

THE WEEKLY SPECTRUM.

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Vol. 15. Number 12.

NORTH DAKOTA AGRICULTURAL COLLEGE, TUESDAY, DECEMBER 15th, 1908.

PRICE 5 CENTS.

Philo-Athenian Clash To-Night

College Glee Club to Make Initial Appearance as a Fitting Prelude.

TROPHY BEAUTIFUL BANNER

Both Sides Have Strong Teams and Spirit Is Expected to Run High.

Promptly at 8 o'clock tonight in the College Chapel will open the preliminary exercises of the annual Philo-Athenian debate. The College Glee Club will make its initial appearance before the students at this time as a fitting prelude to the forensic efforts that will follow upon the question of injunctions. To the team showing the greater excellence in debate there will be presented a beautiful banner.

The question is: Resolved, That the use of injunction in labor disputes has been productive of more



ATHENIAN
Edwin Traynor

harm than good. It will be debated on the affirmative by the picket warriors of the Philos and on the negative by those of the Athenians.

The Philomathian representatives are Edwal J. Moore, Miss Mary M. Miller, and Leo P. Nemzek. The Athenians are LeRoy D. Gifford, Edwin Traynor and John Magill. The debaters on either side will speak in the order named.

Two rebuttals will be allowed on either side. On the affirmative



ATHENIAN
John Magill

Moore and Nemzek will hold these honors, and on the negative Traynor and Magill. Twelve minutes will be allowed each speaker in the direct argument and ten minutes will be the order for the rebuttals.

The Debaters.

Edwal J. Moore, '11, Philomathian, is well known in dramatic and literary circles; was a member of the inter-collegiate debating team of last year and in the Stockwell prize debate won the

STUDENT RECITAL.

Miss Grasse's Pupils Will Give One Wed. Evening in Chapel.

Students and faculty are cordially invited to attend a recital given by voice and piano pupils of Miss Edyth Grasse, in the chapel Wednesday evening, Dec. 16th at eight o'clock.

The following is the program:
Melody Ferd Beyer
Anabelle Wodham, Miss Grasse
General Boom Boom March. Ed. Poldini Daisy Hanson
Melody Schuman
Lousa Enstad and Miss Grasse
March Sartorio
Selma Olson, Miss Grasse.
Etude Lemoine
Jennie Wodham.
Tender Blossom Warren
Caloline Zink.
Evening Song Krogmar
Alma Erickson Miss Grasse
Fanfare Duvernoy
Rispa Ladd.
The Reapers Concone
Emma Piper.
In The Arbor Thome
Minnie Hatlie.
I know a lovely garden 'Hardelot
I know a lovely garden
..... d'Hardelot
Ethel Peterson.
To the Spring Grieg
Agnes Peterson.
Für Elise Beethoven
Zella Moffat
The Little Recruit Scharke
Katherine Ladd.
Idyll Carl Reger
Faith Prindle.
Less than the Dust Kash-
mira Song Amy
Woodforde-Finden Esther Evan
Murmuring Zepheers Jensen
Jessie Peterson.
Idilio Lack
Susie Lettner.

prize as the best individual speaker.

Miss Miller, '12, Philomathian, is in her first year at the A. C., but was recognized as one of the star orators of the Fargo High School last year.

Leo P. Nemzek, '09, Philomathian, who is known to all because of his gridiron fame, has also shown himself in the various times in which he has appeared upon the platform to be a fluent and forceful speaker.

LeRoy Gifford, '11, Athenian, is a dark horse, this being the first public program of this nature in which he has appeared. As a speaker he has logic and is convincing.

In Edwin Traynor, '12, Athenian, we have another member of the last year's inter-collegiate debating team. He has pleasing and convincing delivery and is expected to do much for his side.

John Magill, '09, Athenian, is well known as one foremost in all student affairs and as a member of the successful team in the Stockwell debate of last spring.

The judges will be attorneys Barnett Frame and Hildreth; Professor Arvold will preside during the evening.

The Prize.

The emblem for which the contestants will enter battle is a large beautiful green silk banner, the inscription being "Excellence in Debate," worked in yellow silk. The banner is now in the hands of Professor Arvold and will go to the society of the winning team until such time as the other society shall succeed in winning it. It is hoped that this banner will serve as an impetus for the promulgating of these debates annually.



PHILOMATHIAN
Leo P. Nemzek

SKATING RINK.

City Will Let Us Have Water, But Filthy Lucre Is Needed to Pay For It.

Whether we are to have a skating rink or not now depends on the College authorities and students. The engineers have done their part in estimating the amount of water required to flood the slough and have been busy the past week in interviewing the various city officials to secure the city water. They have been granted a special rate in the price of the water which Mayor Elliott says is the best that the city can do in the matter. This special rate



PHILOMATHIAN
Edwal J. Moore

which the city has offered will enable the rink to be flooded for about \$16. If the College authorities or the students are willing to raise this amount the engineers promise that they will do the rest.

It is not known whether the faculty have taken any action in regard to this proposition or not, and unless they do the matter will probably rest until the engineers take it up at their next meeting on Jan. 8, at which time the advisability of raising the necessary amount by subscription among the students will be taken up.

Coming Events in the Sunday Lecture Course.

The following is the schedule for the Sunday evening lectures at the Grand for January 1909:

Jan. 1, Dean A. A. Bruce of the University of North Dakota will give an address on "Democracy and Law."

Jan. 10, President Thomas A. Hillyer of the Mayville Normal will speak on "The Man and his Calling."

Jan. 17, The faculty of the Valley City Conservatory of Music will give a popular concert.

Jan. 24, Miss Clara N. Kellogg, head of the Neighborhood Settlement of St. Paul, will speak on "Slum Settlements."

Schedule Coming.

Manager Dynes reports that arrangements for the basketball schedule are progressing nicely. Several games have already been definitely settled upon.

TURKEY RACE.

Great Athletic Event to Be Pulled Off Tomorrow Afternoon.

The first annual turkey race of the Agricultural College will take place Wednesday noon at 12:05 sharp between the Mechanical Building and the Administration Building. The event will be a one-hundred yard dash. The winner will be awarded a turkey. The second man will get a chicken and the third a handsome box containing a valuable prize.

The judges will be five members of the faculty; the starter, Professor Richards. Professor Arvold will award the prizes. All entries should be handed to Professor Dynes not later than 10 o'clock, Dec. 16, '08. Everybody be present, as photos will be taken.

Through the kindness and generosity of the leading market-men of the city who are deeply interested in the A. C., the prizes have been obtained. C. E. Greene donated a large, fat ten pound turkey and Mr. Eggert, in order not to be outdone, appropriated a splendid chicken and duck.

ALL MAY GO TO CHAPEL NEXT TERM

President Worst talked to the students at chapel yesterday. He had many words of encouragement for those who have tried during this fall term. "All who have not tried," he said "will do the College a favor by not coming back."

The convocation exercises will be held in the College Armory next term so that all the students may attend. The President closed by wishing all a Merry Christmas and a Happy New Year. The assembly rose and closed the last convocation exercises of the year by singing "The Green and Yellow."

MR. FINLEY IN CHAPEL THURSDAY EVENING

Attention is again called to the lecture to be given by Mr. Finley on "Bird Life" in chapel Thursday evening. This lecture promises to be especially interesting as stereopticon views will be used to illustrate the various points of the talk. It was largely through the efforts of Mr. Finley that President Roosevelt set aside large areas as game preserves. Especially interesting among these preserves is one on the Pacific coast for the protection of sea birds. Mr. Finley is a lecturer of wide repute and experience in bird life.

Special Meetings This Noon.

The Philos and Athenians will hold special meetings today at 12 o'clock to complete arrangements for the debate which is to be held this evening. All society members should bear this in mind.

Collegiate Course In Veterinary Med.

Board of Trustees Added a New Course to Curriculum Last Wednesday.

MANY STUDENTS PETITION

A Veterinary Building Will Be Needed and Increased Corps of Instructors.

Beginning with next fall there will be offered at the College a full collegiate course in Veterinary Medicine, according to the action of the board of trustees at their regular session last Wednesday. This is a fact and though you may not have noticed it Dr. Van Es has been about the happiest man about for the past few days.

This action was taken in response to petition of twenty students, who wished to take such a course at the College, which, with the approval of Dr. Van Es was presented to the board of trustees. The board considered the matter favorably and granted the request a full giving the doctor full power to go ahead and outline the proposed course.

In face of the fact that in the past large numbers of our students wishing to take a course of this nature have been forced to go out of the state for the required training, this action of the board is most timely. It adds another 4 year course leading to a degree to those offered at the College. The course will be one of the strongest offered in the country as is seen in the fact that the most schools require but three years for completion, the doctor has determined to adhere to the four year plan on the assumption that it is better that the extra year be spent at College learning that which could not otherwise be learned by ten years of practice.

Dr. Van Es is highly pleased with the action of the authorities and is determined that the full course will be offered next fall though with present facilities the Department will be sadly in want of suitable quarters.

Veterinary Building.

At the next session of the legislature an appropriation will be asked for a new veterinary building large enough for the accommodation of all the students (veterinary and agricultural) wishing to take the course. Not only will this be necessary for best success of the work, but there also must be added to the teaching staff at least two new instructors which number will in the course of the

(Continued on Page 8)



The College Armory

The exterior of this building furnishes a vast surface for experimental paint tests.



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The Tendency in Clothesmaking

And buying has been along radical lines. By general consent the fancy or "freak" styles have been given over to the college or high-school boys. The point with us has been to get goods of this kind that will bear inspection as to workmanship; goods that we are willing to stand back of to the limit. There isn't a style we carry that isn't in good taste.

The Model,

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BULLETIN ON PAINT TESTS FOR 1907 OUT

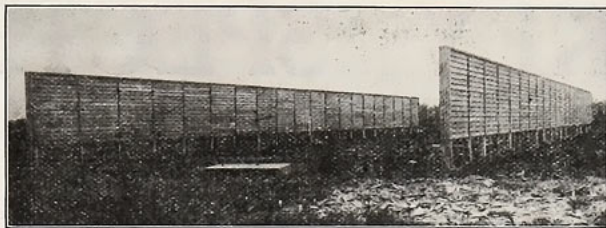
Practical Paint tests Are Outlined
in Detail With Analyses
and Results.

Bulletin No. 81 of the Station by E. F. Ladd covering the Practical Paint Tests for the year of 1907, was received from the printer last week and the distribution is now in progress.

The bulletin covers the detail of the co-operative experiments with the Paint Manufacturers' Association of the United States and the National Lead Company. Practical paint tests had been inaugurated by Professor Ladd during the year of 1906, using in these the commercial paints as put upon the market. It was proposed to continue these experiments on a somewhat larger scale the next year, and it was at this time that the Paint Manufacturers' Association came forward and proposed that a series of tests be conducted on specially prepared paints representing the general run of the paint manufacturers' formulae, thus eliminating the necessity or favorable or unfavorable criticism against any manufacturer and at the same time the station would be enabled to give the public the benefit of carefully conducted tests with many kinds of pigments and combinations upon various woods, the results of which investigation might serve as a basis for future criticism.

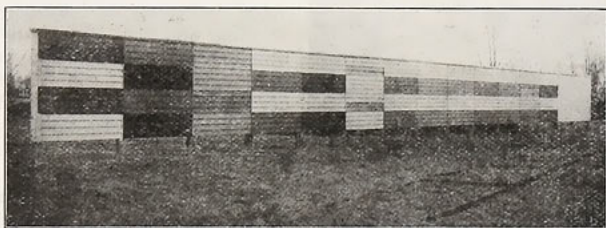
These contributions enabled the station to undertake some very elaborate tests that will cover a period of years. This bulletin outlines the initial part of this work, the construction and painting of the paint fences shown below, the painting of several houses, the analyses of the paints and the first checking over of the tests. All of this entailed a large amount of work as a casual glance at the tabulated data in the bulletin would indicate.

The bulletin is for free distribution, and it would be out of place for us to outline the methods or results much in detail but we call attention to the illustrations below



Paint Fence Before Painting.

This cut shows two of the experimental paint fences after construction, but before painting. The sides shown in the photo are covered with two kinds of weather boarding arranged in the panels. The other sides are covered simply with plain boards of two kinds, northern hard pine and soft pine. The substantial nature of the fences is apparent.



Paint Fence Completed and Painted.

All samples were tested on each different kind of lumber on both sides of the fence, the tests being made on the same panel number on both sides. To make this perfectly plain, if formula No. 1 White was tested on the third panel, on the west side of the first fence, both Hard and Soft Pine, then formula No. 1 White was applied to panel No. 3 on the east side of the same fence, both Soft Pine and Cedar. The same with Grays and Yellows. This was done so that each of the formulas and shades would have the same comparative exposures and be applied over the same kinds of lumber, namely: Northern Hard Pine and Soft Pine boards and Soft Pine and Cedar weatherboarding.

which will give some idea of the extent of the work to those who are not already thus acquainted with it. The illustrations are used by the courtesy of Professor Ladd.

Opportunities for Trained Veterinarians

Growing Demand Enhanced by
Large Salaries for Men
So Trained.

In connection with the recently established course in Veterinary Medicine it may be of interest to note what the Bulletin of the Ohio State University says about the opportunities of those taking Veterinary training.

"There is a growing demand for men who are skilled veterinarians. The close relationship between veterinary medicine and general medicine—so-called 'human' medicine, especially along sanitary lines, has opened to the veterinary profession a large, new field. At present a well qualified veterinarian has his choice of the following fields of labor:

1. "As an inspector and assistant in the Bureau of Animal Industry. This is a very desirable berth, protected by the civil service, and the appointments are made for life. The lowest salary paid, to an assistant inspector, is \$1400 per annum. The inspectors receive higher salaries, depending upon the importance of their respective stations.

2. "As an instructor at an agricultural or state veterinary college. These positions require the best trained men available, and pay good salaries.

3. "As an investigator of infectious and contagious diseases at state agricultural experiment stations. These positions are especially fitted to one who has the scientific ability and taste for original research. There is a great lack of men trained for such scientific work in this country, our veterinary schools formerly teaching little or nothing of the sciences (botany, physics, bacteriology, pathological anatomy, etc.) which form the foundation of a veterinarian's mental equipment.

4. "As a veterinary surgeon in the cavalry service of the United States. A bill now pending

before Congress to elevate the standard of the army veterinary surgeon, granting them the rank, privileges and tenure of office of a commissioned officer, will make this service much more desirable than it is at present. However, the position now pays \$1500 yearly, with perquisites.

5. "As a state veterinarian. Many of the states now have state veterinarians, and the time is not far distant when every state in the Union will have such an official to attend to the preventable diseases of the animals of his particular state.

6. "As a veterinarian to municipal health boards. Already several of our larger cities employ veterinarians as inspectors of abattoirs, butcher shops; of milk and dairy products, and to assist in sanitary work generally. Besides, some of the cities require the services of a veterinarian to care for and administer to, in sickness, the fire and police horses of the municipality. As time progresses one may look for a greater demand for trained men from this source. Some of these positions pay as high as \$2,500 annually.

7. "As a stock farm manager. A number of veterinarians are employed on stock farms in breeding districts as managers. A thoroughly capable man should be able to find remunerative positions open to him in such a line of work.

8. "Practice. For those wishing to enter upon regular veterinary practice desirable locations are plentiful in many parts of the United States, in towns, cities, and counties, where there are no regular veterinarians.

"There are three times as many animals in the United States as there are human beings. There are ten times as many doctors of medicine as there are veterinarians. It must be seen, then, that as the country grows older (which present), and as the value of our means that the veterinarians will be employed more often than at live stock increases, the future must have in store for the skilled veterinarian an opportunity to succeed in his chosen vocation far more favorable than his professional brother, the practitioner of general medicine."

Fifty men are practicing basket ball at Michigan. Once we are ahead of them, we can easily count seventy-five.

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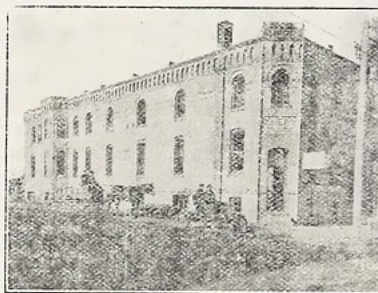
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Horticulturalists are now in the New House

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Professor Waldron is now rejoicing in his new greenhouse quarters which are certainly the best in the Northwest. The construction is now complete and the large stock of plants that has formerly been kept in the Biological greenhouse, has been moved and it together with the several hundred fine plants recently obtained from Chicago, have converted it into a handsome indoor garden.

The greenhouse is divided into three compartments; one for the growth of the ornamental plants; the central compartment for demonstration and class work, the third for station work and class work to a lesser extent.

Some of the recitations are now being held in the demonstration compartment. This compartment is especially designed for class work. In the center is a large bed in which are planted apple plum and other trees of different kinds. These will furnish material for the students in grafting and other manual operations. The benches at the sides of the supply room are for the work in seed germination and general plant propagation. This house is 24x66 feet in size and furnishes ample quarters for a class of fifty or more. The other two houses, each

18x66 feet, are not designed primarily for work in instruction; though they are naturally used for that purpose to a large extent.

The house on the west side is kept as a forcing and propagating house. At this time of the year the different forcing crops are now being grown. These include radishes, onions, and lettuce.

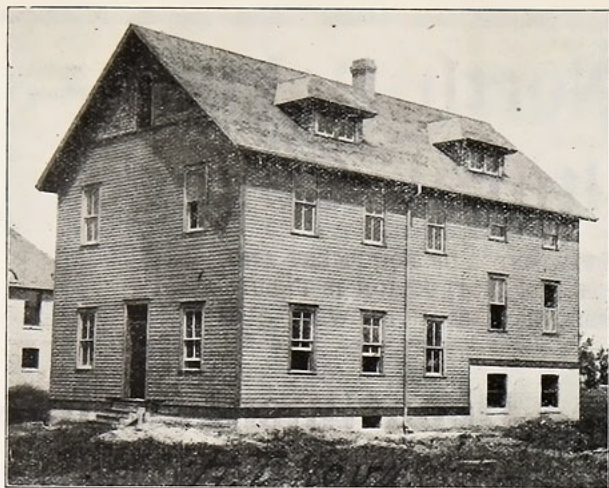
The east house is fairly well filled with about fifty different species of ornamental plants. Among these are palms, ferns, araucarias, cyclamens, azadias, chrysanthemums, hydrangeas aralias, agaves, and other less familiar species.

The houses are equipped with electric automatic regulators which govern the temperature at all times. The construction is of the most substantial and permanent kind, there being no wood work aside from the sashbars in the roof. The benches are of reinforced concrete, and are expected to last indefinitely. The equipment is modern in every detail and is expected to meet all reasonable requirements.

It is reported that there are 445 students in the University of Minnesota who are behind in their work and if it is not made up this semester, they will have to leave the University.

Students at Michigan who engage in "keg" parties will be disciplined by the authorities.

Many of the students in Agriculture are planning to take up the work offered by the Department of Education during the winter term.



The N. D. A. C. Experimental Mill

This building was erected two years ago, but is already historical as the scene of the experiment that sealed the fate of bleached flour.

BLEACHED FLOUR IS AN ADULTERATED PRODUCT

Unanimous Opinion of the Board of Food and Drug Inspection.

Awaited with intense interest, by the pure food men and the milling interests of the country, the Secretary of Agriculture, James Wilson, on Dec. 9 made public his decision on the bleached flour case which was in hearing before him and the Committee on Standards about two weeks ago. The decision puts the ban upon the bleached product of the mills six months after the date of the decision within the scope of the national pure food law.

As a national decision this is of great importance. It cannot prohibit the sale of bleached flour within the state in which it is manufactured, but by forbidding its sale in interstate commerce and declaring it an adulterated food product its production will be greatly discouraged. Moreover this decision will undoubtedly exert a great deal of influence as a precedent in regard to state laws which will be enacted.

The following is in part the communication from the Secretary to Dean E. F. Ladd:

"You are advised that I have today issued the following decision relative to bleached flour:

"Flour bleached with nitrogen peroxide, as affected by the Food and Drugs Act of June 30, 1906, has been made the subject of a careful investigation extending over several months. A public

hearing on this subject was held by the Secretary of Agriculture and the Board of Food and Drug Inspection, beginning November 18th, 1908, and continuing five days. At this hearing those who favored the bleaching process and those who opposed it were given equal opportunities to be heard. It is my opinion, based upon all the testimony given at the hearing, upon the reports of those who have investigated the subject, upon the literature, and upon the unanimous opinion of the Board of Food and Drug Inspection, that flour bleached by nitrogen peroxide is an adulterated product under the Food and Drugs Act of June 30th, 1906. That the character of the adulteration is such that no statement upon the label will bring bleached flour within the law, and that such flour cannot be legally made or sold in the District of Columbia, or in the territories, or to be transported or sold in interstate commerce, or be transported or sold in foreign commerce, etc.

Any one who noticed the second year Steam Engineers at work last Friday in the steam engine lecture room, would suspect that they were becoming pillmixers. They were grinding coal in a mortar in preparation for extensive calorimeter tests.

Ames took first place in both the stock judging and the dairy judging contests at the International. Naturally the men of the Iowa State College are jubilant.

Pedagogical Courses.

Three courses are offered by Professor Weeks of the Department of Education for the winter term. The first of these, methods, is designed for the students bed in which are planted apple, other two are elective for college students. Below is the outline of these courses.

Methods:—Aims and methods in elementary schools. The application of educational principles to the common school branches as nature study, elementary agriculture, language, geography, etc. The conduct of the recitation and course of study. For students of the three year course and the Three Year Teachers' Course at nine o'clock

Educational Psychology:—This subject is a necessity for the educator and is of great value to persons engaging in social, civic, or educational movements by means of the platform, press or otherwise. The application of psychology to educational matters will be made a feature of the course. Child, animal, and group psychology will be drawn upon for useful data.

Education in the United States and School Administration:—This course summarizes the educational progress of the United States and touches the main features of the present educational and administration problems. Some of the topics are:—The National Government and Education; City School systems; agricultural education; vocational education; the financing of public education, etc. This course comes at eleven o'clock.

Corduroys the Fashion.

All of the engineers have decided that they will wear corduroy trousers and flannel shirts. This accounts for the number of these artistic forms of dress that were seen about last week. When the coach blossomed out in that nobby all-corduroy suit of his there was some displeasure among these Knights of Engineering. It was dispelled, however, because of the close relationship that the coach has with the department.

Pupil (in geometry)—"Oh! I don't know anything."
Teacher—"That's axiom."
Pupil—"Why, sir?"
Teacher—"Because it is a self-evident truth."—Ex.

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The December issue of the Extension has appeared and contains many things of value. "Lessons in Elementary Agriculture," by Supt. G. W. Randlett, and the "Nature Study" article by Dr. Bell, are two very interesting features. "Arithmetic in the Rural Schools" is the title of an article by Supt. G. R. Davis of of Amenia.

Dr. Van Es no longer finds it necessary to make a bon fire to burn up the remains of his hogs and guinea pigs. They are now consigned to the furnaces in the power house.

The officials at Washington took another streak last week and the result was that we had another blank to fill out. It is strange what an unlimited curiosity those men in the capitol city have. have no money."

We note in the W. S. C. Evergreen that the Websterian Society has decided not to stage "Captain Rackett," but will stage "Just Out of College" instead.

One of the old 18-H. P. Olds gasoline engines that has been put out of commission by hard usage, has been moved from its place in the engine room to make room for another gas engine that is being installed for experimental purposes.

"Gladys," called her father, "what time is it?"
It is eleven, father."
"It's twelve up here. Eleven and twelve are twenty-three."
—And the young man departed.

The University of Washington is expecting a consignment of Chinese students straight from the "Land of the Rising Sun" in the near future.

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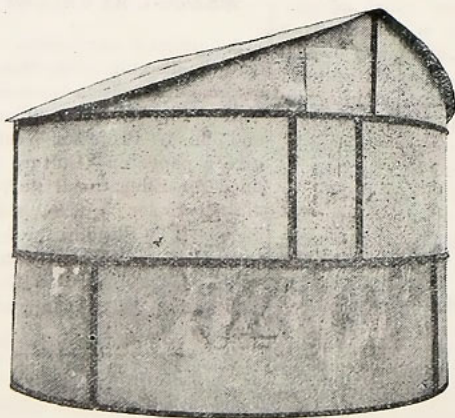
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Published every Tuesday of the school year by the students of the North Dakota Agricultural College, at Ulsaker Bros., 207 Broadway, Fargo, N. D.
S. V. Anderson.....Publisher

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Xmas is coming and so are Xmas.

"There is always truth enough to go around without stretching."

"A true friend is a man who knows you are no good and is willing to forget it."

That skating rink is coming. Don't forget to contribute your mite to keep it a moving our way.

Patriotism, like charity, should begin at home. Let us in all things, and at all times, be loyal to our old A. C.

The preparatory boys have decreed that the girls shall not infest the sanctum of their society. Put them on the black list, girls.

It is rumored that we are to have some new song books for chapel and enough to go around. Let us pray that they will be forth coming.

If a large number of people would only keep moderately busy with their own business there would be less trouble in this old world.

It has been said, and not without truth, that the man that does one thing and does it well is a good citizen. How many things are you trying to do at once?

A greater Agricultural College for North Dakota is the inward desire of every loyal student. Think what you yourself can do to promote this.

Really now, next to that power house whistle, that everlasting cloud of smoke that rolls across the Campus is about the most unpleasant, unnecessary accessory to our campus life.

The Spectrum heartily appreciates the interest the various members of the faculty are taking in our publication and the aid that is given in numberless ways, with-

out which the paper could not exist.

The man who has so little courage in his convictions as to resort to anonymous communications is despicable to say the least, and deserves no consideration. From the Spectrum they will get none.

The Spectrum invites contributions of news items from all. Our reporters don't get everything because they can't be everywhere. A way in which every student can help is to give the reporters a clew to any incident of interest of which may happen in his way.

The attendance of onlookers at dress parade is increasing. This is one way in which every student can help to increase the efficiency of the battalion drill. If the studentbody at large show interest in military drill it will react upon the cadets and stimulate them to greater efforts.

The chapel sangerfests are having their effect. Many have remarked of the increase in volume in the singing but say that there is still room for improvement. One thing for which the management of the chapel exercises should be commended in is the reviving of the old familiar songs. It is these that the students really enjoy to sing.

Tonight is the Inter-society Debate. The Philomathians and Athenians meet in their annual contest. For the greatest excellence in debate the winning team will receive and present to its society a beautiful banner. This will mean a great deal to the winning team, a great deal to the winning society, but it will mean much more if this can be made the beginning of a real and true debating spirit within the College. Do you want to help this along? If so, lend your encouragement by turning out tonight.

Once more has North Dakota's Pure Food Commissioner and our Dean of Chemistry, E. F. Ladd, been vindicated in his fight for the rights of the consuming public. The decision of Sec. Wilson relative to bleached flour is a significant one and will be far reaching in its effect. The fact that one who has so long been connected with the Agricultural College and its station workers into the lime light as a leading in scientific advancement.

A mass meeting was held at Ames before the close of the first semester the purpose of which was to create enthusiasm and consider plans as to what the students could do for the College over the state during the mid winter vacation. The Ames students are following the plan of many other institutions the idea being that the students during their vacation days may get together in the town and villages of the state and with the prospective students hold receptions, banquets, and socials and in other ways bring their Alma Mater before the people of the state in a favorable light.

Within a week from today all of the students of our own Col-

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THIS COLLEGE

OFFERS to the young people of this state an education which is thoroughly in line with modern thought and demands. It spends no time on dead languages or such subjects as are of little practical value. It aims to fit young men and young women for responsible positions in life. The demand of the present is for men and women who can think and investigate for themselves; who can deal with the social, agricultural and industrial problems of the day.

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WRITE TO THE PRESIDENT FOR CIRCULARS AND CATALOGUE

WINTER TERM AND WINTER SHORT COURSES BEGIN JANUARY 4th.

lege will leave for their home over the state. What could they do for the A. C. during this time?

Knocking.

There are two methods of reform. One is by revolution and the other by evolution. The first is destructive, it sweeps away existing conditions and aims to improve by building upon a new and better foundation. The evolutionist follows the method of nature in growing the oak from the acorn, is satisfied with sure and slow degrees of improvement, here a little and there a little. The works of the former are spectacular, of the latter imperceptible in their action. By which of these methods has civilization been attained? By both in a measure perhaps. But by evolution, however, we recognize that man has attained his present position.

By analysis revolutionists may be put into two classes. The first, we spoke of above. He tears down

to build that which will remedy the defect or evil which he sees. The other class is defined by a term that is so familiar to us that it has become trite. "Knocker" is the word to which we refer. He is the person who feels called upon to tear down at every opportunity but fails to build up; neglects to complete his work and though he may not destroy the structure which he attacks, it is left weaker than before.

Will such action in any way improve matters. If we see an evil and feel called upon to proceed to correct it how should we proceed. The way may not be plain, and revolutionary methods may be found to be the only method feasible. If so let us not fail to provide the better material with which to build.

Mephitis Mephitica has been busy during the past week. Secretary Murphy has made the first draft of the constitution.

AT EDUCATIONAL ASSN. MEETING AT VALLEY CITY

A number of our faculty will attend the meeting of the State Educational Association to be held at Valley City on Dec. 30 and 31, and Jan. 1. Professor Weeks will give a paper on "Culture as Defined for Educational Purposes," and Professor Waldron will give one on "The Place of the Agricultural College." It is planned to have a large delegation from the College in attendance at this meeting.

Gallery Practice.

The second gallery practice of the year took place last Friday. Several good scores were made this time as the light was better than at former practice. Better results are expected of the cadets after they have become accustomed to the new rifles.

Professor Dolve attended a "Good Roads Meeting" at the Forks last Thursday.

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Did you see the Christmas postals at the Book Store?

Societies**Y. M. C. A.**

W. W. Tously, a business man in the city, will speak at the next meeting Wed. afternoon at 4:30. Every young man in College should be present as Mr. Tously's subject will cover some practical business problems.

Y. W. C. A.

On Wednesday, Dec. 9, the Recognition meeting for new members of the Y. W. C. A. was held at the Dormitory. About twenty girls responded as their names were called and were received into the association. Matilda Thompson presided and in a few well chosen words extended the welcome of the association. There was a large attendance and it is hoped will continue to be so after the vacation.

Faculty Entertained.

Miss McCarty entertained the faculty at the Dormitory Monday, Dec. 7. Cards were enjoyed through out the evening and dainty refreshments were served towards the close of the evening.

Surprise Party.

About twenty of Miss Ella Heidner's college friends surprised her at her home Friday evening, Dec. 11. Various games were enjoyed through out the evening and candy and fruit were served. At a late hour the party broke up declaring their hostess a royal entertainer.

Girls' Athletic Association.

The Girls' Athletic Association met Wednesday, Dec. 9, and the following officers were elected for the year:
President—Bessie McKee.
Vice President—Louise Dole-shy.

Secretary—Mary May Miller.
Treasurer—Addie Stafford.
Custodian—Bessie McKee.

Pharmacy Banquet.

About thirty of the Pharmacy students gathered at Francis Hall Friday evening to partake of an elaborate spread. Toasts were given and a very enjoyable time spent by all.

Y. M. C. A.

Rev. Leonard of the First M. E. Church addressed the young men at the Y. M. C. A. meeting last Wednesday afternoon. He chose as his subject "Three rules for young men; don't lie, love your country, don't waste your time." He showed the practical effect of these rules and the many evils which a strict observance of them would eliminate, in a most inter-

esting manner, so that the half hour proved all too short.

Agricultural Club.

At the meeting of the Agricultural Club Saturday evening the first number on the program was a report on the stock judging contest at Chicago by C. H. Plath. He said that in the contest the competition between all of the Agricultural Colleges was keen and the exhibition of college spirit exceeded that sometime shown at football games. This was followed by an inspiring address by Professor Arvold on the dignity and importance of the farmer. Messrs. Plath and Chillberg then gave a musical number. "Poultry Management on the Farm," was the title of an instructive paper by Wm. Maxwell. It was decided, in the future, to hold the programs at 7:30 rather than at 8, as in the past.

Postponed.

The Athenians and Philomathians, according to action taken by the faculty, will not meet in their society rooms on Friday evening.

ANNUAL FOOT BALL DANCE A SUCCESS

On Saturday evening in the College armory occurred the annual football dance. Many of the foot ball boys put in their best efforts that this occasion should be remembered as one of the best social functions at the College during the year. In this they were certainly successful for everybody present enjoyed themselves and pronounced the evening a most pleasant one. About sixty couples were present and the foot ball boys seem well pleased with the returns from their dance. The money realized will be used for the purchasing of sweaters for the thirteen men that represented the College on the gridiron this season. While this is not enough to purchase the sweaters the balance will doubtless be raised soon so that the boys may appear in their sweaters.

SAMPLES OF FERTILIZER ADDED TO CHEM. MUSEUM

The samples of fertilizer from Armour & Co., which were mentioned sometime ago have now arrived and are on exhibition in the laboratory. There are fourteen samples in all, four of which are mixed as the fertilizer goes on the market, eight are of the various separate ingredients such as ground bone meal and ground refuse, while the remaining two are samples of ground dried blood. The ground blood is often used mixed with grain as food for hogs and poultry. All together the specimens make a very interesting exhibit and add greatly to the chemical museum.

A. C. MEN LAUNCH MINING COMPANY.

Heath, and Miller, are the Chief Promoters of New "Clear Creek Co."

It may be of interest to many of our readers to know that two of our former students, W. P. Heath and Lynn H. Miller, are two of the chief promoters of a mining proposition in Alaska. Last week under the laws of the State of Washington there was incorporated the Clear Creek Mining Co., with a capitalization of 300,000 dollars. Of this company J. M. Kerwood of Washington is President, W. P. Heath is Vice-President, and Lynn Miller is Secretary.

The intention is at present to sell enough stock this winter to put a hydraulic mining outfit upon the property next spring. Several of the prominent business men of Cass County are interested in this proposition and feel confident that they have the best mining proposition in Alaska.

The property is located 80 miles

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southeast of Mt. McKinley in the Yemtna Mining district. It consists of a strip of land lying three hundred feet on either side of Clear Creek for two and a quarter miles. The gold is found in the gravel along this water course which is very suitable for hydraulic mining.

Because the promoters of this proposition are well known to us its success will be watched with interest.

In the Dark.

Last Thursday evening the lights went out about 5 o'clock in all the College buildings, and as a result the basket ball players had the experience of dressing in the dark. The girls at the Dormitory have some novel tales to tell about eating supper by candle light.



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All those of the College circles were much pleased to hear last week that Professor Richards had decided to remain with the A. C. and not go to the Manitoba, A. C. which had given him an excellent offer.

At the Dormitory.

First girl:—Say, how do you dance the barn-dance?
Second girl:—Oh, just take three steps and kick, then jump around in a circle.

The Seniors made their initial appearance at chapel yesterday in their caps and gowns.

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FARGO, N. D.

Professor Slocum on "Water Filtration"

Discusses Problem of Vital Interest to Fargo Before Polytechnic Society.

FILTER NEEDED FOR FARGO

Favors Mechanical Filter Plant as Being More Nearly Adapted to Local Conditions.

Professor Slocum gave the first of a series of talks to be given before the Polytechnic Society on "Water Filtration." He took up the engineering phase of the work and Professor Beckwith will discuss the bacteriological side of the question at the next meeting. The talk was illustrated by several diagrams on the screen so that the subject was presented in a very clear manner. The talk was in part as follows:

"Four different slides have been prepared and will be shown on the screen during most of the talk. The first diagram was prepared from data collected by Mr. Fuertes who was a student of water filtration and is shown to bring out the difference between European and American cities in regard to sanitary conditions, especially water supplies.

"The slide shows the death rate per year due to typhoid fever alone per thousand people for the various sources of water supply. . . . Of course, the American cities derive water from less populated districts and hence have not the same need for filtered supplies. The death rate in cities using polluted waters would be practically the same in either country and would run as high as one hundred for one hundred thousand people. The need of filtration is quite apparent and the diagram shows what the future of water supplies of this country must be.

Types of Filters.

"On this slide it is undertaken to show a comparison between the Mechanical and Slow Sand Filters. The first filter to be used was in Chelsea, England, in 1829. The success of this filter made filtration of filters was entirely imper-

fect but at that time there was discovered a scientific basis of operation.

"The Mechanical filter derives its name from a certain mechanical apparatus which was used to stir the sand during the process of cleaning. The method of stirring the sand by means of revolving rakes is practically out of use at the present time, and this process would be more properly called rapid sand filtration.

"The cost of installation per million gallons capacity per day is \$12,000 to \$16,000 for the mechanical and \$25,000 to \$30,000 for the slow sand filter. The choice of a filter will depend on the circumstances which would affect the cost of installation and operation. The mechanical filter would be adapted to streams of irregular flow, so that for some streams mechanical filters would be better and for some the slow sand filter.

"The rates of filtration range in the neighborhood of 125 to 185 million gallons per day for the mechanical filter and for the slow sand filter from 3,000,000 to 3,500,000 gallons per day. The water in the mechanical filter lowers from 4.7 to 3.2 inches per minute, while in the slow sand filter it lowers from 0.08 to 0.093 inches per minutes, so that the water, especially in the slow sand filter, goes down very slowly. The time between cleanings will depend on the condition of the water as it enters the filters. The mechanical filter will run from six to twenty-four hours and the slow sand filter from seven to twenty-eight days between cleanings.

The time required for cleaning runs from four to fifteen minutes for the mechanical filter and for the slow sand filter depends on the area of the filter and the number of men employed to do the work. The amount of filtered water used for cleaning varies from 2 to 10 per cent for the mechanical filter and varies for the slow sand filter with the method of handling the sand. The interval between starting and full efficiency, that is the time to be run before the action is complete, is in the mechanical filter is more or less than twenty minutes and for the slow sand filter from eighteen to thirty-six hours. The bacteria removed by the mechanical filter when well operated ranges from ninety-seven to ninety-nine per cent and for

the slow sand filter from ninety-eight to ninety-nine per cent.

Operation of Filters.

"Every mechanical filter must be skillfully operated to be effective. A number of filters throughout the country do not have proper supervision and hence do not give the service they should. A mechanical filter is adapted to a stream with an irregular flow, while the slow sand filter should have a stream with a regular flow. The silt and scummings in the turbid water will be taken care of by means of coagulents which cause them to settle in the sedimentation basin used in connection with all mechanical filters. The coagulents used are iron sulphate, copper sulphate, and aluminum sulphate or some combination of these, with or without lime, depending on the condition of the water.

Filtration as Applied to Fargo.

"The amount of water used depends on the population. Since the filter must be built for future conditions, it is necessary to make an estimate of what the population will be at a certain future time. . . . Basing an equation for a curve on the census reports and projecting it into the future would indicate that there would be a population in 1920 of 26,000 and in 1930 about 40,000. This is, of course, assuming that the growth will continue at as high a rate as in the past.

"The next thing to determine is the number of gallons of water used per capita per day, and how that use is distributed for different periods of the year. The average per capita consumption was 107 for 1903; 96 in 1904; 89 in 1905, and 110 gallons per day in 1906. The maximum rate per capita in 1903 was 129 gallons per day, 120 for 1904, 109 for 1905 and 125 for 1906. In the highest month there are certain days which run higher than the average for the month. In September 1906 the maximum for any day was 133 per cent of the average for the need with a much more uniform consumption of water, and in that month 110 per cent was the relation of the maximum to the average. The diagram of hourly variations, made from data collected by Mr. Lynn Miller and myself, shows the rate of pumping at different times of the day. At about 5 o'clock in the afternoon is a high rate and as we advance the rate lowers until about 3 o'clock in the morning, when the lowest rate is reached, and it again rises to the highest rate at 10 to 11 o'clock in the morning. The average consumption was 115 gallons per capita per day. The minimum is 83 per cent of the average, or 95 gallons per capita per day. These figures would seem to indicate that there is a waste of water which could doubtless be reduced by the use of meters by which the consumers would have to pay for the water they used. The high rate through the night may be partly due to excessive leakage in the mains.

Filter for Fargo.

"This diagram presented is intended to show the course of the water through the filter and the different stages in the process rather than to show an economical design. The water will be pumped from a suction well to sedimentation basins, flowing from there to filters, then to the clear water well, and from there being taken by the pumps and forced through the mains to the consumers. The coagulant is introduced while the water is on the way to the sedimentation basin. The sedimentation basin is to hold the water for a certain period, depending on the condition of the water of the river, to allow the coagulant time to gather the small particles of silt and bacteria and settle with them to the bottom. The basin must be made so it can easily

be washed out or cleaned. The material that gathers in this basin would be flushed back to the river below the intake. . . . The rate of flow to the filter is regulated by the rate of filtration. The whole secret of success of filtration lies in the uniform rate of the operation of the filter. The rate of filtration is regulated by controllers, the best type of which is the weston.

"The usual scheme would be to have only filters enough for the consumption at the time for which the design was made. I have based this design on a population of 26,000 as it would be in 1920, requiring five filters to be in operation and one being left for use during repairs. The present consumption would take about three in operation to supply the city.

"The filters are 13x21 feet, having about 275 square feet of filter area. The two rows of filters would face the pipe gallery over which is the controlling floor. The washing and other work on the filters is done from this floor. On the operating floor would be placed the pumps to supply the water to the sedimentation basins, air compressor for the compressed air to be used in agitating the sand during washing, and a place for mixing and storing the coagulents.

"When it is desired to wash the filters the flow is shut off by means of a valve and another valve is opened which allows the water to drain down to the required level. The usual scheme is to turn on a current of compressed air, loosening the sand so the water can get through, and next turning on the filtered water, allowing it to pass upward, flowing through the same troughs that it came through in entering the filters, but is turned into the river. The air is sometimes not used, but in place of it a stronger current of water. There is some objection to the higher pressure because of the danger of throwing the finer sand to the top and thus disarranging the sand in the filter. During the process of washing the sand is so loose that a pole could be easily run to the bottom, but while filtering the sand is very compact.

"There should be a clear water reservoir to take care of the hourly variation in consumption and have a surplus for fire. The reservoir shown is twenty feet deep and one hundred feet in diameter. Four hours of fire consumption requiring 112,000 gallons storage is provided. This would supply fourteen streams in operation the full four hours.

"For her fullest growth Fargo should have a sufficient and reliable supply of water for all purposes. The agitation for a filtration plant is timely, and it is hoped that Fargo may in the near future have a filtration plant of which she may be justly proud."

The Athletic Association has a membership of about 20 per cent of the entire number of students enrolled. Counting in the girls' association it is found that about 25 per cent of our students take an active interest in athletics at the A. C.

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Concrete Specialists

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PERSONAL

Professor Ladd went to faculty meeting last week.

The Misses Thompson are enjoying a visit from their mother.

Miss Emma Hall was a guest of Ruth Heath at dinner last Thursday.

Professor Richards will spend Christmas in Minneapolis.

Miss Lucile Giles was a visitor at the College last week.

Burke Critchfield spent Sunday at his home.

Miss Irene Flewell was a pleasant visitor at the Dormitory Friday.

Elmer Dynes of Gardner visited his sister, Fern, on Friday and Saturday.

Bertha Paul was a pleasant visitor at the Dormitory last week.

Elizabeth and Bertha Viesting of Arthur are visiting their sister, Emily Viestings.

Mr. Tom Sampson, Erie, N. D., spent Thursday about the College with his son Robert.

Ruth says: "You don't know me. I have changed my name, but have not decided what it will be yet."

Some of the Dorm. girls enjoyed the Preceptress' visit to the Grand Wednesday evening fully as much as she did.

Professor Waldron was at Langdon Saturday laying out the grounds for the new sub-experiment station which is to be located there.

A number of the faculty were present at the banquet given last week in honor of the fiftieth birthday of President Weld of the Moorhead Normal School.

Keith McGuinn, one of our last year's engineering students, has returned to College from the West where he spent the summer with a surveying party at Washburn.

Rex Willard has sent the Spectrum some graphic accounts of a "bull fight" which he witnessed in Mexico. They will appear in our next issue.

Professor Richards has been receiving diamond catalogues and pills through the mail. Which is it, Professor, love or dyspepsia?

The question that has been perplexing several of the College people for the past few days is "How did Dr. Batt get that black eye?"

Mr. Thomas Mauns, who took his master's degree at this College and is now one of the staff at the Ohio Experiment Station, is sick with the typhoid fever.

Grace: "Excuse me if I put my arms around you."

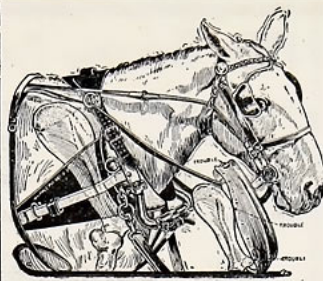
Fern: "Oh, I am used to having arms around me."

Peter Nordby was a College visitor Saturday. He will return to School next term and take up his work with the Junior class of which he is a member.

Mr. Tibert went to Langdon Saturday on business connected with the erection of the farm house on the Experiment Station at that place.

James A. Ulio, son of Major Ulio and Second Lieutenant of the Fourth Infantry of Vancouver, Wash., was a visitor at military inspection last week. He is off on a three months' leave of absence.

The party of students that spent the summer vacation examining N. P. land in the western part of the state had an informal banquet at the Metropole Cafe last Friday evening. The members of the party present were Messrs. Hughes, Ruzicka, Olson, Worst, Critchfield and Whitecomb.



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Afternoon Session, 2 to 5. Evening 7:30 to 10:30.

MUSIC EVENINGS BY THE RINK ORCHESTRA.

John Henderson, Farm Husbandry, '08, was a visitor at the College Friday. He expects to be back and take work in the Agricultural Department after the holidays. He will be welcomed by the members of the Band.

Mr. Herbinson, our instructor in Dairying last year, has been spending some time at the College the past few days. He has been taking a special course in dairying at the Minnesota Dairy School. He will have charge of the dairy instruction at this College during the winter term.



Dave Moore

A Communication.

Dear Friends:

I wish that all those intending to send me Christmas presents would notify me at least a week ahead of time and deliver them personally Christmas morning. In former years I have had a great deal of trouble in finding storage room for the large number of gifts received, and it would save me a great deal of trouble, worry, etc., if my friends would comply with the above request. As my garage is filled at the present time I do not see how I can accept gifts in the line of automobiles unless they should be some make I have not already on hand.

Wishing you a merry Christmas, I am, D. H. Moore.

P. S.—Do not forget the rattle for the baby this year.

"Why it is you call money dough?" Asked a fair maiden of her beau.

And grinning wide

The youth replied,

"I guess because I knead it so."

"It takes more than a mortar board cap, a frat pin, a bull dog pipe, a varsity suit, big enough in the trousers to make fourteen pairs, and rah, rah, rah, ziss, boom, ah tiger, to make a man."—Billy Sunday.—Ex.

Father (meaningly)—"Who is the laziest boy in school Tommy?"

Tommy—"I don't know pa."

Father—"I should think you would know. When all other are industriously studying, who is it sits idly in his seat and watches the rest, instead of working himself?"

Tommy—"The teacher."—Ex.

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Fargo, North Dakota,

BOLLEY TO CONVE

WITH SEED TESTERS

Responding to a call from the Bureau of Plant Industry, Professor Bolley will, during the last week in December, represent the College and Experiment Station at a meeting of men who have been conducting investigations relative to seed testing. It is probable that the chief topic that will come up for discussion will be the matter of uniform legislation upon seed testing, a matter that is of importance at this time when the desirability of laws of this nature is being brought to the attention of the legislative bodies of the various states. Many of the states already have laws upon this subject, all of more or less merit, and all with undesirable features.

At this meeting the drafting of a model bill will be undertaken. Professor Bolley, while in Washington, will gather all available information possible not only in order to put his department in line with the most advanced ideas, but also with a view of applying it to the revision of a bill that will be presented before the North Dakota state legislature this next winter.

Mr. Tibert now has the machinery in the wood shop installed and it is expected that it will be in running order by the first of next week. Four wood lathes and a combination rip and cut-off saw, are driven by a 5-horse power motor. Some benches and tools have also been added to the equipment.

As you hear it in the class.

"Were you speaking to me?"

"I didn't hear your question."

"I don't understand; what do you mean?"

"I can't see the board form here."

"I didn't study that far."

"Why!" in injured tone, "we didn't have that for today."

"That's as far as I got."

"I was absent yesterday."

"I know it, but I can't express it in words."

"Beg pardon, where's the place."

"Why, I studied the next chapter."

"It varies."

"Well—ah."

"You mean—a—"

"Oh, yes—er—why."—Ex.



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given us during the year, we are going to pre-
sent them and their friends absolutely free, one

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We have 500 of these regulation Springfield Rifles
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every rifle is guaranteed to be

In Perfect Working Order

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draw a bead as fine as a hair.

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A Shot Gun.

It shoots just as straight and hard
when used as a shot gun, and is
just the thing for birds and small

game. It shoots regulation 45 calibre scattered shot shells.

It is to your advantage to grasp this opportunity without
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guarantee them in every particular; well oiled and all metal
parts bright, and free from rust.

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H. Bachenheimer,

MOORHEAD,

MINN.

COLLEGIATE COURSE IN VETERINARY MED.

(Continued from Page 1.)

next three or four years probably
be increased to four or five.

This step is only another indica-
tion that the A. C. is growing and
enlarging its field of usefulness.
The successful launching of the
course will mean much to the A.
C. and everybody whether direct-
ly interested or not should boost
for the needed appropriations.

TURNED DOWN.

Exams. Will Come As Scheduled
but Pharmacists May Get
Off Friday.

At the faculty meeting last Fri-
day afternoon a petition request-
ing that the examinations be giv-
en upon Thursday and Friday of
this week rather than as schedul-
ed, which had received the signa-
tures of a large body of the stu-
dents was considered by the fac-
ulty and almost unanimously re-
jected. At the same time a coun-
ter petition which had received a
considerable number of signa-
tures was read. This petitioned
that the exams. be held at the
time scheduled in the catalogue.

As a result of the rejection of
the first petition the regular pro-
gram will be followed. In the
case of the Pharmacy students,

however, who were the prime
movers in the petitioning their
cause was considered just and
those of that course desiring will
be given special examinations at
the end of the week.

Many of the Pharmacists have
positions awaiting them in stores
where they are badly needed for
the holiday trade. This was the
reason of the favorable action of
the faculty in this case.

AT CONCORDIA.

Girls Make a Splendid Showing in
Practice Game Across
the River.

Last Thursday afternoon the A.
C. girls' basket ball team defeated
the Concordia girls' team to the
tune of 26 to 5. Although the
small quarters impeded the play,
our girls showed their superiori-
ty in every phase of the game. The
lineup for the A. C. was as fol-
lows: Louise Doleshy, right for-
ward; Elizabeth McKee, left for-
ward; Ella Heidner (capt.), cen-
ter; Addie Stafford, right guard;
and Tina Kerr, left guard. In the
last five minutes of the play Coach
Nemzek substituted Misses Miller
and Herron for Misses McKee and
Kerr.

The game was close and speedy
throughout, though the low ceiling
prohibited the long passes which
the A. C. girls are accustomed to
making. The girls are to be con-
gratulated on their showing and a
winning team is expected. The offi-
cials were Kent Darrow of the A.
C. and the Concordia coach.

FACULTY TRY TO PUT "KABOSH" ON DEBATE.

The faculty slumbered peaceful-
ly and their committee on public
programs read the Spectrum and
attended student literary meetings
while joint committees met and
arranged the intersociety debate.
Then the busy bug of unused
authority bit someone and they all



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ter seasons. Every desirable fashion and fabric of the day is on dis-
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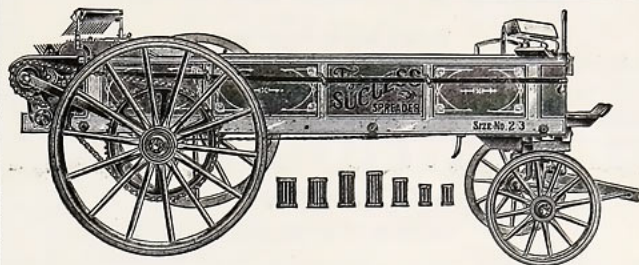
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Tuesday, Dec. 22—

10 o'clock classes 8-10.

11 o'clock classes 10-12.

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Registration begins:

Tuesday, Jan. 5—

Winter term begins.

Wednesday, Jan. 6—

Fee for late registration begins.

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TERM END VACATION—
Examinations.

Monday, Dec. 21—

8 o'clock classes 8-10.