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COLLEGE EXPONENT

VOL. I.

BOZEMAN, MONTANA, OCTOBER, 1896.

NO. 6.

—ISSUED MONTHLY—

DURING THE COLLEGE YEAR

--- BY ---

✻ * THE STUDENTS * ✻

--OF THE--

MONTANA COLLEGE OF AGRICULTURE
AND MECHANIC ARTS.

BOZEMAN CHRONICLE
PRINT.



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COLLEGE EXPONENT

VOL. I.

BOZEMAN, MONTANA, OCTOBER, 1896.

NO. 6.

COLLEGE EXPONENT.

Issued Monthly During the College Year

By the Students of the Montana College of
Agriculture and Mechanic Arts.

EDITORIAL STAFF:

E. V. BLANKENSHIP, '97, Agriculture....
.....Editor-in-Chief

CHAS. PATTERSON, Special..... }
PETER SIEH, '99, Chemical..... }
.....Contributing Editors

MISS GRACE STANTON, Music.....Personalia

I. K. WISNER, Business.....Exchange Editor

THOS. O. CALDWELL, '99, Chemical } Local
R. H. SALER, '98 Mechanical Eng } Editors

WALTER DAVIS, Special....Business Manager

ERNEST EDSALL '97, Business.....
.....Asst. Business Manager

SUBSCRIPTION:

Fifty Cents per Annum, in Advance.

To Our Patrons.

There are many subscribers to the EXPONENT, who are of the opinion that the paper was to be published monthly during the entire year. It is to be published only once a month during the school year.

The COLLEGE EXPONENT should issue monthly during the school year; accordingly the first issue should make the impression upon its readers that the editors had had a rest during vacation, and were able to put forth a splendid copy. On the contrary, our editors have been engaged in various kinds of work since last June, and consequently find some difficulty in writing editorials and preparing other such matter as is necessary to make up a college paper; therefore they hope not to be criticised too severely in their effort to place the college news before the people.

Many of the editors and assistants who were elected to positions on the EXPONENT staff last spring are not in college this year, therefore the first issue of the EXPONENT has been delayed in order to select members to fill the vacancies.

One year ago there were many students who were looking forward with much anticipation to the completion of the new college buildings. It was the opinion that the students of the present school year would enjoy the first use of the magnificent structures, but this year draws upon us finding the same routine of work going on at the

High school building and the old Academy. Information was lately received that the chemical building would not be finished until next October. We hoped especially that the chemical laboratory would be ready for use before the close of the winter term, because of the difficulties experienced in obtaining good results from our work in our present quarters.

We feel very grateful to the business men of Bozeman for the interest shown by advertising in this issue of the EXPONENT. The publication of this paper has been placed in the hands of the students, but there are no funds given them; therefore this periodical must depend upon its own resources for its existence. There are several business men of the city who have refused to give us an advertisement or lend aid in any manner. We trust that when the circumstances are fully understood, the existence of the Agricultural College in our midst will be well enough appreciated for the business men to give us a share of their advertising. Our rates were thought to be too high last year, so we have reduced them, and at present our prices are as reasonable as those in any advertising medium in Montana. The EXPONENT has a circulation of 2,500 copies, which are sent to the taxpayers of Gallatin valley and other parts of the state.

The students have organized an athletic association for the purpose of receiving the necessary amount of exercise while attending school. They have been engaged in playing football since school commenced, and when the weather becomes bad they will be likely to start a gymnasium.

About forty-two of the college boys took part in the parade on the day that the corner-stone was laid. They marched under the direction of Captain Cobleigh.

While playing football one evening after school, Harry Patterson and Thomas Caldwell thought that they would play a trick on the boys. Being distant a few yards, they paced toward each other with equal velocity. A collision occurred, and on their heads, which were somewhat foremost, the points of contact were distinctly marked. As soon as they discovered that they received the most effective part of the joke, a mutual agreement was soon made not to try it again during the game.

Professor Wilcox has his classes so arranged that he has one day off during the week. This gives him a chance to gather material for the laboratory work in zoology.

Sales and Caldwell are making great progress in surveying. They found the distance from the corner of the Experiment Station building to the top of Old Baldy mountain to be a fraction over eight miles. The difference in level was somewhat over 3,000 feet.

Mrs. Marshall gave an entertainment at the art studio on Halloween evening for the benefit of the faculty.

New scholars are coming in almost every day. The attendance is somewhere near one hundred and twenty-five at present. A young man arrived from North Dakota about the 14th to attend college.

Professor Cobleigh, of the chemical

department, has been analyzing some sugar beets for the past two weeks. Samples have been received from different parts of the state. We trust that the percentage of sugar will be found sufficient to encourage the farmers of Montana to engage in raising sugar beets on a more extensive scale.

The College Camera club took a trip up Rocky Canyon on the 18th ult., for the purpose of securing some snap shots at some of the most beautiful scenery in Montana. It being a cloudless day, there were many good impressions procured. The pleasure of this trip completely overshadowed the disagreeableness of the preceding picnic, which will be well remembered by the members of the club, who came in contact with a heavy rainstorm.

Work on the new buildings is being rapidly pushed by the contractors, and if favorable weather continues a few weeks longer, the walls will be up, leaving only the roofs and the inside work, which can easily be carried on during the winter.

Professor Wilcox was confined to his room more than a week. We are pleased to see him out again.

The students have reorganized the Arena Debating society. The constitution and by-laws were revised, and new officers were elected. Peter Sieh was unanimously elected president; E. V. Blankenship, vice-president; Thomas Caldwell, secretary; W. O. Bohart, treasurer, and Howard Shaw, sergeant-at-arms. It was decided that the society would be more progressive if it had closed meetings, except on special occasions.

All male students of the college who are in good standing may become members. The initiation fee is 50 cents, and monthly due for incidental expenses is 10 cents. Fines are to be imposed upon members for non-performance of duty.

The present members realize the benefit derived from a literary training and are going in with a determination to get all the good out of the society that can be obtained. The programme rendered October 24th was as follows:

An essay by Walter Davis. Subject: "Preparing for Life."

Free parliament paper by E. V. Blankenship. Subject: "Fertility of the Soil."

Essay by Howard Shaw on "The Government of Greater New York."

Debate. Thomas O. Caldwell and Wyatt Jones on the affirmative; Peter Sieh and W. O. Bohart on the negative.

NOTES FROM THE EXP. STATION.

Root digging for the year is just completed at the Exp. Station. The harvest consisted of potatoes, carrots, sugar beets and mangel-wurzels, 125,000 lbs in all. These are all in various tests for determining the best yields and the most valuable for consumption. All are safely housed in the capacious root cellars at the station, and still there is room for four times the quantity. The director says, "I could not keep house without the root cellar;" that, "taking the year through it is the most valuable of all the improvements on the farm." With the walls 22 inches thick and 10½ feet below ground, well ventilated, with double doors, with air spaces between doors, and the curbing, it is held at the same temperature, substantially, the year through, and effectually preserves from the winter's cold and the summer's heat everything placed within its walls. The cost—\$182.50—is so small in comparison with its value, that every farm in the state should be provided with one, especially where the

building material of which it is composed—gravel, sand and boulders—can be easily procured.

Some excellent results are being obtained from the analyses of sugar beets now being conducted by Dr. Traphagen. One has shown a sugar content of nineteen and two-tenths (19.2) per cent of sugar. In round numbers this means that a ton of such beets would yield 384 pounds of sugar, worth here at the present time, about \$22.00. There should be a margin between this and the cost of production, freights, labor, etc., to make the sugar business a very profitable one for the Gallatin county farmer.

The young orchard has made exceptionally fine growth during the season and the wood is ripening up in good order. The stems of the trees are now being wrapped with newspapers to give them protection both from the ravages of rabbits and field mice, and from severe cold, to which the Montana tree is so liable.

Eleven hundred heads of celery have been trenched in the open ground for winter. Trenches were dug the width of a spade and sufficiently deep to permit the celery to be packed therein upright, the tops being level with the surface of the ground. As it grows colder, this will be covered so as to protect it from freezing, although freezing will not materially injure, if it is well protected from the air.

Plowing for spring planting is now being vigorously prosecuted.

Preparatory Department.

The course has been extended to three years which will place it on a level with the courses in our* accredited high schools. Meagre and poor preparatory training for professional courses has borne a sufficiently bountiful harvest of inefficient professional work. The course as extended provides not only a thorough drill in the common branches, but in addition, elementary work in the natural sciences, and an option in

Latin for those who wish to do more thorough language work.

This course will give the student who cannot afford the time and expense required for a college course, the opportunity to obtain a sufficient knowledge of English for the ordinary work of life, and such an acquaintance with the sciences as may develop within him the faculty of observation and bring him into closer touch with Nature. The desire is also to give the preparatory student some knowledge of Manual Training. For this purpose, we give two terms of Drawing in the third year, in addition to which the student has the laboratory work in connection with his study of the sciences.

A liberal course of reading is given for each year of the preparatory work, and students are requested to cover the course as far as possible. It is also desired that they purchase the works named, thus making them a part of their own library.

Preparatory Course.

FIRST YEAR.

FALL TERM.

Grammar, 4.
Arithmetic, 5.
Descriptive Geography, 5.
Spelling, 3.
Reading and Literature, 3.

WINTER TERM.

Grammar, 4.
Arithmetic, 5.
Geography, (Des. and Phys.) 5.
Spelling, 3.
Reading and Literature, 3.

SPRING TERM.

Grammar, 4.
Arithmetic, 5.
Physical Geography, 5.
Spelling, 3.
Reading and Literature, 3.

SECOND YEAR.

FALL TERM.

English Composition, 4.
Algebra, 5.
Anatomy, 5.
Etymology and Literature or Latin, 5.

WINTER TERM.

English Comp. and U. S. History, 4.
Algebra, 5.
Physiology, 5.
Etymology and Literature or Latin, 5.

SPRING TERM.

Algebra, 5.
Botany, 2.
U. S. History, 4.
Etymology and Literature or Latin, 5.

THIRD YEAR.

FALL TERM.

Rhetoric, 5.
Botany, 2.
Physics, 3.
Latin or Drawing, 5.
Geometry, 5.

WINTER TERM.

Rhetoric, 5.
Botany, 2.
Physics, $\frac{1}{2}$ Term, 3.
Chemistry, $\frac{1}{2}$ Term, 3.
Latin or Drawing, 5.
Geometry, 5.

SPRING TERM.

Rhetoric, 5.
Botana, 2.
Chemistry, 3.
Latin or Drawing, 5.
Geometry, 5.

Students who intend to take the Mechanical Engineering Course should take Drawing.

The Hunters' Camp.

The scene of the following poem was on the Clear Water river, in Idaho, about three miles from where the Carlin party deserted their cook, Colgate, during the winter of 1893. Colgate was an aged man; he was taken sick and could not travel. In the midst of a snow storm the party packed up their equipments and deserted their camp, for fear of becoming snow-bound. The old gentleman was left alone in the desolate mountains to endure untold hardships.

THE HUNTERS' CAMP.

Back in those grim old mountains,
With their lofty peaks so white,

A sight I see, that comes to me,—

The hunters' camp by night.

And the snow sifts through the branches,

That the bleak winds gently sway,

As the hunters smoke and laugh and joke,

Telling their tales of the day.

And one tells how the four-point buck

Escaped him thro' a trick:

"I shot too high"—with a little sigh;—

"If he hadn't been so quick!"

And the glare of the fir-log fire

Lights the scene for many a yard,

And the night winds groan, and sob and moan

And now it's snowing hard.

"When I lived in Montana——"

"Oh, you've told us that before!"

And so they chaff, and oftimes laugh,

While the blaze grows more and more.

A shout, "Look out! Your coat's afire!"

A jump, and cries of mirth;

But a little snow lays that fire low,

Almost before its birth.

"Now set the coffee on the fire—

Something warm and then to bed;"

And the thing is done by the nearest one

About as soon as said.

Then one of the lads starts singing

In a noble baritone,

And the rest join in and they're all akin,

For the song is "Home, sweet Home."

Down in the storm-swept gulches,

Where the elks are wont to roam,

The old song flies and echo replies:

"Sweet home, sweet home, sweet home!"

Then silence—who knows? sadness—

Thoughts they think, but do not tell,

Then a mournful cry wakes earth and sky—

Only a cougar's yell.

But the night is fast advancing

And it's time to go to bed;

So to the tent, its sides snow-bent,

They go. And the fire is dead

And silence reigns with darkness

Save for a little spark

Whose brightness holds in the bed of coals,

And a coyote's weird bark.

December, 1894.

—C. M. B.

Fertility of the Soil.

The task of fertilizing the soil is one that the farmers of the productive west are not compelled to perform, but the question arises "Will the soil always be as productive as it has been in the past?" It is a thought that rarely occurs to the farmer though it deserves more attention than it has received. The first tillers of the soil enjoy the benefit of the fertilizing properties which have been forming since the rocks first began to disintegrate into dust, but unless precaution is used, the cultivated districts here will become exhausted as they have in other parts of the world where the farming industry has been carried on extensively. While the return for labor is sufficient, the farmer seldom questions himself about the source of his bounteous yields. According to Chemistry, "Something cannot be made out of nothing." Then the source of farm products must be vegetable-growing properties stored away in the soil, and to use these substances (such as potassium, phosphoric acid and lime) the supply must diminish.

There is a constant waste of grain-growing material when crops are harvested, the products being shipped to foreign markets. A great amount of the fertility could easily be returned to the soil if the straw could be advantageously kept until it becomes decayed.

It is a common thing for the farmers to burn their straw, a practice which should not be carried on too extensively, without making some investigation as to its advisability.

The farmer seldom thinks of the injury to his farm when he hauls sixty or seventy-five bushels of grain per acre to market, and then applies a match to the straw of his last year's

crop. Yet it is true, that the principal ingredients of vegetable life are fast disappearing from the land.

The disintegration of rock and the fertilizing process of distributing limestone over the soil by irrigation are not sufficient to replace the loss of such immense quantities of fertilizing materials as those sent to foreign markets and those which disappear in flame.

It is advisable for the farmer to make good use of the straw left over from his winter's feeding. Old straw stacks are very much in the way, at times, but when stored on the poorest part of the farm and left to decay, they will at some future time give a two-fold return for the trouble that they caused the farmer, if he will only redistribute the remaining fertilizing material.

If the people of this age strive too greedily for their gains and unnecessarily destroy the fertility of the soil, their posterity must suffer the consequences.

In the future the tillers of the soil will be compelled to use fertilizing material at a great expense, or else be contented with a small yield for a great amount of labor.

The authorities of the Princeton University have issued a pamphlet showing the cost of an education at that place. The pamphlet shows that out of fifty-four honor-men in recent classes, nearly three-fourths spent only \$500 or less annually, and nearly one-half \$400 a year or less.

Miss Marion Weldon of Lewistown, Mont., is visiting her brother, Mr. Downing, who is attending college. Miss W. contemplates going to school here next year. We hope that she will.

Laying of the Corner Stone of the

M. C. A. and M. A.

On Wednesday, October the 21st, a large crowd assembled to witness the laying of the corner stone of the new building of Montana College of Agriculture and Mechanic Arts. Two previous attempts had been made, but owing to unfavorable weather, the exercises were postponed until the above named date. A procession consisting of citizens, students, G. A. Rs., Masons, and Company H, of the Montana Guards was formed at the corner of Main and Bozeman streets. The Free Silver band led the way to the college grounds, a distance of about one mile southwest of the city.

Acting Grand Master E. C. Day of Livingston conducted the Masonic ceremonies, assisted by the following representatives of the grand lodge: R. W. Deputy G. M., W. R. C. Stewart; R. W. Senior, Chas. S. Fell; R. W. Junior Grand Warden, Ellsberry Martin; W. Senior Grand Deacon, C. W. Jackson; W. Junior Grand Deacon, B. F. Yerkes; W. Senior Grand Stewart, M. Langohr; Grand Marshall, A. J. Edsall; Grand Tyler, J. C. Lamb; Grand Secretary, A. D. McPherson; Grand Treasurer, E. H. Schumacher.

Preliminary to the ceremony Mr. Day gave a short address. A prayer was then delivered by Chaplain Lewis of Bozeman lodge. After a song by the lodge choir, General Willson introduced Mr. Peter Koch of the local board, who gave a short address upon the many difficulties encountered while means were being devised by which the work on the college buildings could be carried on. Mr. Koch's remarks were concluded by tendering a merited eulogy on Governor Rickards.

The governor spoke for about ten

minutes. He was followed by State Superintendent Steere.

The articles put in a box and placed under the corner stone were, a College Catalogue, copies of the leading newspapers of the state, four copies of the EXPONENT, a silver dollar donated by Col. O. P. Chisholm, and many other articles, too numerous to mention.

A shower came up before the exercises were over, and many people left the ground, but the Faculty and the chosen speakers, realizing the importance of celebrating in full on this rare occasion, remained until the program was rendered as arranged. Had the architects and builders of antiquity had the courage, presence of mind, and determination, thus to brave the storms and place their manuscripts and coins under their structures, probably the present age would be better informed about ancient arts, but little did they think of the value that such things would be to the people of the present time. Our language and the stamp upon the silver dollar may not be a curiosity to the people a few generations hence, but probably will be when our language is remolded into a new form and the stamp of the coins of this country is entirely different from the impression upon the coins of the American dollar of today.

The following address was given by Governor J. E. Rickards:

RELATION OF EDUCATION TO GOOD GOVERNMENT.

That government which contributes most to the moral advancement of its people, and through the enlightenment of the masses makes possible the highest civilization, is the best government. As the dictatorship of ignorance has always given to the world its worst forms of national life, so the rule of edu-

cation has conserved the higher and better purposes of mankind.

No tribute to education would be complete without a recognition of the part it has played in the history of nations, as well as the work it has performed in the shaping of the destinies of individuals.

The birth of a thought—the generation of an idea—embellished by the fruit of its practical application to the affairs of men, has often set in motion the gigantic forces that created new nations and changed the current of history from the old channels into the new. If revolutions in the great world of thought that have moulded empires and created republics and opened the eyes of the blind to the mystic wonders of science, could be traced to their beginnings, how often would the seed thought—the germinal idea be traced to the school room and found nestling in the budding genius of a child.

In the light of their possibilities, the educational institutions of the land mean more than the work of equipping the student for the routine duties of a career he may choose to follow. They are the theatres from which may emanate the dramas of civilization, its possible tragedies and perchance those movements upon the checkerboard of history that deserve no higher designation than the comedies of national life. Great importance therefore attaches to these institutions for to them is assigned the responsibility of perpetuating good government through the medium of a healthy education imparted to those under their care.

Under such conditions a day like this becomes an event in the history of the state. It means the creation of a permanent home for a factory of ideas, whose handiwork will leave its impress upon generations yet to come.

There is something more beautiful than poetry, more fascinating than prose, in the thought that the civilization of today is building so wisely for posterity, placing in solid masonry the pledge of the present to the future. In ancient times the graces of art, music chiseled into stone, and pleasant dreams woven into architectural design, were the contributions to posterity set afloat in the stream of time; but today an enlightened public conscience seeks for the practical in life and builds for the future temples of learning in which all that is wise in government or helpful and hopeful in human affairs may be taught for the upbuilding of men. The world has learned to recognize the relation of education to good government, for our institutions of learning have peopled the nations with the statesmen and philosophers who gather the contending elements of society into a union of purposes, and marshal human energy to the best ends of civilization.

To the broader views of life imparted in the school room must be attributed the conservative temper and progressive spirit characteristic of the best forms of modern government. To imbibe a knowledge of the past in a manner that makes manifest the logic of the merits and mistakes of government, is to spread a banquet with the fruits of experience and open up to the mind clearer and better pathways to the future. In this way education serves the purposes of good government.

It places well disciplined leaders at the head of an orderly rank and file. It fights the battles of good government with the weapons of equity and justice, and the wrongs are righted in the forum of legislation instead of upon the bloody fields of war.

Education of mind and heart has step by step lifted mankind from the slough of ignorance and intolerance to a higher and better destiny. If the past be prophetic of the future, education is delegated with the mission of elevating the human race to a level that will bring to the world a practical realization of a new Utopia. Steadily but surely the march of the centuries is eliminating from human nature its thirst for the honors of war. Time was when those only were great who achieved greatness upon the field of battle. Primitive ignorance left its legacy of cruelty and its love of prowess with the race, and the history of centuries was written in blood before the Angel of Arbitration heralded a new gospel to the world. Even now the new order of things is upon the threshold of human affairs, yet the message of peace is written upon honest hearts, and in the moral education of the world "the nations will learn war no more".

There is no economy in ignorance. The inability of nations to interpret, understand and appreciate the rights of other nations, the prejudice of race against race, have caused enough expenditure of treasure to equip with comfort every person upon this globe. With the mental and moral education of man will come a deflection of natural energy into profitable channels alone, until from the sum total of human effort the maximum of happiness will spring.

There is something inspiring in the thought that this institution of learning located under smiling skies in the garden of the west, is to contribute its part to the civilization of the future and share in the work of making civil government equal the ideals of hope.

Mr. Steere spoke as follows:

Mr. Chairman, Ladies and Gentlemen and Fellow-Teachers: Education is an organism and as such must either grow or decay. All systems have humble beginnings and have crept up through the ages bearing the fruits of experience and the products of human progress. In every section of our land the school has been and is the index of the moral and intellectual growth of the people.

State after state has been added to this "one and inseparable" union of ours and educational systems have been evolved. Columbus opened the way for a new continent, and Jefferson, wishing to "open up overland commercial relations with China and India," sent out Lewis and Clarke, who blazed a highway through this state and through this valley. Here, in the "Egypt of America," what memories of the past come crowding in upon us. Yonder, almost in sight of this beautiful city, are the confluents of those noble streams named by the intrepid explorers after the most honored men of the hour, Thomas Jefferson, and his secretaries of state and of the treasury, James Madison and Albert Gallatin. Yes, and over here on the Yellowstone, not thirty miles away, was killed by the Indians, that brave and noble man, guide and scout, J. M. Bozeman, whose name this city bears. If there is joy in heaven this day it certainly is among these departed heroes—Lewis and Clarke, Thomas Jefferson, James Madison, Albert Gallatin and J. M. Bozeman.

Gold was discovered in California, but it was not until our Union's internecine strife was drawing to a close that Montana diverted and checked the stream of emigration toward the setting sun.

The pilgrim from the East and the '49'er from the West here found a home. Here midway between two oceans a new commonwealth was born. All honor to the sublimely courageous pioneers, who placed the robber and the highwayman out of our midst, and made it possible for a scene like this today.

Many of these once notorious marauders lie all about us. As one has impressively put it, "On the snow-sown summits of Montana, their hands tied behind them and a hempen cord for a necktie, they sleep, and they sleep in their boots, forever."

Not twenty years have elapsed since these thrilling scenes were enacted, and yet today we are planting a seat of learning. The midnight yell of the savage and the hoof beats of the herd of buffalo are events of the past. The kaleidoscope of time turns round and the scene is changed. "This is an extraordinary age. Events so various that they might crowd centuries are now compressed into a single lifetime."

"We now stand here," as did the people at the laying of the cornerstone of Bunker Hill monument, "to enjoy all the blessings of our own condition and to look abroad on the brightened prospects of the world." Our first inhabitants were broad-minded American citizens, most of them well educated, and a few college graduates. Many a miner was taught over the campfire after the trials of the day had been finished.

Our first school law was almost entirely a California product. In 1868 there were reported twenty-one male and six female teachers in this territory, and of this number five males and one female were found in this county. We have a slight evidence of change about us

today. In 1873 there were 50 male and 59 female teachers. In 1882 there were 64 male and 127 female, and in 1895 we had 203 male and 675 female teachers.

Our first report, that of 1868, shows there were 1,359 children of school age here, while our last gives nearly 40,000. The amount paid to teachers in 1868 was about \$8,000, while today it is fifty times as much, aggregating close on to \$400,000. The campfire school and the log school house have given way in one instance at least to an elegant structure costing nearly \$150,000.

Our educational advantages are to-day taking a front rank in the onward march, and we are not ashamed of the results. Our state university has been opened. We are building a state normal at Dillon that will cost \$50,000, which is a model in its architectural design and will be fitted for model teachers.

We are mindful of our deaf, dumb and blind, and we are building at Boulder a \$50,000 school for them.

We are preparing to erect a state school of mines at Butte to cost \$100,000, and we are placing another \$100,000 into these Agricultural College buildings. This is a progressive age. The humblest citizen is always interested in the maintenance and improvement of the public school system, because it lies at the foundation of our national existence.

We fully realize that the active duties of private and public life are better performed by intelligent and cultivated men and women.

"In the West," says Bayard Taylor, "all the traits of our national character are intensified—its energy, its impulsiveness, its ambition and its sensitiveness."

We are proud of our schools, we are

proud of our teachers, we are proud of our state, and we are proud of our fellow-citizens.

Our ideals either in our school law or in our schools may never be realized, but we have endeavored to keep abreast of the varying requirements of the hour. We have raised the standard of requirements of our teachers, but nowhere do we reach our highest expectations. We have tried to strengthen the intellect, but we have yet to quicken the conscience.

While there is yet a great work to be performed, we believe, with Mr. Dougherty, that "the free public school has met all reasonable expectations. It has given us increased power in the production of wealth. It has diminished pauperism by opening new avenues of labor, and by showing how money can be saved as well as earned. It has made more of social life, and there is less crime to be supported or punished. It has opened nobler fields of ambition than fields of war, for it has cherished human brotherhood. It has furnished a skilled force at hand for constant wants and energies—a force that has opened our mines, established our workshops, and made the 'waste places blossom as the rose.' It has caused the children of the Saxon, the Norman, the Celt and the Teuton to become true Americans. Yes, it does fulfill all reasonable expectations. Let us show our thorough belief in it by striving to perpetuate and improve it."

Mr. Chairman, the teachings of this institution will be carefully guarded, and we trust the results will be found in the highest types of manhood and womanhood in those who go forth from this college into the marts of trade. May the flag of this glorious

Union ever float over the aspirations, the inspirations and the ennobling thoughts engendered here. May the love of God and the love of country find an abiding place in the hearts of the youth of this great state, and especially those who are fortunate enough to find wisdom within these walls. Then, sir, we can rest assured that our homes will be benefitted, this institution of learning revered, our state honored, and humanity blessed.



A RHYME OF RAIN IN THE VALLEY.

Today the clouds are merry ;
They skip through the mountain glen,
And down here into the valley,
And around and back again.

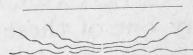
They mount to the snowy summit,
And peep at the world outside ;
Then sink to rest on the foothills—
Too easily satisfied.

And now they seem to quarrel,
And part for a minute or two,
While the sun—that recreant sinner—
Looks tantalizingly through.

But they "kiss and make up" quickly,
And hover in riftless gray,
Rejoiced that at last their efforts
Have made it a rainy day.

Down here in the mud and water
We're having a dreary time ;
It's very cloudy comfort
To turn such a rainy rhyme.

—W. F. B.



CONCENTRATION OF FORCES.

BY PETER SIEH.

It is a simple mathematical rule that when any number of forces act in the same direction their resultant will be the sum of all the component forces, and will act in the direction of the components. But if the forces act in different directions, the resultant will be less than the sum of the components, and act in a direction somewhere intermediate between that of the components. Man always has this problem before him: he has a certain amount of energy, which he can expend, either as one concentrated force, or in a number of components.

The mind is but the medium of transformation of the forces of the body, in the same manner that the dynamo is the means of transforming the power of the steam engine. Now, it is manifest that if there are a dozen great motors to be run by dynamos, and each requires the power of a thousand dynamos, the engineer would connect a thousand dynamos with each motor, instead of dividing the energy of each of the twelve thousand dynamos among the twelve motors.

In this world there are hundreds of fields to be worked, and each requires the undivided energy of thousands of minds. Now, it seems to be a very simple and wise thing that the entire energy of each mind should be applied to some special field of work. Each of these fields is a large one, and no man, no matter how much he concentrates his energy, can hope fully to master any one of these divisions, much less if he divides his attention between a dozen or more. Every opportunity of life, every field of science, is boundless. Thousands of

men can put their undivided attention upon one department for generations, and the field for investigation and progress still remains infinitely large.

The engineer of today has before him bright prospects, but if he desires to make a mark in the world he very wisely makes a specialty of one of the various subdivisions of engineering. The electrical engineer, who at the present day has a very brilliant field before him, must yet divide his field and develop along some special line, if he desires to become eminent. The chemist has a field which is practically without limit, and to gain distinction must necessarily choose a special branch. The lawyer no longer attempts to cover the whole field, but also makes a specialty of some department. And so it is in all of the various professions.

But when a man desires to make a specialty of some department, it is well that he should first acquire such a general education as is consistent with the circumstances. If it is not necessary that he shall enter upon his life work as soon as he possibly can, it is desirable that he should first acquire a general education. But in many cases it is different. The person has barely time to secure the necessary education and training connected with his department. It would be unwise in such a case for him to try to obtain a general education in preference to a special training. When he goes out into the world he will find that his general education is of no immediate benefit to him unless he has sufficiently mastered the work of some special department.

THE NEW DEPARTMENT Of Domestic Science and Arts.

A department of Domestic Science and Art has been organized during the present year. Mrs. Eliza Owens, who organized the department in the State College, in Iowa, and has had charge of the work there for eight years, has been placed in charge. The Iowa State Register, in speaking of the appointment, says: "The choice is a wise one, for Mrs. Owens has probably no superior in the country, in the special qualifications required in that department. Her long service at Ames was rendered with distinguished ability. Her loss at Ames will be felt for a long time."

A two years' course in Domestic Science and Art has been arranged and is now in operation, in a large and commodious room in the Ferris Block. The work in the College course extends over two years. Any student who completes the course shall receive a certificate, and may enter the general Scientific Course, and graduate in two years more, receiving a diploma and the degree of B. S. The course is made as practical as possible, the object being to give students the benefits which arise from the application of scientific principles in all domestic matters. To train both mind and hand is essential to woman's well-being and that of those entrusted to her care. The design in the arrangement of the course is to give her a college course along with the application of principles and the manual dexterity acquired through practical work in the laboratory. The course includes instruction in hygiene and sanitation. Combined with the work is a course in Physical Culture, by means of which both body and mind are strengthened.

Prof. Foster and family have moved to Logan, Utah, where the Professor has secured the position of director of the U. S. experiment station located at that place.

TOPICS FROM OTHER COLLEGES.

THE BACK NUMBER.

The bald-headed man in his family pew,
Leaned back on the cushions and slumbered;
And he dreamed that the preacher these words had proclaimed:
"The hairs of your head are all numbered."
The bald-headed man awoke with a start,
From his weekly devotional slumbers;
Then he sank on his knees and fervently prayed:
"Oh, Lord! Send me down the back numbers."

—Columbian Spectator.

Since our last issue W. L. Williams, V. S., has been elected to a position at the head of the new Veterinary college at Ithica, N. Y. The college is a branch of the Cornell university and is probably the largest institution of the kind in the United States. In a recent letter to one of his pupils here the doctor expresses himself as being well pleased with his new position. In speaking of the institution he says, "I have met a few of the two hundred or more instructors. Our faculty meetings look like assembly meetings. There are usually fifty or sixty present not including the instructors and assistants."

Appointments have been made to fill all of the vacancies which occurred in the faculty last spring, except in the chair of Veterinary Science. President Reid says that there have been many applications for that position.

Prof. R. E. Chandler, formerly professor of mechanical engineering in the M. C. A., is now taking a post-graduate course at Cornell

He Knew Not Where.

There were many invitations to a
Hallowe'en party sent to young
men of the city. The invitations read
as follows:

The Leap Year now is almost gone,
And ere another one shall dawn,
Too old we'll be to fascinate;
So're anxious now to meet our fate.
In place unknown on Hallowe'en,
Where maids and spirits will convene,
If search ye will, you'll surely find
A maiden suited to your mind.
'Till twelve, the mystic hour, we'll stay,
Then to our homes we'll hie away.

There were no names signed and the
place was not designated, so the fate
of one young man is related.

He searched till very late to find,
A maiden suited to his mind;
He searched later to find the place,
But at 5 a. m. gave up the chase.

F. A. Maxwell....

. . . KEEPS . . .

Staple and Fancy Groceries,

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...We do not have...

"LEADERS"

| We sell EVERYTHING at a profit. |

But WE will give you
SATISFACTION
Or your money back.

F. A. Maxwell,
Bozeman, Montana.

STRAYED—About September the 12th, one
buckskin horse, branded H on left shoulder;
was seen last near Bozeman. About the mid-
dle of October, one bay horse about six
years old, branded B on left shoulder and X
on right jaw; and one iron gray horse about
five years old, weight about one thousand
lbs. Will pay a liberal reward to the person
who leaves information at the Chronicle
office as to their whereabouts.

O. P. MORGAN.

N. G. Swiftkicker of Yale will not re-
turn to his studies this year owing to
his dismal failure in the foot-ball
exams. last year.

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REV. JAMES REID, A. B. PRESIDENT,
Mental, Moral and Political Sciences.

S. M. EMERY,
Horticulture.

FRANK W. TRAPHAGEN, PH. D., F. C. S.,
Chemistry and Mineralogy.

..... To be appointed.
Veterinary Science.

W. H. WILLIAMS, M. E.,
Mechanical Engineering and Mathematics.

FRANK BEACH, E. M.,
Engineering and Agriculture.

E. V. WILCOX, PH. D., HARVARD,
Botany, Zoology and Entomology.

WILL F. BREWER, A. M.,
Latin and English.

MRS. F. E. MARSHALL,
Art Department.

MRS. ELIZA OWENS,
Domestic Instructor.

W. M. COBLEIGH, E. M.,
Assistant in Chemistry and Physics.

MISS MAY TAVIS, A. M.,
Assistant in Prep. Dept. and Mathematics

H. G. PHELPS,
Business Department.

MISS SHAFF,
Stenography and Typewriting.

MISS KATE P. CALVIN,
Piano.

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Zeiss Microscopes and

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