



# Head-Light Test Tonight

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## "SAFETY FIRST" THE HEADLIGHT

Conflicting Legislation Source Of Headlight Trouble

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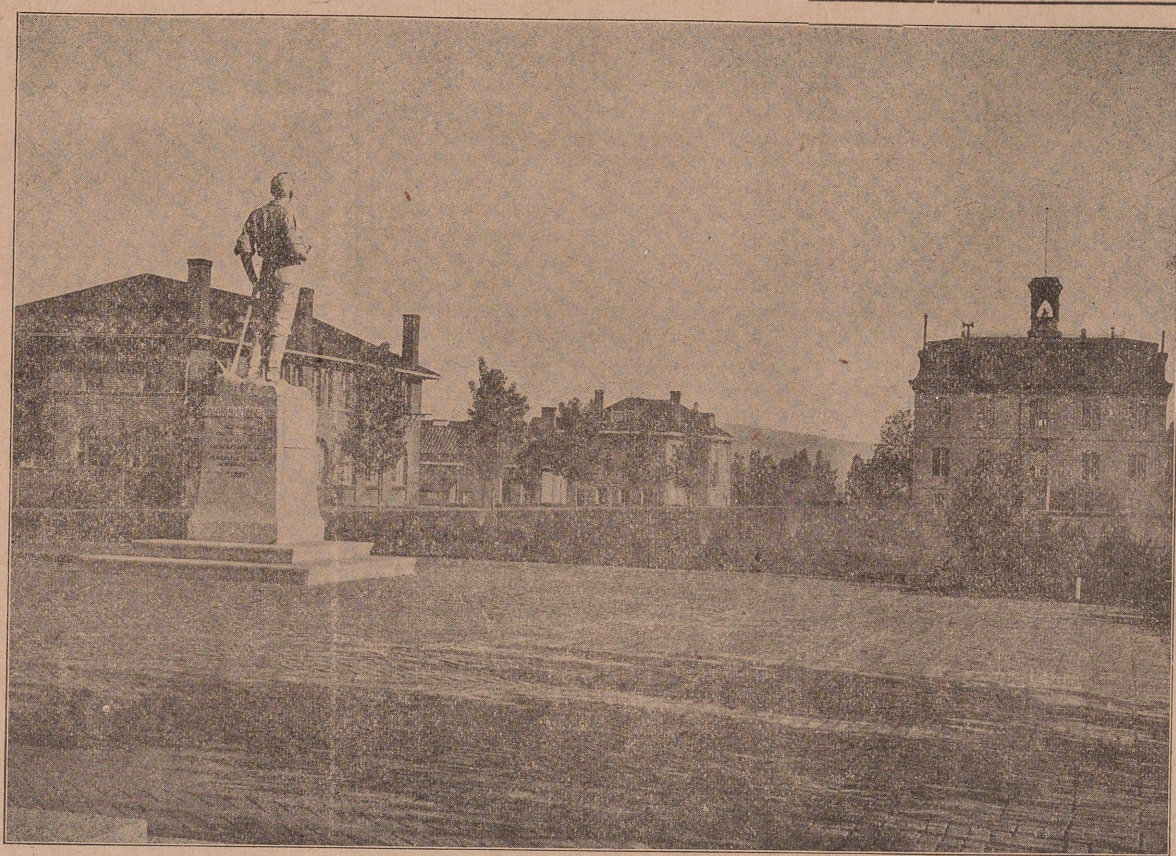
Efficiency of the Reflector Important in Lighting Track

By Prof. J. G. Scrogam

Since the safety of the traveling public and of men engaged in the transportation industry is in a certain measure dependent upon the use of a proper headlight for cars or locomotives, it seems proper to discuss this important subject at an Industrial Safety conference. Twenty-eight states have adopted legislation embodying seventeen different specifications regarding the use of headlights on locomotives. The enlightened state of Georgia requires a 300 watt arc lamp with a 23 degree reflector, while in the adjacent state of Mississippi, an 18 degree reflector is deemed necessary. In South Carolina the light must measure 10,000 candle power with a reflector. Nebraska requires a light that is sufficiently strong to distinguish an object the size of a man at a distance of 600 feet. (Whether the man is to be a white man or a black man, dressed in white or black clothes, etc., is not specified.) In five states a similar law is enacted in which the distance is set at 800 feet. In Iowa it is made to specify discernment of a man lying down at a distance of 1100 feet. Several states require a light of 1500 candle power without a reflector, while Missouri requires 1500 candle power with the reflector. It will be noted that many of the above laws are of a conflicting character, especially as the strongest practicable headlight manufactured at present delivers less than 1000 mean spherical candle power without a reflector.

What the traveling public, railroad management, and employes all want is that light which is most conducive to the safe operation of trains. The problem is how to obtain it. The efficiency of a head light is primarily dependent on the reflector or lens used, and, secondly, on the volume or power of the light itself. The reflector may multiply the horizontal candle power of the head lamp any-

(Continued on page 3)



## Nevada Girls In Basketball

One of the Team Urges the "Other Girls to Help by Being Present When They Practice

More activity than was characteristic of the early season has been evidenced by the co-eds generally since the Y. W. C. A. basket ball rally last Wednesday afternoon. Since the rally more of the girls have shown the players that they are behind the team by appearing in the gym during practice. One of the prominent members in speaking to a Sagebrush representative of this interest of the "other girls," said:

"It does the players a whole lot of good to have some of the girls in the gym during practice. When we are there alone we just get the feeling that we are playing for ourselves—that no one cares whether we win or lose. Of course if we win everybody makes a whole lot of us, but if we lose well then they say we might have tried harder. But if there are some of the other girls in the gym to see that we are working our hardest for a winning bunch from Nevada this year we feel more as if we were working for the university and not just for our own selves."

The varsity basket ball team is scheduled to play Stanford on February 19 at Stanford and to play the U. C. women at the University of California on February 21. This is Women's day at California and Nevada was especially urged to play there on that day if possible. The men's team will also be in that part of the country at the same time and so both teams are very well satisfied with the arrangements as made.

The girls have great hopes for a game with the Chico Normal team at Nevada later in the season and also a return from the U. C. girls along in the latter part of February or the first part of March. Also, if the San Jose Normal can do so, they will play at Nevada later in the season.

Out for the varsity team this season are: Francis Smith, Dorothy Bird, Lisle Rushby, Edith Taylor, Florence Scott, for the positions of forwards, Ruth McKissick, Ruth Woods, Lela White, Ethel Brown; for the positions of guards, Georgia Young, Lucile Gallagher, Gertrude Shade, Agnes Constable, Florence Nelligan, Margaret

(Continued on Page Four)

## "Rose Maiden" Twice Winner

Successful Cantata Will Be Taken to Carson City on Evening of February 6

The "Rose Maiden" made its second great hit in Reno last Friday night. The university choral club under the directorship of Dr. Charles Haseman deserves much credit for the excellence of the production and too much cannot be said in praise of the accompanists, Miss Maud Denny and Mr. Ernest Corris, who, presiding at pianos at opposite sides of the stage, proved the worth of that instrument as a substitute for an orchestra. Mrs. Wagner, as "Roseblossom," Mr. Fergusson as "Spring," Miss Ruth Miller as "The Gardener's Daughter," and Mr. Louis Rose as "The Forester," did the solo work and the Girls' Glee took the part of the elves. The personnel of the cast was largely the same as in the original production given the night before commencement last May. Applause followed each number as rendered.

The story that runs through the "Rosemaiden" is that the queen of the flower fairies, weary of a life of unbroken calm, prays of the newly returned spring that he will bestow upon her also the gift of love that he bestows on man. He warns her of the risk she runs, but finally yields to her entreaties by changing her while she sleeps into the form of a beautiful girl. Under the name of Roseblossom, she wanders through the world to find the love that she seeks, and meets with a girl who, having been betrayed and deserted by her lover, loses her senses and dies broken-hearted. But undeterred from her search Roseblossom becomes the wife of a forester, with whom she lives for a time in such perfect happiness that she cannot survive his death. The elves bewail the fate of their queen, and curse love as fatal to peace and happiness.

One of the great hits of the evening was scored by Tom Walker in his solo, "The Sleep of Even." Altogether the cantata was so successful that Director Haseman has decided to take it to Carson City on February 6 and made a trip to that city during the last week end to complete arrangements.

The cantata was given to the public the Reno and Nevadans visiting at

(Continued on Page Four)

## Dr. Max Adams Phi Kappa Phi

Annual Convention May Be Held in San Francisco During the Fair—1915

At the close of the mid-year meeting of the American Association for the Advancement of Science which was held during the holiday recess at Atlanta, Georgia, delegates from the various local chapters of the national fraternity of Phi Kappa Phi met Jan. 2, 1914 at Hotel Kimball, Atlanta for the triennial convention of the society. The delegate from the Nevada chapter was Professor Maxwell Adams, who had been elected a delegate to this convention by the local chapter at the December meeting just before he left on his European trip. Last week a report from Professor Adams on the proceedings of the convention was received by Dr. Hartman, secretary of the Nevada chapter. In his report we learn that Professor Adams was made chairman of the nominating committee of the convention and that Dr. Haseman has been elected chairman of the board of regents of the national organization. Since it is one of the duties of this board to decide upon the date and place of meeting of the general convention, it is probable that the next convention will be held in San Francisco in 1915, during the Panama exposition.

From the report received one learns that the fraternity has had from its inception a steady forward growth. Organized in 1897 the Phi Kappa Phi has established and at the present time maintains ten chapters of the fraternity. Nine of these chapters were represented at the convention. The chapter at Pennsylvania State college is the largest and the Delaware chapter is the smallest in the organization. At the convention petitions for several new chapters were filed, and it seems probable at the present time that several of these petitions will be granted. In the institutions where the fraternity has been established membership has been regarded as a coveted prize and the organization has been a potent factor in fostering sound scholarship and a zeal for learning. Chapters have also conferred a public service by introducing men of note as speakers on occasions. The Nevada chapter was installed in 1912 and the installation

(Continued on Page Four)

## REGENTS BACK "SAFETY FIRST"

Regents Support Cooperation Of College And Business

### BIG GEOLOGIST WANTED

Prof. E. A. Howes May Return To Control Extension Work

From reliable sources it has been learned that the president of the university and the board of regents are still working quietly to fill the positions of a head of the Mackay School of Mines and a man to take charge of the university extension work which comes under the agricultural department. In regard to the latter it is not definitely known whether or not Prof. E. A. Howes, who last year did a great deal of good work for the university, will return to Nevada. Prof. Howes is now principal of the Dominion agricultural school at Vermilion, Alberta, Canada, and it is rumored that he has been offered even a better position in the university of Alberta. His return to Nevada, therefore, hangs in the balance, but the president and regents have given out that they are hopeful. There are no questions as to the qualifications of Prof. Howes to make him "just the man" to put in charge of the extension work of the University of Nevada.

Relative to the mining school the president and regents are anxious to get some man trained along technical lines. It is rumored that an eminent geologist may accept the position. Columbia school of mines is the pet of John Hayes Hammond and it is due to him that that eminent college has gained much of its popularity. In their quest for a man for the position of head of that important department here, the regents have been asking themselves the question, "Why not have a man of nation-wide fame as a mining engineer or geologist to make the Mackay School of Mines his pet?"

The regents seem to be rather partial toward a geologist to take the work because of the evolution in the mining profession. The time when the prospector can travel around with his burro and scratch the surface of the ground to find a mine is rapidly drawing to a close. Present day min-

(Continued on page 4)

## Majestic Theatre

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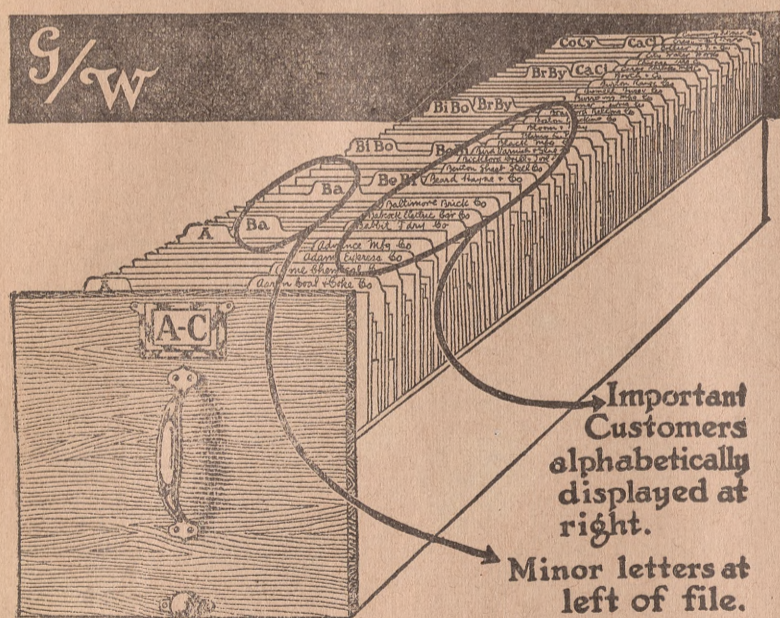
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# Regents Favor Utah Debate

Having Received the Backing of the University, Nevada Has Thrown Hat Into the Ring

The word given out by President Stubbs that the university would stand behind the contract for an intercollegiate debate between the University of Nevada and the Brigham Young university of Provo, Utah, has practically assured that contest. The student body, not feeling in a position to give financial backing to the proposition, was loath to take up the matter, but there is strong feeling of gratitude expressed by those interested toward the regents for the privilege of extending university activities into the long neglected realm of debating.

The contract as submitted by the Utah college stipulates that a series of two debates be held; one this year at Reno, and one next year at Provo. The home team in each case is to assume the responsibility of all local expenses and the visiting team in each case is to bear the burden of its own railway fare and hotel expenses. This virtually bound the University of Nevada, in accepting the contract, to an expense of between two and three hundred dollars for next year. The university in taking this from the shoulders of the student body, removed the most serious obstacle in the way of signing the agreement.

The debate for this year will probably be held in the gym on the evening of April 18. The question submitted by the Brigham Young university is as follows: Resolved that the United States shall exempt vessels engaged in coastwise trade through the Panama canal from toll charges; the right of the United States to discriminate conceded. Those interested in debating and those who have expressed themselves as either interested or as out for the team are organizing a Nevada debating society. The following are among those who have expressed themselves as being interested: Miss Gladys Hofer, Pflaging, Withers, Beard, Charles Riley, Wolfson, Somers, Boggs, Clark, Powers, Cazier.

The debaters of Brigham university are foemen worthy of Nevada steel. They have made an enviable record for years in their intercollegiate debates with the other colleges of Utah and this year they will debate against a team from the University of Southern California.

### HEAVY DEMAND

On account of the unusually heavy enrollment in the regular college courses, it had been decided not to hold the regular short course for farmers and housekeepers this year, but the demands for this work have been so insistent that at its January meeting, the executive committee of the state board of agriculture decided to offer a week's work as usual.

An unusually heavy program had already been arranged for the Colorado farmers' congress and a strong program for short course has been provided. There have been an unusually large number of inquiries regarding the short course, and if railroad rates can be secured, a large crowd is expected in spite of the fact it has been published far and wide that there would be no short course. Many parents of students will be in attendance.

The annual rural life banquet given under the auspices of the Y. M. C. A. will be on a larger scale this year. It will be held in the gymnasium of the Y. M. C. A. building.

Dr. T. N. Carver and Prof. Harold Focht will be the speakers. The program for the rural school life conference should result in great improvement for the rural schools of Larimer county.—Rocky Mountain Collegian.

### CALIFORNIA SPRINTER WINS

MELBOURNE, Aus., Jan. 25.—At the Australian championship meeting of the Amateur Athletic association today, George L. Parker, the California sprinter, won the 100 yard dash in 10 1-5 seconds. Eric Temple, of the Olympic club, San Francisco, took second in the high jump.

### PELKEY KNOCKED OUT

BAKERSFIELD, Cal., Jan. 25.—"Kid" Kenneth knocked out Arthur Pelkey in the sixth round of a twenty-round fight at Taft last night. They are heavyweights.

Consult Dr. John B. Koch, the registered optometrist, for your eyes.

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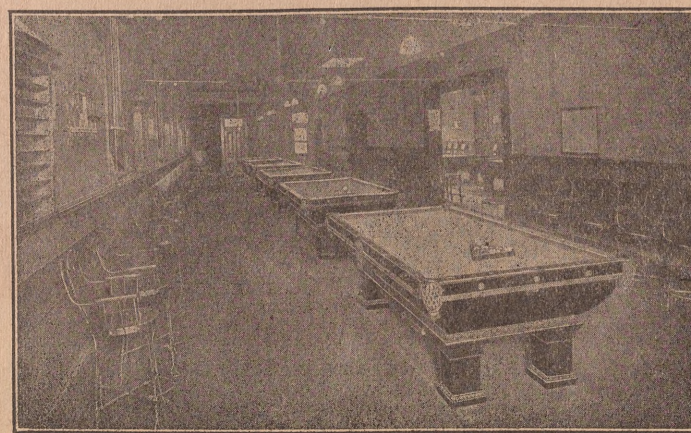
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**University Gymnasium Great  
Pavilion For Safety Exhibits**

Work on Exhibits in Gymnasium Continues Through Saturday and Sunday in Order That The Public May Enter Monday Morning

The following article taken from the Nevada State Journal in its issue of last Sunday morning covers in general the exhibits of the Industrial Safety conference as they greeted the public yesterday morning.

"The gymnasium at the University of Nevada was the scene of great activity yesterday. University students wiring the building for the extra current needed for lighting the exhibits, a corps of men in the employ of the Verdi Lumber company putting together one of the principal booths, several men from the Southern Pacific shops at Sparks erecting and adjusting the large block signal which is to be used in stopping the speakers at the conference on schedule time, and railway and industrial officials, all were there and added to the general atmosphere of bustle. The finishing touches will be completed today and tomorrow morning, all will be in readiness for the public to visit and to be instructed by the first organized safety first movement Nevada has ever known.

**Register**

"The arrangement of the interior of the gymnasium has been so planned by the committee of the Engineers' club which has the matter in charge, that there will be the minimum of confusion in handling the large crowds when the doors are thrown open to the public tomorrow morning. Immediately upon entering the building the visitor will be confronted by a "barker," who will direct him to the various exhibits, but first of all to a table near the door upon which the register will be placed. Upon registering the visitor will be presented with a tag printed in the safety first colors of red and green. These badges, pinned on with the appropriate "safety" pin, will bear numbers by which the persons wearing them may be identified by the corresponding numbers opposite the names upon the register. One thousand of these badges have been prepared.

**Model Block System**

"The first exhibit in the path of the visitor about the gymnasium will be the model block signal. This apparatus represents an investment of about \$1500. The whole model is about five feet long and represents a system of track and switches and sidings with the block signals incidental thereto. Little cars are put upon the track and are allowed to run along its length and, to the surprise of the visitor who is apt to look upon the miniature as a toy, the little blocks actually work. A demonstrator will stand at the model, move the cars backward and forward in order to demonstrate the intricate workings of the system, operate the little switches, and in every way strive to make clear to the public the manner in which an entire section of block signals operates from the time a train comes within its jurisdiction until it passes on to another section. The whole thing is electric—there is a most intricate system of batteries and wiring underneath the track—and works entirely automatically just as do the block signals along the track of the Southern Pacific line which passes through Reno.

"Next in regular order will be an exhibit which is to be arranged by Prof. L. W. Haseman of the department of physics at the university. The main subject which the exhibit is to illustrate is the discharge of electricity through gases. It will include a completely equipped wireless apparatus and other apparatus related to the general subject of safety of

which the physics department boasts.

**S. P. Booth**

"Occupying the central position of the exhibits is probably one of the handsomest booths ever built for any exposition held within the state of Nevada. The booth is for the safety exhibit of the Southern Pacific company and is an exact reproduction of the booth in which this international exhibit was shown at the International Exposition of Safety and Sanitation held at the Grand Central palace in New York city, December 11 to 20, 1913. John C. Weigandt, assistant chief clerk to the chairman of the executive committee of the company at New York city, and V. S. Andrus of the safety department of the company at San Francisco, will demonstrate the exhibit during the entire conference. Maps, photographs, charts and statistics will comprise the exhibit and catalogues and copies of the U. of N. Sagebrush will indicate by number and label corresponding to the number upon the exhibit what each picture or chart represents. This booth is finished in a dull white, bears the words "Safety" and "Southern Pacific company" in letters of gold leaf across its front. The walls, upon which hang the many pictures, are finished in a sage green denim, and a velvet rug of the same color covers the floor. The whole is made more picturesque by foliage and artificial roses.

**U. N. Exhibit.**

"In addition to these exhibits the publicity committee of the University of Nevada Engineers' club is arranging an exhibit for the university. This booth will contain the various pieces of apparatus used in relation to safety which are in the equipment of the different departments of the university. The mining department will have its oxygen helmet and pulmotor used in mine rescue work and there will be a demonstration of this elaborate outfit by State Mining Inspector Ryan. A gas engine built by the students of the school of mechanical engineering will be placed in the booth and will be kept running during the exhibition hours of the conference. A miniature locomotive, also built by the students of the mechanical department, will be in evidence. This locomotive, constructed under the direction of Prof. Preston, is an exact miniature in every detail of the locomotives that operate through Reno every day and will form a part of the Nevada show at the Panama-Pacific exposition in San Francisco next year. A large collection of safety first literature will also be contained in the University of Nevada booth.

In the center of the building and at a point where the speaker will be sure to observe, stands a block signal taken from the yards of the Southern Pacific company in Sparks. Men were busy all day yesterday and will complete their labors today so that this block will automatically signal that the speaker has gone far enough, as it has often signalled the same message to engineers in the company's service.

**Dallas Exhibit**

The gymnasium, however, is not to contain all of the exhibits that the university has to offer the public during the period of the industrial safety conference. In the agronomy laboratory on the second floor of Stewart hall, Prof. Knight of that department, who will be in charge of the Nevada exhibit at the corn show at Dallas, Tex., is giving the Nevada public the opportunity of seeing the agricultural exhibit of their own state at this great exposition.

**Tennis Club**

The following is a draft of the constitution drafted during the last semester by the Nevada Tennis club:

**Constitution**

**ARTICLE I**

The name of this organization shall be the University Tennis club.

**ARTICLE II**

The officers shall be elected annually at a regular meeting during the month of May.

**ARTICLE III**

The officers shall be: President, vice president, secretary-treasurer, whose duties shall be as customary.

**ARTICLE IV**

An administration committee consisting of the three officers named above, and two others selected by the club.

**ARTICLE V**

The duties of the administration committee shall be to see that the courts are kept in first class condition, to settle all disputes, to arrange matches and tournaments.

**ARTICLE VI**

The dues of the club shall be 25 cents per semester. Faculty members who contributed towards the construction of the courts will be exempt from the payment of dues for five years.

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## EDITORIAL

### "THE GENERAL"

In spite of snow blockades in the Sierras and washouts in Southern Nevada, the "Safety First" conference has been a success. From Reno people come words of praise to a university able to initiate and to execute a conference so successful as this has proved to be. The eyes of the industrial leaders of Nevada and of the United States are turned these two days to Nevada.

The Industrial Commission of the State has been a worthy second to the engineering departments of the university in making this industrial safety conference a success. The regents of the university, realizing its value to the school, have been the movement's hearty supporters. Labor leaders and employers of labor have met here on a common ground to discuss a

great question—the preservation of human life.

These men have been ardent supporters of the movement. For one of the greatest achievements in the history of the University of Nevada, the Sagebrush wishes to express the appreciation of the school to these men. But the college paper would go one step farther—it would call attention to the leader. Prof. J. G. Scrugham has become recognized as an authority in engineering by the biggest industrial corporation operating in the west. Because of his worth he has had the power to interest these people in this undertaking. He has been the initiator, the organizer, the general of Nevada's first industrial safety conference. The University of Nevada "takes of its hat" to J. G. SCRUGHAM.

## Regents Back "Safety First"

(Continued from page 1)

implies depth. Mining men nowadays must be technically trained, they must be geologists who have data scientifically gathered upon which to base their explorations rather upon chance discovery. The regents are on a still hunt for the very best man available for the job.

Also the regents are known to be behind the safety first conference movement and are backing it to the very limit that they can go. The conference is in line with the policy the president and the regents have been working along for years and it is one of the biggest moves ever made in that direction; it is the co-operation of business and industrial men with the university that they may take advantage of the university and use it and its equipment. In relation to the Industrial Safety Conference one of the members of the board of regents said, "If the mining men, the railroad men, and the industrial men of the state generally will take advantage of what the university can give them it will save them a lot of money and a lot of time. It also offers the opportunity to put the students in touch with employers of men and shows employers of men where good men are available. There is a rapidly growing interest of the mining men of Tonopah, Goldfield, Ely and other mining camps of this state in this university. By a little state loyalty such as these cities are showing, the outlook for the university must be a bright one."

### "ROSE MAIDEN"

#### TWICE WINNER

(Continued from page 1)

the Majestic theater in order to arouse an interest in student affairs. No charge at the door was accepted from anyone. The cantata had also another purpose. The evening before each commencement has been set aside for a cantata by the choral club and the repetition of the "Rose Maiden" was in a way a try out for an even greater effort to be given on Commencement Eve, 1914.

## Sophs Defeat Lovelock Boys

Game in Humboldt County Saturday Night Adds Laurels To Inter-class Basketball Champs

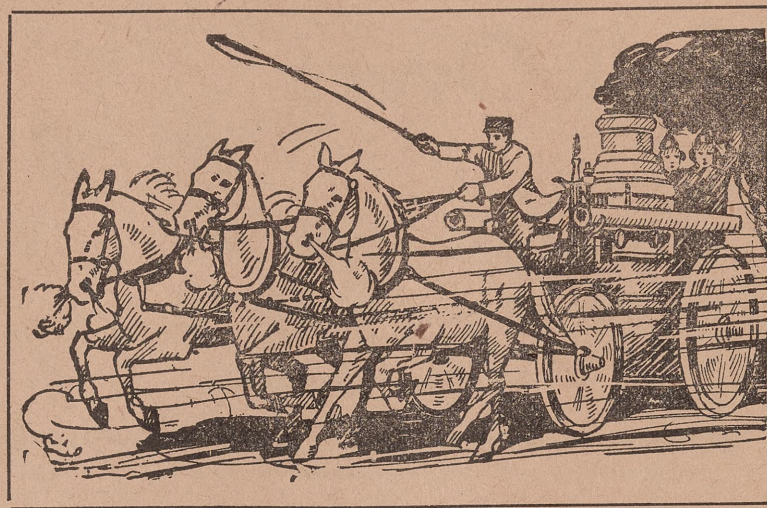
Leaving on train No. 6 Saturday morning and returning on train No. 5 on Sunday morning bringing with them the scalps of about five basketball players and the hearts of more than that number of Lovelock queens, is the way in which a tired, sleepy, disheveled bunch of Sophomores accounted for the twenty-five hours between those two trains when they straggled to the campus Sunday morning. The Sophomore basketball team holds this year's interclass championship and, seeking for more fields to conquer they went to Lovelock taking with them their efficient coach Lester Harriman '14. It is reported that Harriman, being a little more settled in his ways than his second year flock, made use of his time by looking into the irrigation problems of that section instead of wasting it after the manner of Sophomores.

The game, to use the language of the peepless ones who arrived Sunday morning, was "rotten." The time was "good," the dancing "great," the girls, "pretty and lots of 'em." But to return to the game: the Lovelockers played in great form and for a while it looked as if the champions of the University of Nevada would finish "out of luck." There was lots of snap to the playing and it led to much fouling and these situations Harriman, who acted as referee, handled tolerably well. The game was played in the Orpheum theater and was well attended. The Sophomores led at the end with a score of 50 as against that of 32 held by their opponents.

Those who took the trip are as follows: Harriman, coach; Henningsen, McCubbin, Hovey, Healy, Krummis, Jepson. Those who played for Lovelock are: "Rusty" Fuss, his brother, Nenzel, Beeson and Johnnie Dodd. "Rusty" sent his best to the university and Johnnie, who is well known to many on the campus and who is employed in a bank at Lovelock, sent his regards.

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## Nevada Girls In Basketball

(Continued from page one.)

Kemper, for the positions of centers. The team is being captained by Ethel Brown.

In this number there are four wearers of the German N, which is awarded each year by the executive committee to varsity players. These six are: Ethel Brown, Francis Smith, Lisle Rushby, Leila White, Dorothy Bird, and Georgia Young. When a girl has won her "N" for the first year, according to a custom established, she is given a little German N pin set with pearls. The money was raised for this purpose during the last football season by a series of feeds, candy sales on the bleachers, and a cake sale at the Gray, Reid, Wright store. By these means the girls were able not only to raise enough money to give each of these players an N pin but they have enough left to procure gold basket balls for any on the squad who may win their letter for the third time this year. According to the custom above referred to, those who win their letter once are given a pin, winners of the letter in a second season receive no special present, those who win their letter for three years are presented with a gold basket ball. If Ethel Brown, Lisle Rushby, Lela White, or Francis Smith make the team which plays against the California universities this year they will be awarded with this token of athletic achievement.

### MISS BLANEY GRADUATES

Miss Dorothy Blaney, the daughter of Mrs. Louise Blaney, secretary of the agricultural department of the University of Nevada, graduated last Friday from eighth grade of the Orvis Ring school. Miss Blaney is well known to many of the students on the hill and the Sagebrush joins with them in congratulating Dorothy and her mother. Dorothy Blaney will enter Reno high school.

## Dr. Max Adams Phi Kappa Phi

(Continued from page 1)

ceremonies were conducted by Professor L. H. Pammel of Iowa State college. Last commencement the annual address was delivered by Dr. E. I. Goshen of Salt Lake City. The charter membership of the local chapter was chosen from the heads of departments with the rank of full professor who had been in residence at the university at least one and one-half years.

The Phi Kappa Phi fraternity differs from the other national honor fraternities in that its basis of membership is broader than in the other societies. In Phi Beta Kappa members are selected from the classical and literary students of the universities. Sigma Xi takes its candidates from those in pure and applied science. Tau Beta Pi chooses its membership from those in technical courses. In Phi Kappa Phi the fraternity is dedicated to the Unity and Democracy of Education and is open to honor graduates of all departments of American universities and colleges. Eligibility to membership therefore rests upon scholarship and merit.

The meeting for election to membership of new members for 1914 in the Nevada chapter will be held some time during the month of February.

### IN THE SHRINE

On last Saturday evening, Prof. Sanford C. Dinsmore, of the department of food and drug control of the university, was installed at the illustrious Potentate of the Karak Temple, Order of the Mystic Shrine.

Amos Elliott will have charge of Prof. Knight's classes in agronomy during the absence of the latter at the corn show at Dallas, Texas.

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**S. C. Dinsmore's Waste Liquor**

Head of Food and Drug Control Submits Successful Plan For Purifying Silver Truckee

After being held up for several hours in the Sierras as the result of a mammoth snowdrift, the train bearing Prof. Sanford C. Dinsmore arrived in Reno Monday morning a week ago. Prof. Dinsmore was on his return from San Francisco where he appeared at a hearing before the California State Fish commission in regard to the dumping of refuse by the Floriston paper mills into the Truckee river. At this hearing a plan suggested by Prof. Dinsmore for the utilization of this refuse was adopted.

For a long time there has been an agitation among the people who use the waters of the Truckee river below Floriston that the Floriston paper mills be prohibited from dumping the refuse from the mill into the river. Growing out of this agitation a committee of Reno citizens was appointed to investigate the matter and to this committee Prof. Dinsmore submitted a play by which this poisonous substance complained of could be converted into a valuable by-product of the mill. A committee from the state of Nevada consisting of Fred White and Sam Frank, councilmen of Reno, Ed. Lunsford, city attorney, J. R. Meskimons, city engineer, Fred Shair, mayor of Reno, George Wingfield, George M. J. Gease, chairman of the Nevada fish commission, and Prof. Sanford C. Dinsmore, of the department of food and drug control of the university, went to San Francisco to represent Nevada at this hearing. The hearing was held in the offices of the California fish commission in the Mills building. The Floriston paper company was represented by Mr. Fleishaker and Mr. Louis Block of the company. At this hearing Prof. Dinsmore's plan was accepted by all parties concerned. The plan in brief follows:

The refuse or waste liquor, as it is commonly called, is produced as the result of the action of sulphurous acid on wood chips. This acid dissolves all of the sugar substances, tar, pitch, etc. in the wood and forms a liquor known technically as lignosulphonate. This is a very complex substance and very little is known concerning it. The character of lignosulphonate varies with the different kinds of wood—pine, cedar, fir, etc.—treated.

It appears that about 60,000 gallons of the lignosulphonate or waste liquor was emptied into the Truckee river every day and it is so that the water has a very disagreeable taste. To get rid of this liquor in some other way Prof. Dinsmore suggested that the liquor be evaporated to a certain consistency (30 degrees Baume) in which condition it is admirably suited for road binder purposes. Laboratory experiments have shown it to be superior to crude oil in this capacity. By installing the necessary apparatus the company will evaporate these 60,000 gallons down to about 30,000 gallons, a daily output of what will probably become a very important by-product.

**NEW JOB FOR HAM**

Claude Hamilton, who has been employed in the plant of the Elko-Lamoille Power company at Lamoille since the first of the year, has resigned his position at that place and has accepted a position as assistant to Lindsay Duncan, mechanical engineer of the Steptoe Valley Mining and Smelting company and the Nevada Consolidated Copper company at McGill, Nevada. "Ham" graduated from the electrical and mechanical department at Christmas time.

**FROM REAY MACKAY**

A letter from Reay Mackay, who graduated last spring from the agricultural department and who is now employed by the Miller and Lux people upon their holdings at Los Banos, California. Reay has received a promotion which speaks well for Reay and speaks well for Nevada. He sends his best wishes to Nevada and her students.

Barkley Craig, was able to leave the hospital on last Thursday after being confined in the little brick cottage with a severe attack of tonsillitis which kept him there for about two weeks.

Students of the engineering departments of the university were excused from classes Monday afternoon in order that they might attend the lectures of the Industrial Safety conference.

**"LAST DAYS OF POMPEII" 100-YEAR OLD FAVORITE**



Scene from Coming Picture Play

It is nearly a hundred years ago that Lord Bulwer Lytton wrote "The Last Days of Pompeii", and during all that time it has survived as one of the greatest romantic novels in the world of literature, and still holds marvellous fascination for hosts of readers. Mr. George Kleine has just produced a photo drama of the novel which will doubtless live for many hundred years to come and be shown upon the screen ages hence as evidence of the wonderful development of the art of photography in these times. Mr. Kleine's production was made in Italy and visualizes all the most important incidents of the story with vivid realism. The heartrending tale of the great love of the blind flower girl, Nydia, for her handsome master Glaucus, and her terrible suffering when she learns Ione has won his heart are all brought out with

telling truth. The tragic results of her efforts to win his love with the use of the love philtre the wicked Abraces gave, and which destroys Glaucus' reason, is dramatically illustrated. And the final episode showing the awful catastrophe of the eruption of the mighty volcano of Vesuvius with its clouds of ashes, flame and smoke, completely destroying Pompeii is reproduced with spectacular grandeur that is awe inspiring and impressive. Taken as a whole it is one of the most remarkable photo dramas that has ever been produced. Mr. Kleine's production of "The Last Days of Pompeii" will be the attraction at the Majestic theater beginning Friday, Jan. 30, for three days with matinees. The seat sale for this engagement commences Friday morning.

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average large numbers of young men to study engineering in school, and many of those who graduate emigrate to Canada or some of the English colonies to find employment. "French technical schools are not as well known abroad as the schools of Germany, and, indeed, are not nearly as numerous or as largely attended. It is interesting to know, however, that France was the first to establish a school of civil engineering, the school of roads and bridges at Paris being founded early in the nineteenth century. This school was established and is still maintained to furnish civil engineers for the government on river and harbor work and on the state highways and railways. It is conducted in a manner somewhat similar to our West Point school for military engineers, in that the students are selected by examination and as soon as they enter school they receive a small



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## Faculty Club Meeting Today

Talk by Dwight B. Huntley on "Applied Science" Opened Series Faculty Lectures This Afternoon

The Faculty Science club had a little talk on applied science last Tuesday afternoon when it heard the talk of Prof. Dwight B. Huntley, of the Mackay school of mines, on his recent holiday excursion to various mining camps of southern Nevada. Prof. Huntley is a practical mining man and in spite of the short time available for his trip, he was able to pick up a great deal of valuable information regarding this industry so important to Nevada. Those who know Mr. Huntley are aware of his ability to tell it interestingly.

"Observations on Trips Made Through Mining Camps in the Winter Season of Nevada" is the title of his lecture. On his trip, owing to the fact that it was Christmas time, Mr. Huntley did not meet a great many of the mining men as they happened to be absent during his visit. As he was in search of the mills where the newer methods are employed he skipped many of the camps and mills where these were not a feature.

Prof. Huntley was greatly impressed with the camp of Tonopah. In spite of the cold, snowy, wintry weather his visit to that camp was fraught with much interest. He did not go underground there but found much to observe in the wonderful and modern hoisting machinery for which the camp has an enviable reputation. In the past few years in Tonopah there has been a great installation of electric hoisting machinery and other electric appliances.

Goldfield, too, has advanced wonderfully in this particular, electric hoisting machinery for deep mining being a feature of the camp. At the hoisting works at the various shafts of the Goldfield Consolidated they have installed elaborate systems of recording instruments for recording the amount of electric power used to rock hoisted. By this means the hoist engineer is able to check up and tell whether he is getting maximum efficiency from his engine, by proper adjustment of counter-balance, etc.

At Rhyolite, Prof. Huntley found a quiet camp. Rhyolite is the station from which the prospectors make their expeditions into Death valley and found that there were a goodly number of outfits heading in that direction. Because of the arid conditions of that region, winter is the time used by the prospectors for exploration in Death valley.

Prof. Huntley spent one day at Wabuska and Thompson. At Thompson they have a wonderful plant for the smelting of copper ores. They are at present making improvements on the plant which will make it possible for the smelter to turn out copper bullion instead of copper matte.

The head of the Mackay school of mines saw many Nevada graduates during the course of his trip and found them all pleased with what they are doing. They are doing well and are all working with the hope of advancement. He also reported that he was treated royally by the mining men of all of the camps he visited.

As an indication that Nevada prospectors are still holding up to the average in activity during this season of the year the Mackay school of mines has received about the same number of samples for analysis as in former years.

### BIBLE CLASS

Prof. R. C. Thompson's class in Bible study for men will resume its meeting in the parlor of Lincoln hall next Thursday evening at 6:45 sharp. These meetings were extremely popular during the last semester and the Sagebrush is in a position to state that the fellows that are missing this course are missing something worth while. The classes begin at 6:45 Thursday evening of each week and last just one hour.

Arthur Reynolds, a graduate of the Mackay school of mines of 1913, is visiting at the Sigma Alpha house. Reynolds is interested, with four companions, in the "Neversweat" mine in the Rough and Ready district near Grass Valley and the "Neversweat" is bidding fair to make good. Reynolds will spend about a week at Nevada visiting and gathering up books and things that he left here and then will return to Neversweat.

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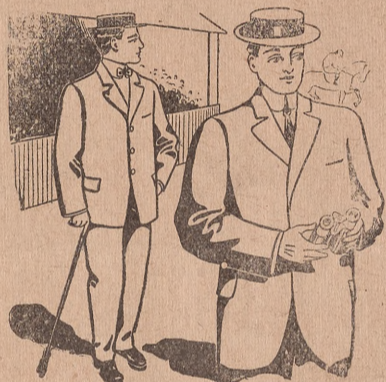
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**Wisconsin Engineer Article On European Tech Schools**

The Wisconsin Engineer, a magazine published each month of the school year by the Wisconsin Engineering Journal association of Madison, Wisconsin, in its October number publishes an article on European engineering schools, which was recommended to the Sagebrush by one of the departments of engineering of this university. The article was written by F. E. Turnear, dean of the college of engineering, of the University of Wisconsin. Extracts from the article follow:

"During the year 1895-6, and again during the past winter the writer had the opportunity of visiting a number of the technical schools of Germany, France and Great Britain. At the request of the editors of the Wisconsin Engineer there will be described in this article some of the peculiar features of these schools which may be of interest to Wisconsin students.

"The German school system, from top to bottom, is so thoroughly organized and so widely known that we naturally turn to Germany when we begin to inquire about any phase of European school systems. So far as engineering schools are concerned, it may be said that the German system has been adopted in several other European countries, notably Austria, Switzerland, Norway and Sweden. In France and England, however, the development of these schools can hardly be said to have followed along the same lines.

The technical school system of Germany is very complete, including schools of all grades from the continuation school, in which the amount of instruction is limited to eight or nine hours per week, up to the professional engineering school, or technical high school, which is of the same general grade as the university, and which corresponds most nearly to the standard engineering school of this country. Between the continuation school and the technical high school there are large numbers of trade and secondary technical schools with courses ranging from one to three years in length and covering a very wide variety of instruction. These secondary technical and trade schools are, from the standpoint of the German industries, quite as important as the technical high school. The technical school of secondary grade and the continuation school, have, unfortunately, received very little encouragement in this country up to the present time. This condition will, however, rapidly change in the near future, as many of our states and cities are beginning to make suitable provision for this grade of technical education. For the purpose of this article we will confine our further attention to the technical high school or the engineering school proper.

"In Germany, and, to considerable extent, in other European countries, the technical high school is quite separate and distinct from the university, having separate organization and separate maintenance. Generally, these schools are maintained by an appropriation from the state, but in Great Britain private endowment and city appropriations have materially aided. Student fees are very small, but under the German system, they are often sufficient to add materially to a professor's salary.

"In Germany there are altogether, nine institutions of the rank of technical high school. These are located at Charlottenburg (Berlin), Munich, Dresden, Stuttgart, Karlsruhe, Hanover, Brunswick, Aix la Chapelle. The Swiss school at Zurich and the great school at Vienna, are fine institutions and, for all practical purposes, may be classed as German schools. In the matter of rank these schools are on substantially the same basis.

"The entrance requirements are of the same grade as the entrance requirements to the universities, but more latitude is allowed in a preparatory course of study. Thus, for university preparation students must attend a classical preparatory school in which both Latin and Greek are required. For the technical school, students are accepted from preparatory schools in which neither Latin or Greek is taught, modern languages, science and drawing taking their place.

"The preparatory course of study in Germany carries the student somewhat farther than the high school course here, so that the students when they enter the technical school have already completed one or two foreign languages, mathematics up to analytic geometry and more of history and general study than is the case in this country. Students are, therefore, much better prepared and more matured than the average freshman in our own schools.

"The number of students in English schools is very much smaller than in Germany. In fact, the facilities offered in English schools seem to be out of proportion to the number of students. In two or three of the cities which the writer visited, the attendance in each place was about 100 to 150 engineering students, all told.

"One of the causes of the marked difference between the number of students attending British and German schools is undoubtedly the fact that in England the principal industries came first and the schools afterwards, while the reverse may be said to be the case in Germany. German industries have been created largely by technically trained men, and these men naturally know how to use the product of the schools. In England it is comparatively difficult for technical graduates to find employment, and in many cases they are obliged to go through precisely the same apprentice system as the uneducated employes. The custom is often still followed even in civil engineering, of the college graduate paying a fee to his employer to allow him to enter his office as a student or apprentice, in order to learn the practical side of the work. These conditions are not such as to encourage large numbers of young men to study engineering in school, and many of those who graduate emigrate to Canada or some of the English colonies to find employment.

"French technical schools are not as well known abroad as the schools of Germany, and, indeed, are not nearly as numerous or as largely attended. It is interesting to know, however, that France was the first to establish a school of civil engineering, the school of roads and bridges at Paris being founded early in the nineteenth century. This school was established and is still maintained to furnish civil engineers for the government on river and harbor work and on the state highways and railways. It is conducted in a manner somewhat similar to our West Point school for military engineers, in that the students are selected by examination and as soon as they enter school they receive a small compensation. During vacation periods and after graduation they are employed by the government.

"There are other engineering schools in Paris and elsewhere in France which train young men for the various kinds of engineering practice, but it may be said that French industries are such as to demand very much smaller numbers of technically trained men than those of Germany. Schools of high rank are few in number, and neither in attendance nor in the work of the members of the faculty have they acquired the reputation of the German schools.

"The writer is often asked the question if it is worth while for the student who graduated from an American school to spend a year in Germany. In answer to this, he believes that so far as actual instruction is concerned, the American school is much better adapted to the American student and American conditions than is the German school, and that even for graduate study there is not much to be gained directly in a foreign school. Foreign travel is, of course, interesting and profitable in many ways, but it is believed that such travel and study will be more profitable to a young man after he has spent many years in practice and is in a position to understand and appreciate practice along his particular line. On the whole, we believe it to be true that the German school is best adapted to the German student and German conditions and the American school to the American student and American conditions."

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Which you have but five minutes to eat.

The Reno Quick Lunch can't be beat; And for service you bet they're there, With the prices always fair.

And the Waitresses, four in all, You can hear them as they call— Waffles, Waffles, a Stack of Hots; Ham-and, Ribber, Fry Two on the Side,

Never stop or hesitate, but let 'em slide.

Now for the Catsup, then for the Sauce,

And a Cup of Hot Java made by the Boss.

Hot Mince, Baked Apples, Peaches and Cream,

Why any of these things are fit for a queen.

The Cooks in the kitchen are both lean and fat,

They're the best in Reno, and mighty good at that;

SLATTS, the proprietor, so pleasant and fair,

Welcomes all the guests as they enter there.

But this is what I wanted to say, It's the Best Place to Eat and not a bit out of the way.

Dr. John B. Koch, the student's optician, at R. Herz & Bro., the jewelers.

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# "Safety First" The Headlight

(Continued from page 1)

where from unity to 2000 times or more, depending upon the condition of reflector and the focus used. For example, a 500 horizontal candle power arc with a dirty, ill focused reflector, may give only a very few thousand candle power ahead on the track, while a well designed 100 candle power incandescent, with a properly focused reflector is capable of delivering nearly a quarter of a million candle power where it is needed. To obtain efficient results it is necessary for the light source to be well concentrated and placed at what is known as the focal point of the reflector. The complaint about poor head lights arises as much from the improper condition of the reflector and focusing, as from the insufficiency of the light itself. There seems to be an almost unanimous opinion that the light reflected ahead should be of sufficient volume to enable the engineer to discern any serious obstruction or fault on the track in time to prevent or minimize the danger of an accident. This means that the object must become visible at a distance of from 500 to 1000 feet under ordinary operating conditions. Another requirement is that the light should not be so strong and dazzling as to blind observers or approaching engineers. A very powerful arc, especially those rich in greenish rays, should be avoided because of the tendency to give a false color to the red danger signals and the injury to the eyes of those looking into its field.

The light should be uniform, reliable, and easily replaced or repaired in case of failure. Our problem is to determine which light most nearly fulfills these conditions. In recent years the unit, called the candle power, has been practically abandoned by illumination engineers and lamp manufacturers on account of its ambiguity. The most definite and useful unit is called the foot candle, and is a measure of the illumination on the objects to be made visible, instead of being a measure of the light source itself. To those having normal vision, an illumination of one-tenth of a candle-foot thrown from a headlight on a dark object the size of a man renders it distinctly visible at a distance of a thousand feet or more under ordinary conditions. A man wearing white clothes can be discerned at twice this distance. If he wears some glittering jewelry, as in one case which came under my observation, he can be spotted more than half a mile away. However, all trials should be based on discernment of dark objects, as the average trespasser on the right of way is rarely so accommodating as to display his jewelry to the engineer on the approaching train.

Illumination such as I have just described can readily be obtained from a concentrated filament lamp of 100 mean spherical candle power if a well silvered parabolic reflector is used. In foggy weather or when the air is filled with snow flakes, the lower candle power lamp again has the advantage as the rays are more penetrating than those of the higher candle power light. These latter are reflected back toward the observer. It is only within the past few months that a satisfactory incandescent lamp has been developed for headlight purposes. The old carbon filament lamp and the earlier forms of tungsten lamp were of such nature that the light source could not be sufficiently concentrated to give good results with a parabolic reflector. However, the development of the wire drawn helix filament tungsten lamp surrounded by nitrogen gas seems to have solved the problem. When a lamp is so constructed that practically all of the light source can be placed at the focal point, the illuminating efficiency is vastly higher than when the light covers a large area. For this reason a low candle power lamp can frequently reflect a better light on the track than the large arc. The big headlight manufacturing concerns, such as the Pyle, Remy, and others, who formerly specialized in arcs are now building turbo-generator sets to accommodate the rapidly increasing demand for the incandescent light. The advantages of giving no fumes to blacken or tarnish a reflector and requiring no elaborate mechanism for adjustment is obvious to all. I hold no brief for any particular make or type of generating apparatus. The point I do wish to make is that a five hundred or a five thousand candle power light is of very little use in preserving the lives of the traveling public unless it is properly reflected and directed to where it is needed. Another thing worthy of consideration is the

location of the light on the front of the engine.

For many reasons it would be a marked advantage to have the headlight located lower down on the front of the boiler than is the present practice. I was formerly a very warm advocate of such a change, but after observing the ultra-coarse methods used by an Austrian helper in opening up a smoke box door with a sledge hammer, the desirability of the present headlight location became obvious.

Reverting to the subject of headlight legislation again. While the startling originality of the ideas of some of the bill framers might be deemed commendable, yet the question is obviously one that should receive the attention of some competent Federal Commission empowered to make recommendations to congress. Such a commission should consist of a number of locomotive engineers and other qualified experts who would determine what degree of illumination on an object expressed in foot candles is required for the engineer with normal vision to sight a man in dark clothes at various specified distances. All legislation should be based on such accurate and reliable information instead of in haphazard manner as at present.

### NAT WILSON LEAVES

Nat Wilson left Reno last Saturday night for Elko where he has accepted a position with the Elko-Lamoille Power company. Nat accepted the position with the Nevada company in preference to one offered by the Northwestern Electric company at Portland. The Nevada men graduating in the department of electrical engineering almost always choose the Nevada positions when there are two available as they consider the opportunities for advancement in this state greater than those in some of the more densely populated districts. By Nevada offering employment to its own university graduates the state is keeping its own men at home and is not being depopulated to that extent.

### Y. W. C. A.

DR. HOUSE TO ADDRESS Y. W. THIS WEDNESDAY

It is hoped that Dr. E. L. House, who has conducted a series of evangelistic meetings here, will give one of his effective addresses at the Y. W. C. A. meeting this Wednesday. Miss MacAdam will sing. The meeting promises to be one of interest and certainly one that is invited. As usual, the meeting will be held in room 6— at 4:30.

Hot drinks of all kinds at the Fountain, opposite the postoffice.

### FACULTY SCIENCE CLUB

Dr. C. A. Jacobson of the department of chemistry will deliver the next lecture of the club on Tuesday, February 3. The subject of his lecture will be, "Some Recent Developments in Radio-activity." The club will meet in the geology room of the Mackay building on the above mentioned date at 4:35 p. m. Students and all of the faculty are cordially invited to attend this meeting.

Miss Rowena E. Glass, who has but recently recovered from an attack of appendicitis, spent an afternoon in the early part of the week upon the campus.

A. H. Babcock, chief electrical engineer of the Harriman lines and designer of several of the street railway systems of many of the larger cities on this coast, is in attendance upon the "conference."

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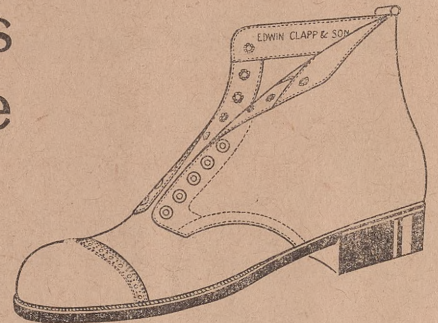
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