesias, Javier A.
Jen, T. Y.
Kiesler, H.
Lee, Y. C.
Mayhugh, Dorsey E.
McKenna, William J.
Morse, Juan E. A.
Schade, Roger M.
Zambrano, Jose.
Bonaard, John P.
Savier, George W.
Many of these men have already completed their work and have left for a visit to their homes.

Athletics

1921 Basketball Schedule.

February 4-Mines vs. Colorado University at Golden.
February 5-Mines vs. Colorado Aggies at Fort Collins.

The 1921 basketball season promises to be a successful one for Mines. The intercollegiate basketball tournaments have started. By virtue of these, practically every fraternity member has a team, which results in making basketball popular. This brings in all the athletic material in school, which enables Coach Green to have a balanced squad from which to select the varsity.

The following inter-mural teams are represented:

Latin-American.
M. Club.
Betas.
S. A. E.'s.
Kappa Sigma.
Sigma Nu.
Barbs.
Freshmen.

The first game was played last week between the M. Club and the Latin-Americans. The latter won by the score of 16 to 14.

Basketball practice is being held during the Christmas recess. In practice games so far the varsity has defeated the crack Wheatridge High School team by the score of 37-27, and the Cottrells, an amateur club who held the Denver championship last year, by the score of 27-17.

Associated Student Council.

Plans are practically completed to organize what shall be known as the "Associated Student Council." This will be composed of a small group of selected students, who shall govern the student activities in athletics, social life, matters of scholarship, and general student affairs. This council shall be entitled to a definite number of representatives in proportion to their respective numbers. It has not been decided how many, as to how many representatives shall be chosen. This and other details are now being studied. It is expected that the organization will be active control of student affairs by the time the second semester commences.

Golf is Added to Intercollegiate Sports.

Golf will be added to the sport calendar of the Colorado colleges this year. This was agreed upon at a meeting of the five coaches which was recently held in Denver. The teams will be ready for competition in May.

The adoption of this sport for intercollegiate competition is the result of a movement started two years ago by Mr. Mills, the University of Colorado, was instrumental in the campaign. He is the one golfer in the state and an ardent devotee of the sport.

Mines, Colorado College, Denver Uni-
university, Colorado University and Aggies will all compete. Except for the School of Mines each of these colleges has a golf course available for practices at the city in which it is located. The Golden men will be able to use the links at the Lakewood Country Club, which lies about midway between Golden and Denver.

While several dual matches may be arranged for the month of May, the championships will be completed at a tournament in which teams from all schools compete. It is probable that it will be held on one of the Denver courses.

1920 FOOTBALL LETTERS AWARDED.

Eighteen members of the 1920 football squad won their letters. They are as follows:

McGlone, Linderholm (Capt.); A. Bunte, Mitchell, Fisk, Clough, Parkinson, Hyland, Gibbons, Black, R. W. Crawford, Squires, Jones, Robertson, Poulin, Davis, Clark, Houssaek.

Of these, A. Bunte, '22, was elected captain for the coming season.

McGlone, as the only Mines player to win a position on the all-conference, all-Colorado teams. He was awarded the position of tackle on both of these.

OUR UNFORTUNATE 1920 FOOTBALL TEAM.

It is too late to cry over the unfortunate 1920 football season in which we lost every game. It is but human to offer explanations. We hear all sorts of comments, some honest, but as expected, much is biased and directed against Coach Glaze. The world judges too much by results. If you are victorious, they are equally as reckless in bestowing credit. In a game the man who carries the ball receives the applause of the crowd. It is only the skilled observer who sees the work that underlies the hero’s gain possible. Conversely, if he fails to make a gain, he is “rotten”, even though his inability to advance the ball may have been due to poor teamwork. This unquestionably caused some hurt feelings of this result in dissension between the various fraternities, as well as with the Barbs. To help breed discord at least one member of the faculty lead an agitation to create a sentiment against the coach. He accused the coach of being unable to impart his knowledge to others, as well as being unable to inspire team work. This was bad taste and decidedly out of place. Coach Glaze is an all-American player, and not only knows the game, but also knows to Golden with an enviable record as a coach. No coach can inspire team work with a broken morale, and an organized opposition against him. Coach Glaze is a gentleman. He tried to be decent to all his men and treat them as such, instead of as being a lot of incorrigibles. Had he applied the "mail diet" he might have enforced discipline. Even in spite of these handicaps; a crippled team, discord and opposition, he staged a wonderful come-back in the last two games of the season.

Another feature that helped break the morale was the fact that the hardest games were played first in the season, with a crippled team.

Coach Glaze was assisted by Cuddy Murphy and George Williamson. Assistant Coach Murphy was an all-American tackle from Dartmouth, and has played two seasons with Jim Thorpe’s professional team. George Williamson is a post-graduate at Mines. He played four years on Colorado. Murphy coached the line exclusively, whereas Williamson looked after the second-string men. This left Glaze free to develop the varsity field and to supervise in general. With all his coaching, it seemed as though there was something lacking, besides coaching ability and inspiration.

The true spirit of athletics is not solely to win, but to develop sportsmanship, fighting spirit, and team work. If football cannot unite a student body in these respects, there is something else lacking besides coaching ability. Be men and face all the facts, and you will see that "hard luck" was the real culprit in the case. To change coaches every time you fail to win a championship is bad business as well as poor sportsmanship.

Consider the case of Coach Hughes at Aggies. He did not develop championship teams his first few years. He worked hard, and with the patient support of the whole institution, he has finally succeeded in placing the Colorado Agricultural College among the leaders in the Rocky Mountain Conference Athletics, whereas they formerly were "tailenders."

In conclusion, consider the other branches of athletics. When has the School of Mines had a coach who is as qualified in all branches of sport as is Coach Ralph Glaze? Never! If Prof. Joseph O’Byrne wants to criticize, let him do so where he is qualified.

Let us hope that any others who may have fallen in line with the current of unsportsmanship, will reconsider their opinions. In your desire to prove an excuse, don’t try to make a "goat" out of your coach.

C. E. W.
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