

# The Minnesota Daily

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## Building of Ag Health Service To Start Dec. 1

**\$48,063 PWA Grant Received; Three-Story Structure Planned**

Construction of a \$110,000 student health service building on the Ag campus will get under way by December 1, the St. Paul architect and engineer firm of C. H. Johnston announced yesterday.

This week in Washington a \$48,063 PWA allotment for the building was approved.

Bids will be advertised for late in October. The building will be ready for use at the beginning of fall quarter in 1939, according to the architects. Construction time is set at 8 months.

The health service building will be located on Cleveland avenue near the athletic field and will face west. Face brick and cut stone trim are materials to be used on the exterior of the three-story structure. Ground dimensions will be 40 to 120 feet.

The new building will be similar to the student health building on the main campus. It will have 40 beds and complete modern hospital, X-ray and laboratory equipment, and occasional ceilings wherever necessary.

No expanded health service staff will be needed, the campus health service office said. Erection of the Ag student health building will mean expansion of the physical equipment of the department, but no additional health services will be offered to students.

## Excursionists Will Visit Three Twin City Companies

Three excursions—to Brown and Bigelow, St. Paul, Ives Ice Cream company and Betty Crocker's kitchen—will be made this weekend, according to the summer season recreation office.

The tour through the St. Paul printing company will start from the Seventeenth avenue entrance of the Administration building at 1:30 p.m. Although there is no charge for the excursion, tickets must be obtained at the summer season office before the excursion starts.

Only 15 tickets will be given out since it is impossible for larger parties to go through the Brown and Bigelow plant.

Tomorrow excursionists will visit the Ives Ice Cream factory at 128 University avenue southeast.

The tour leaves from the Seventeenth avenue entrance of the Administration building at 10 a.m. The party will start through the plant at 10:15 a.m.

Highlights of this trip will be the demonstrations of refrigeration, packing, delivering and other steps in making ice cream.

Monday's excursion to Betty Crocker's kitchen will also start from the Seventeenth avenue entrance of the Administration building at 10 a.m. Those who wish to go to the kitchen more directly should meet at the chamber of commerce building at Fourth avenue south and Fourth street at 10:30 a.m.

## Two Films Planned For Next Convocation

Two documentary films, "The Face of Britain" and "The River" will be shown during convocation hour in Northrop auditorium next week.

## Football Ticket Sales Approach 1937 Level

Football season ticket sales at present are running quite close to the volume recorded for the corresponding time last year, Leslie L. Schroeder, University ticket manager, said yesterday.

This report contrasts sharply with a statement released 10 days ago by the ticket department. On August 1 the cash volume of ticket sales was about one-half of that recorded the same date in 1937.

"The Homecoming game with Michigan probably will take all permanent seats in the stadium," Mr. Schroeder stated. "However, we may not find it necessary to build as many temporary bleachers."

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## Free Inter-City Phone Lines Asked—U. Would Save

Free inter-city telephone service in the Twin City Metropolitan area soon may become a reality.

The University would save approximately \$70 a month if the St. Paul toll were abolished, Wallace V. Bloomquist, assistant supervising engineer, revealed today.

Latest possibility of abolishing inter-city phone tolls came yesterday, when the recently established Telephone Rate Research bureau, incorporated, announced that it is now compiling data on which to file with the Minnesota Railroad and Warehouse commission a petition asking free phone service here.

At present, the University rents two direct lines for the benefit of St. Paul subscribers, who otherwise would have to pay 10 cents to call the Minneapolis campus.

At present four St. Paul telephone exchanges have unlimited free inter-city service.

Establishment of free inter-city service would permit all Minneapolis subscribers to telephone offices of the State of Minnesota and federal government agencies which are located in St. Paul or South St. Paul.

Metropolitan area subscribers east of the Mississippi river could also call direct federal offices in Minneapolis.

## WLB Forum Asks For Health Aids

The poor must be aided in "budgeting against illness" much as unemployment insurance now helps made during the WLB forum the worker budget against unemployment. This statement was made during the WLB forum discussion of the federal health program Wednesday evening over the University station.

Appearing on the program with Miss Lucy Lawson, WLB forum director who acted as interviewer, were Prof. Max Seham of the medical school, and Norman Moe of the state board of control.

Although "not prepared to discuss any definite health program," Prof. Seham urged that the doctor and layman agree on the facts regarding the health of the American people. He cited the present difficulty in getting sufficient medical care to all those who need attention.

## Husband Praises Swedish System; Discusses Education, Housing Co-ops

### Atom Smashing Made Simple

## Smasher Like Automobile

The Rockefeller foundation granted Dr. John T. Tate \$36,000 for biophysical research. Work is now nearing completion on a 4 million volt "atom smasher" and the following article is the sixth in a series of eight describing the subject of Dr. Tate's experiments.

By Crane Rosenbaum

Atom smashing was studied by University scientists long before the present atom smasher was conceived. Two atom smashers have already been built in the Physics building—one of them has been in use for more than a year, the other will be operating by Christmas.

Dr. John T. Tate has studied the atom for 12 years, and for the past 2 years has been concerned with the center of the atom, the "sun," around which revolve the planetary electrons, that seat of immense power which may guard the secret of what holds the universe together.

Too, the Physical building has been a center of study that sent atomic experts to other schools to carry on experiments. Most recent of these students was W. H. Wells, who left the University a year ago to direct erection of the pear-shaped Westinghouse atom smasher which was featured in a recent edition to Life.

Worked for Year

For more than a year Dr. Tate's co-worker, Prof. John H. Williams, and his assistants have been smashing atoms in a basement room in the Physics building. A part of the equipment used looks like nothing so much as an aluminum-colored trailer without wheels, not quite large enough for a poker game, surrounded by a wire fence.

"Most of our work is done at night because we won't be interrupted then and also because the voltages available then are more constant," said Professor Williams recently. "About 80 per cent of our time has been devoted to building the apparatus, 20 per cent in (Continued on Page 3)

## Stork, Herlitz Will Publish Books With U. Press

The University of Minnesota press will add two volumes to its Scandinavian bookshelf in the near future, it was announced this week by Margaret S. Harding, managing editor.

Contracts have been signed with Charles Wharton Stork of Philadelphia, leading translator of Swedish poetry, and with Nils Herlitz, professor of public law in the University of Stockholm, for the publication, respectively, of "Arcadia Borealis," a collection of the poetry of Erik Axel Karlfeldt, and "Government and Citizen in Sweden." The first will be published late in 1938, the Swedish tercentenary year, and the second in the spring of 1939.

Karlfeldt, distinguished lyric poet and Nobel Prize winner, who died in 1931, is known as "the Robert Frost of Sweden." His poems appeared in this country in anthologies and in magazines but never before in a collected edition. Stork has selected the best of Karlfeldt from that author's six volumes published in his lifetime and from a posthumous collection of 1934. The book will be illustrated with color reproductions of watercolor paintings of Dalecarlian scenes by Hilma Berglund, instructor in art education in the University of Minnesota and a specialist in Swedish art and handicrafts.

Herlitz toured this country last spring, lecturing in connection with the Swedish tercentenary celebration. He visited the University in April, and his itinerary also took him to Harvard and the Universities of Missouri and California. His "Government and Citizen in Sweden" deals with public administration from a new angle and covers topics of current interest such as civil liberties, government control in economic affairs, and social legislation.

## Bach, Wagner On Union Music Hour Today

The music hour in the Union from 12 noon to 1 p.m. today will be an all request program. It includes:

"Christ Lag in Hodesbanden," "Little Fugue in G Minor" and "Toccata and Fugue in D Minor" by Bach. "Liebenstod," by Wagner sung by Kirsten Flagstad, "Some Day He'll Come" by Puccini, "Danse Macabre" by Saint Saens and "Scheherazade" by Rimsky-Korsakoff.

The chamber music hour Monday will include "Concerto in D Major" for violin and orchestra played by Fritz Kreisler, violinist, and the London Philharmonic orchestra and "Leonore Overture No. 3" by Beethoven.

The symphony music hour Wednesday will include "Symphony No. 5 in C Minor" by Beethoven played by the London Philharmonic orchestra.

## Supervisor to Talk On Security Acts

Types of unemployment compensation laws in operation in England and the United States will be discussed at 7 p.m. today over station WLB.

About six persons are investigating the general question of application of unemployment compensation legislation to Minnesota. They are working under direction of Phillip J. Schlessinger, supervisor of the WPA project in political science.

During the 15-minute program to be broadcast this evening, William Sener of the WLB staff will interview Mr. Schlessinger regarding American and British unemployment compensation laws.

Next Wednesday at 7 p.m., during the third broadcast of the series, Prof. Asher N. Christensen of the political science department will be interviewed

## Lectures Says Swedes Put 'Human Values First'; Shows Pictures

"Sweden is a country where human values are put first and the people don't lose by it," said Wilfrid Laurier Husband in his convocation address, "Sweden, Where Human Values Count," yesterday.

The former Minneapolis newspaperman who spent 2 years studying conditions in Sweden illustrated his lecture with colored movies showing many phases of Swedish life.

"The Swedish people have a realistic approach to democracy. The national government is built on good state government which is in turn built on good local government which is impossible until each citizen does his duty," he said.

Pictures Shown

The speaker showed pictures of active adult education study groups and explained that these people believed that it was necessary to coordinate adult education with the education of the young if progress was to be made. Recognition of the continually changing world about them is a large factor in modern Swedish education.

As a result of their system, illiteracy is practically unknown. "A teacher in Sweden has the prestige of an American millionaire. Education is regarded reverently and great emphasis is placed on adult education."

"There are no anti-trust laws in Sweden," Mr. Husband said. "They believe that those laws merely encourage big business to think up new ways of getting around the law. The Swedish monopolies have been curbed by consumer cooperatives which have reduced the prices of monopoly-produced commodities."

Many of the pictures Mr. Husband showed were of the great industrial plants. Employees were shown testing light bulbs in the Luma plant, cooperative electric light manufacturing concern which has reduced the cost of light bulbs in Sweden from 37 cents to 20 cents each.

Housing Projects Explained

Great housing projects that have been undertaken by the government were pictured in the movies, giving both inside and outside views of giant apartment buildings which have been built to provide living quarters for the workers at low cost.

The lowest income groups in Stockholm have been provided with small but attractive homes in the suburbs of the city and are allowed to pay for part of the construction with labor which they themselves put on the homes. The remainder of the cost of the homes is spread out over a period of 25 years in payments which average about \$12.50 a month.

"Sweden," Mr. Husband pointed out, "has stayed out of war for 124 years. They have compulsory military training but maintain only a small standing army and navy. The per capita expenditure for armaments is less than half of that in this country. Heaven only knows what we would spend if we were separated from Nazi Germany by only a small channel."

Mr. Husband stressed throughout his lecture the seriousness with which the Swedes take adult education. "As a result, corruption in government is unknown. The favorite subjects in the more than 10,000 study circles are, first, (Continued on Page 3)



## Oil Sludge Formations Troubles Modern Science

By Crane Rosenbaum

Joe College and his rattling wisecrack-plastered jalope get along together pretty well. But there are times—

Why, for instance, did his oil freeze up last night? Joe's car, class of '29, was parked right next to a last year's model that didn't freeze—yet the temperature was the same for both of them.

It's to answer such questions that Profs. B. J. Robertson and A. R. Ford are prying into the innards of cars. Cars freeze up, they know, because "sludge" has formed in the oil. Oil filters are supposed to prevent sludge from freezing—but do they? That's the problem Professors Robertson and Ford are working on now. But first they had to know just how sludge is formed.

### Sludge Multiplies

The two men found that for 30 hours of the test, no sludge appeared but in the next 15 the oil was filled with it. The stuff was like guinea pigs—once it got started it increased a thousandfold over night.

Now, old as it may seem, this fact and many others about this sludge weren't known. But first, what is sludge, and why does it cause trouble?

Sludge is oxidized oil—oil which has been partially burned by contact with hot metal surfaces. It causes trouble for two reasons. First, it's thick and prevents the oil from flowing freely. And second, it picks up dirt and water.

"Oil and water don't mix." True enough, and neither will oil and dirt—unless the oil is partially burned.

If you mix hydrogen and oxygen in the right proportions and then supply energy in the form of a lighted match, there will be an explosion and the two will unite to form water. All of these conditions are present in the cylinder—oxygen in the air, hydrogen in the gasoline, and a flame from the spark plug. If you burn a gallon of gas, scientists have found, you produce a gallon of water!

This water, in the form of steam, sneaks into the oil; if the oil is clean it sinks to the bottom and causes little trouble. But if sludge is present, the water combines with it, forming a salad-dressing-like substance that freezes and causes trouble.

Professor Robertson knew that an ordinary engine would be far too slow for his studies. Besides, he was interested only in the oil. An engine would burn gas, waste money, and it couldn't be accurately controlled. So he put the oil into a tank, heated it and passed air through it, thus oxidizing it and creating sludge. At any time he wished, he could introduce water, dirt or sludge into the tank. Sludge is odd stuff, he found. It takes a long time for any to form; but once a little bit forms, it multiplies very rapidly.

### Ventilated Crankcase

What to do about it? For one thing, sludge doesn't seem to cause a great deal of trouble until some water comes in—so you can prevent water from reaching the oil by ventilating the crankcase.

Filters, too, may help. Right now scientists don't know. And when they find out? "It's our job to get the basic facts," says Professor Robertson. "After we've done that it's up to industry to use them, to put these principles into practice."

## Pepinsky to Talk On Chamber Music

As another in his series of lectures on music and orchestral accompaniment, Abe Pepinsky, associate professor of music, will discuss "The Development of Chamber Music" at 2 p.m. Monday in 150 Physics building.

Following this, Professor Pepinsky will direct the collegium musicum in numbers to illustrate his lecture.

## Atom Smashing Made Simple

(Continued from Page 1)

making observations and about 10 per cent in writing up the results."

The most convenient explanation of the molecule has been a sort of tinkertoy arrangement of atoms, Dr. Tate has been concerned with knocking one of these atoms off the molecule.

"Image that the molecule is a crowd of people who have joined hands to form a circle," said Professor Williams. "Dr. Tate is driving along slowly—that is, he is using a low-speed electron—and trying to knock one of those people in the circle out of it."

### New Smasher Stronger

"The work that will be done now, with the new atom smasher is to drive a much faster car into this same group and by hitting one of the persons transform him into something else; say from Indian into a Negro."

J. William Buchta, associate professor of physics, built a small Vandegriff machine about a year ago, although he has not yet operated it. He hopes to have it producing artificial radioactives by Christmas.

"Now it turns out that this machine is a working model of the one that Dr. Tate will build," said Professor Buchta. "I'll be pleased if I get half a million volts out of it—and very delighted if the voltage reaches 700,000. It isn't like building an automobile, you know; atom-smashing is still in the pioneer stage and we can't predict such things exactly."

A good part of an atom-smasher's life is just like that of any mechanic, Professor Buchta explained. This summer he worked till 10 p.m. in a machine shop making parts for his atom smasher and recently he's been turning out bearings and other parts.

### Others Interested

Although the work of Professors Buchta and Williams is the kind which Dr. Tate will pursue under the Rockefeller foundation's grant, many other University scientists have been experimenting in an effort to find just how atoms and molecules are put together.

Prof. Joseph Valasek of the physics department has been observing atoms by studying the spectra of X-rays given off by atoms in chemical combination.

Prof. George Glockler of the School of Chemistry, by experimenting with simple molecules, is trying to collect a mass of information from which general laws concerning the way atoms are held together in the molecule may be drawn. To do this he has used the "Raman spectra," a method of obtaining a light so strong that the radiation of molecules becomes visible and can be photographed in only a few minutes.

Dr. Tate, to whom the Rockefeller foundation gave the grant for atomic research, was praised last year for his work with the atom by Karl T. Compton, retiring president of the American Association for the Advancement of Science, who declared:

## Ticket Sales Near 1937 Level

(Continued from Page 1)

ers as for the Notre Dame game last year.

Mr. Schroeder revealed that the heaviest demand for single game tickets focuses on the Homecoming game. In second place are the Nebraska and Washington games, both having equal ticket demand. The Purdue-Gopher game is selling more advance single admissions than the Iowa game.

Notre Dame, Northwestern and Wisconsin—in this order—are the most popular out-of-town games with the fans.

Already 3,000 Cornhusker rooters have planned to journey to Minneapolis for the Nebraska game.

Although all of the 1938 football games will be major contests for the Golden Gophers with no "breathers," Mr. Schroeder did not think that there will be as many attendance peaks as last year.

## Husband Praises Swedish System

(Continued from Page 1)

cal government; second, political science; third, economics; and fourth, parliamentary procedure."

### Costumes Exhibited

Before Mr. Husband began his talk, Mrs. Husband appeared in a colorful Swedish peasant costume of the kind still worn on Sundays and holidays in that country. She explained that each village had a distinctive costume which identified its citizens. Mrs. Husband's costume consisted of a white lace cap, peasant dress with a bright red and black vertically striped apron, bright red wool hose and buckled shoes.

Wilfrid Laurier Husband is a former Minneapolis newspaperman who gave up his position to go to Sweden and study social and economic conditions. He is a graduate of the University of Kansas and also has worked on newspapers in Los Angeles and New York City.

## Third Social Evening Will Be Held Friday

The third social evening of the second summer session will be open to summer session students from 8:30 to 11:30 p.m. Friday in the Union ballroom and game rooms. Entertainment will consist of dancing in the ballroom and ping pong and card playing in the game rooms.

Admission is free to summer session students upon presentation of a receipted fee statement.

"Much of the final checking up on the structure of the atom, the basic problem underlying all physical science has been done at three places—Princeton, the Bureau of Standards at Washington, D. C., and Tate's group at Minnesota." Of these three, Minnesota can claim to have influenced two, since the head of this type of research at Princeton, Walter Blakeney, is a former student of Dr. Tate's.

Next article: Why are men interested in smashing the atom?

## Spoils Nature's Filter System Twin Cities 'Killer' Smoke

Minneapolis have brown colored lungs while Eskimos have more healthy pink ones.

Charles F. Shoop, professor of steam engineering made this discovery in a study of the amount and effect of soot and dust in Minneapolis, the results of which he announced recently.

By catching soot and dust in special containers, Professor Shoop weighed the contents and computed the soot fall. The average fall a year per square mile in Minneapolis is 540 tons, this soot would cover 15 square miles with two coats.

### Kills Vegetation

More than 5 billion cubic feet of stack gases pour from Minneapolis factories and buildings during an average day, the study revealed. Because soot is from 2 to 3 per cent sulfuric acid it often kills vegetation and it is possible for the soil to become so acid that nothing would grow in it.

"Nature did not intend that man should breathe in the products of complete or incomplete combustion," professor Shoop said.

### Need Smokeless Fuel

"Although nature has provided a wonderful system for filtering the air that goes into the lungs, it cannot completely do so when the atmosphere contains an excess of the products of incomplete combustion. By the use of smokeless fuels and correctly-set furnaces this situation can be much improved."

Minneapolis ranks eighteenth in a list of 23 cities according to the amount of dust and soot in the air, Professor Shoop said. By replacing soft and smoky coal with high temperature coke or natural gas, or by treating the smoke after its formation Minneapolis could eliminate most of its smoke problem, he said.

## Williams to Discuss Atom Smashing

John H. Williams, associate professor of physics, will discuss "Modern Alchemy and Atom Smashing" at 3 p.m. today in 150 Physics building.

Professor Williams is a member of the crew of University scientists who are working with John T. Tate, dean of Arts college and noted physicist, on the new "atom smasher" just behind the Physics building. Dr. Tate was granted \$36,000 from the Rockefeller foundation for this biographical research.

The lecture today will be illustrated with slides.

## Carlson Will Give Illustrated Lecture

William S. Carlson, assistant professor of education will lecture on "Greenland, the Country and Its People" at 3 p.m. Monday in Burton hall auditorium.

The lecture will be illustrated.

## Brain Urges Tennis Entrants to Finish Matches

Entrants in the second summer session tennis tournament are urged to complete their second round matches. According to Robert Brain, tennis coach, only two persons have played off their second matches which are to be completed by August 13.

The second session golf tournament has been cancelled because only one person signed up.

## Hoffman Will Appear In Character Portraits

Frances Hoffman, founder and director of the Children's theatre of Duluth, will appear in a series of character portraits at 8 p.m. Wednesday in the Music auditorium.

She will appear in costumed roles from older drama as well as delineations from the contemporary theatre.

## 'Carnival in Flanders' Will Be Shown Here

The feature film, "Carnival in Flanders" will be shown in Northrop auditorium at 8 p.m. Tuesday.

The setting of the film is in sixteenth century Flanders. When the male administration of a small town in Flanders collapses during an invasion, the women use their ingenuity to save their homes.

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