

MINNESOTA CHATS

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NO. 1

President Tells Problems Facing New Day World

Intellectual Freedom, and of Speech, Assembly, Press Called Imperative

NEW VALUE TRAINING

Believes Devotion to Basic Scholarship Will Be Most Fruitful Policy

Unless Democracy is willing to spend generously for the training of its own leadership it is doomed, both as a matter of theory and as a form of political control, Dr. L. D. Coffman, president of the University of Minnesota told the assembly of many thousands which attended commencement in June.

Declaring that it is generally assumed that government will maintain an increased control over the processes of gaining wealth, and that the accumulation of vast fortunes will be less easy in the future than it has been, Dr. Coffman said that these controls, started from wholesome and necessary motives and the need of curbing individualism, can be carried too far. They should not be permitted to bring about a lower standard of living, he said. Colleges and universities, libraries, museums and charitable enterprises will find it harder to obtain gifts if fortunes are levelled off, and educational institutions will have to depend increasingly on tuition fees.

He praised the federal government's policy of helping young men and women to go to college who otherwise would be unable to attend.

"A hasty survey made in one of the midwestern states showed that a majority of last year's high school graduates were anxious to go forward with their schooling; the same was true of the graduates of two years ago; a smaller percentage of those of three years ago were ambitious to continue their education; and almost none of those of four years ago cared to go to school again. Apparently, in four years time, neglected and unemployed youth became resigned to the hopelessness of the situation.

Protect Right to Education

"It has taken time," he continued, "for us to understand that economic recovery will be fruitless if we destroy the educational birthright of the children while we are achieving it. The sentiment is now almost universal that the education of children cannot be neglected unless society is to pay a heavy penalty for its neglect fifteen or twenty years from now. Political leaders, too, have realized that whatever there may be of democracy in the new social order can be preserved and advanced only as democracy provides sound education for the next generation.

"In this situation the responsibility of higher education will not be confined to youth; it will be concerned with millions of adult citizens who have now suddenly come into possession of an enormous increase of free time. To be sure the shortening of hours of labor has been going on for generations. Invention forced it. Now, however, it is speeded up by government action. The codes prescribe definite schedules of hours. Workers who have been cast out upon their own resources are at a loss to make the adjustments necessary to use their free time profitably. Whether this extra human time shall become an opportunity to advance civilization or whether it will become a menace to social progress is a matter of the gravest importance.

"Our sociologists have told us, in the past, that every time the curve of leisure has risen there has been a corresponding increase in the curve of crime. They have also declared that methodical labor has been the chief substitute

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Hurrying to the First Convocation of the Year



Freshmen are the special audience sought in the first general gathering of the year at Minnesota. Here they can be seen entering Northrop Auditorium, together with a group of band members.

E. B. Pierce, Alumni Secretary, Has Served 'U' for Thirty Years

Was Successful Star Athlete, Registrar, and Organizer of Present Alumni Groups

No matter how much an alumnus has forgotten about the University of Minnesota, it's a cinch that he will remember one name "E. B." For "E. B." is E. B. Pierce, secretary of the Alumni Association, who means more to past graduates of the state institution than any other campus personage.

July 1934 marks the end of 30 years of official service to the University by "E. B." But his record of unofficial service runs back even beyond that.

"Way back in 1901 and 1901, long before today," undergraduates were born, a flow intimately called "E. B." was putting Minnesota on the athletic map. As a forward on the basketball team, he was finding the loop for one of Dr. Cooke's famed aggregations. As a track man, he was building up fine records in the pole vault.

Pierce was born in Dakota county just a block outside the city limits of St. Paul. He attended the Staples rural school, which recently celebrated its 75th anniversary, and went on there to Mechanic Arts high school in St. Paul.

But in those days, rather few people thought of continuing their education beyond the high school but, luckily, E. B. had a sister who knew about the University. She knew that Pierce was interested in teaching and suggested that he go to Mankato Normal for a year, and then enroll for a university education.

In the fall of 1900, a young man stepped into the armory as a contestant in the All-University athletic contest. He stepped off the floor the winner of the pole vault and several other track events. At the end of the year, he was among the five high point leaders in athletic participation, and the name "E. B. Pierce" was engraved on a shield of merit which now hangs in the Minnesota Union.

A Star in Basketball
In those days interclass basketball was played instead of interfraternity basketball. Pierce was a member of the

more squad of 1901-02, which swept through its competition easily. On the nucleus of Pierce, Ray Varco, Hugh Leach, and Dick Collins, Dr. L. J. Cooke built his varsity basketball team.

The aggregation turned out to be one of Dr. Cooke's finest. In the winter of 1903-04, the boys toured the Eastern seaboard playing the outstanding teams of that section, and returned undefeated in intercollegiate competition.

"E. B." was forced to leave the university after his sophomore year because of the lack of funds, but he returned to graduate with the class of '04. In the meantime, he had been teaching manual training and coaching athletics at Mankato high school.

Pierce had made a friend in E. B. Johnson, then registrar of

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Federal Relief Workers Will Be Trained at 'U'

Designated as one of the official training schools for graduate social workers, the University of Minnesota will train this year from 80 to 100 students from the northwest who will have their college expenses paid by the United States government. They will take the special courses in the department of sociology that were started last year under Professor Gertrude Vaile to train social workers for the emergency. Each group will remain in the university for two quarters. Some who began during the first summer session will complete their work in January.

The special students in sociology will become field workers for the Federal Emergency Relief Administration and for the State Emergency Relief Administrations in Minnesota, North and South Dakota, Montana, Iowa and Nebraska, from which states they will be drawn. They will be employed as county public welfare workers for the most part, but also in cities and towns where they are needed.

According to Miss Vaile there has been a shortage in trained social workers from the beginning of the usual pressure placed upon relief agencies by the depression.

Largest Science Body to Meet At Minnesota

American Association for Advancement of Science to Be in Minneapolis in June

The summer meeting of the American Association for the Advancement of Science, in Minneapolis and on the university campus next year, probably will be held the last week of June. A committee representing the University of Minnesota and the Civic and Commerce Association decided to recommend that date when it met on the campus recently with Dr. Henry B. Ward of the University of Illinois, permanent secretary of the Triple A-S.

Dr. E. A. Meyarding, president of the Minnesota State Medical Society told the other members of the committee that he hoped to arrange for the annual meeting of his organization at the same time that the Association for the Advancement of Science met. Dr. S. C. Lind, director of the School of Chemistry at the University said there was a likelihood that the Mid-West Section of the American Chemical Society might be brought to the Twin

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President L. D. Coffman

Sixty-five Years Since 'U' Began Service to State

First Classes on College Level Were Taught in Fall of 1869

STUDIES BEGIN OCT. 1

Current Year Will Be Little Changed from Last—Aid for Some Students Ready

A decade younger than the state itself, which has just finished celebrating its seventy-fifth anniversary, the University of Minnesota began the sixty-sixth year of its life of service when classes reopened for the fall quarter on October 1.

As an institution of college ranking, the university first opened its doors in the fall of 1869, eighteen years after it was created by law in 1851. The intervention of the Civil War deferred the actual beginning of collegiate instruction during the turbulent decade of the sixties.

No particular innovations are planned for the coming year, and the institution will continue to operate with due regard to the general economic situation, which has cut back its support to the figures of a decade ago, when enrollment was two-thirds of what it is today. Salary cuts will remain in force. A considerable number of faculty members will be absent during the year, many of them on emergency government service, or semi-governmental duties, of various types. The larger number of these are from the College of Agriculture, but others have been drawn from such departments as economics, political science, and education.

One new building, the second unit of Pioneer Hall, men's residence building, has been completed in time for the opening of the fall quarter. A second, the Indoor Sports Building, will be finished by about Christmas. Both of these buildings were put up with assistance from the Federal Public Works Administration, and were erected at this time partly because it would help give employment in the construction industries, but also because they were much needed. A roof house, with offices and quarters for convalescents, has been built on top of the Students Health Service building, also with PWA assistance.

Registration and other preparatory steps were conducted during the week of September 24 to 28, with freshman registration on the first two days and the other activities of freshman week occupying the remaining days for members of the entering classes.

The opening football game, that with North Dakota State College of Fargo, was played in Memorial Stadium on Saturday, September 29. Minnesota will meet Nebraska in the Stadium October 6th.

Approximately 1,000 students will be enabled to attend the university through the aid of funds supplied by the Federal Emergency Relief Administration, supplemented by state relief funds. These will be students who could not go to college without this financial assistance. On federal relief funds there will be an upper limit of \$20 per month and a lower limit of \$10. The money will be obtained by working, the rate of payment to be not less than thirty cents an hour. Students will be employed on an endless number of different kinds of tasks about the main and farm campuses.

State relief funds will go only to Minnesota students, of course, but federal relief can be given to students resident outside Minnesota, and to graduate students. An allotment of relief students at each of the sub-collegiate schools of agriculture also will be arranged.

Advance indications are that the general enrollment at the university also

U. S. International Trade Policies Directly Important to Farmer

Dr. Jesness Says That If Agriculture Sinks to Level of 'Peasantry' City Dwellers Will Follow

A new tariff policy arrived at by conferences in which those who benefit from protection, those dependent upon export outlets, and the consumer, are all represented would seem to be an ideal for the consideration of the United States, Professor O. B. Jesness, head of the department of agricultural economics, said in a recent lecture on the University of Minnesota campus.

Throughout his address he emphasized the fact that America need not hope to sell considerable quantities of goods overseas, nor to receive appreciable payments on debts owed to this country, until tariff changes and trade agreements admit more foreign goods than have been permitted to enter the United States in recent years.

"An important part of the difficulties of American agriculture today arises from the falling off in markets," he said by way of summary. "The falling off in domestic markets results from the present depression and restoration of those markets is dependent upon recovery and the resumption of industrial activity. That program is outside our field of discussion. Another important loss in farm outlets, however, is the sharp decline in exports due to the world-wide trend toward national self-sufficiency. International trade is essentially a matter of barter. If we do not accept imports, we need not expect to export. For that reason American agriculture is vitally concerned in our own foreign policy. This is especially true of the corn and hog producers, the wheat growers, and the cotton and tobacco farmers. It will cost us something to regain lost markets. But it will also cost us something if we lose them permanently. In the latter event we must curtail agricultural output drastically and at a heavy cost which will fall not only upon the farmers concerned but upon our people generally.

"We therefore need to face facts frankly and to determine our policy for the future of international trade in such a way that greatest benefits at the lowest cost will be obtained. Foreign trade can not be recovered without a willingness to make adjustments. The danger is that we shall fail to make needed adjustments because the problem is not understood clearly. For this reason we should have general consideration of it in order that public opinion may be based on reasoning rather than on prejudice."

Elsewhere he said:

Export Versus Curtailment
 "The alternative to recovery of export outlets for the products of the farm is a drastic curtailment of agricultural output. This must come either from reducing the number of farms and farmers or from dividing up the needed output among the present farms. In the former case some other outlets must be found for the excess farmers—not to mention the problem of what to do with the excess land in cultivation. What is to become of these farmers? It is true that the population trend customarily has been cityward, but it is also true that the employment outlook for the next few years is not sufficiently rosy to justify hope of any extended shift of this kind. If the smaller output is to be provided by the present farmers there will be less product and lower returns to go to each. The result of this can be only one, namely, a reduction in income and consequently in living standards.

"Let no one assume that this will affect only certain groups of farmers. If the land output must be decreased, hog production in the corn belt will have to decrease. If we give up permanently our foreign wheat outlets, certain sections will have to curtail on wheat. The same is true of cotton, rice, and tobacco. Will the corn belt farmer merely reduce his hog production? No, he will endeavor to shift to other enterprises. The same is true of other farmers. This process of shifting is the leveling device which will spread the effects of the adjustment to all agriculture.

The 'Peasantry' Problem
 "The 'peasantry' problem here is

Former Athletes Find Employment

LeRoy Timm, former University of Minnesota football and baseball star, has been appointed Athletic Trainer and assistant in Intramural Athletics at Iowa State College, Ames, Iowa. Timm graduated from the University in 1931 with a major in Physical Education and Athletic Coaching. He then took a year of training at the National Recreation School in New York City while directing physical activities at a settlement house. Following that Mr. Timm took graduate work in physical education at New York University and received his Master's degree in 1933. During the past year he has been director of a C. C. C. camp in Minnesota. Before entering the University, Timm attended Arlington High School, where he played football, basketball, baseball and participated in track. Fred LaRoque, who graduated this spring from the University teacher training course in Physical Education and Athletic Coaching, has been appointed director of recreation for the Indian Agency at Sisseton, South Dakota. LaRoque was a varsity track star for three years. He came to the University after graduating from Wolf Point High School in Montana.

Dr. Raphael Zon, director of the Lake States Forest Experiment Station, with offices at University Farm, is now serving as associate director of the national "shelter belt" project, under which it is proposed to plant a broad area, reaching from the Canadian line into Oklahoma, and trees for the sake of their value as windbreaks and possibly in other climatological respects. He will give special attention to the details of raising the nursery stock and planting the young trees.

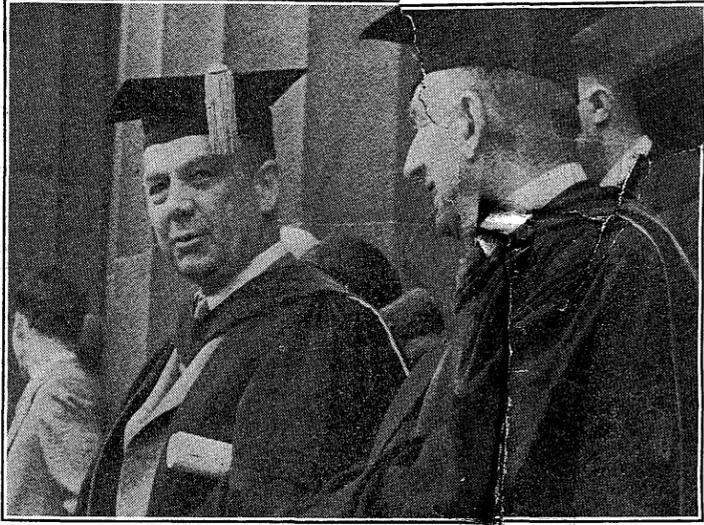
country with mobile population and capital, adjustments between agriculture and industry soon take place. There has been a lot of talk about the dangers of 'peasantry' on American farms. What seems to have been overlooked is that if a condition popularly described as peasantry comes to pass in American agriculture, the mass of industrial and urban workers will come to occupy a position analogous to that of peasant farmers. If the adjustment must be made, the effects will spread over all the land and all the people.

"If we are to take land out of production through reducing the amount included in farms, land values will inescapably feel the effects. Or, if we are to keep all of the land in farm use but so operate it that returns will be less, land values will be lower than they otherwise would be. Considerable farm land is owned by persons other than the farm operator. Investors in farm mortgages and farm mortgage bonds have an interest in land values because the latter affect their security. I mention this merely as further suggestion of the far-reaching concern in the problem.

"Mind you, I am not telling you what your decision should be in the matter. What I am trying to say is that there are certain facts which need to be faced in arriving at a decision. We are prone to look upon the costs of recovering world markets as being so great that such a procedure is out of the question. In so doing we often overlook the costs which we shall have to bear if we do not recover those markets. The latter costs are greater than many seem to realize. Unless their real magnitude is appreciated our policies are likely to be short-sighted.

"Secretary Wallace found a very intriguing title for his pamphlet, 'America Must Choose.' A choice is inevitable. Will she consider fully the costs involved in making a choice or will it be a choice based upon fallacious belief and reasoning? Too much of our international policy of the past has been born of mistaken ideas and of a failure to see the consequences as a whole. Too often it has been fought out in terms of demagoguery. This should not be the case, for in a field as involved as this, calm reasoning and thinking are essential."

Seem Pleased at the Prospect



President Coffman is shown chatting with Fred B. Snyder, chairman of the Board of Regents.

Seven Music Courses On Night Schedule

A group of seven courses in various types of music will be offered by the General Extension Division of the University of Minnesota as part of its fall schedule of evening classes beginning October 1.

Rupert Sircom, organist and choir director of Westminster Presbyterian church will teach a course in church music that will meet in the Music building on the campus Tuesday evenings at 8 p. m. The place of music in worship, the qualities religious music should have and the use of different instruments and choral groups will be considered.

Two courses in harmony will be taught by Miss Mary E. Malcolm, and there also will be an introduction to music course, in which the instructor will be Professor Donald Ferguson. This will be a course in historical appreciation. Professor Ferguson also will repeat his course in Bach, Beethoven, Wagner and Brahms, which has been popular in former years. This will be a critical study of the master works of these four great composers.

Extension registrations will be accepted this year in the University Symphony orchestra for those who are qualified. This organization is also open to day students and members of the faculty. Professor Abe Pepinsky is its director. Professor Pepinsky also will teach a course in ensemble, open to players of the piano, violin, or of wood-wind instruments suitable for chamber music. A third offering by Professor Pepinsky will be called, "Form and analysis." It will concern itself with the architecture of music in its many forms, presented from a logical basis, correlated with the various epochs in musical history.

Bursar Is Champ Fisherman
 Conrad Seitz, bursar of the university, has been declared fishing champion of the campus following recent exploits at Lake of the Woods. Seitz landed a thirty-pound muskellonge which he says he hooked during "the last minute of the last day's fishing." Hooking the fish prolonged the last minute, but after about twenty-five minutes overtime the university man was declared the victor and all voted that he was smarter than the muskellonge. Last year, also, Mr. Seitz was the one who proudly brought in a musky, but the 1933 capture was only a puny fellow of some twenty-three pounds. Interviewed concerning his recommendations for success he said, "I firmly believe that perseverance had as much to do with it as intellect." For several days the campus was agog.

Rockwell Made State Commissioner
 Dr. John G. Rockwell, who last year was a member of the College of Education faculty is the newly appointed state commissioner of education for Minnesota. He succeeds E. M. Phillips of St. Paul, who served temporarily following the death of Commissioner James M. McConnell. Dr. Rockwell, a Nebraskan, is a graduate of Stanford University and took his graduate work at the University of Chicago. During the war he served overseas with the Ninety-first division. He is 42 years old.

Pierce Job For Thirty Years

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The University. One day, Mr. Johnson called him into his office. He offered a young man a position in his department with a possible chance to become registrar when he resigned. In 1905, Johnson resigned and "E. B." succeeded him. The University was growing, and for 25 years he eagerly watched and encouraged this development.

At the request of President Burton, Pierce was appointed in 1920 to the position of Field Secretary of the University. At the same time, the position of Alumni Secretary was combined with the Field Secretary's post. In this capacity, Mr. Pierce is still serving.

The University does not want to lose contact with its alumni. And it is "E. B.'s" job to see that the alumnus does not lose his contact with the university. On coming into office he saw immediately that there must be organizations of alumni to keep the interest of graduates running high.

Forms Alumni Units
 He toured the state and even the country setting up regional alumni groups. Now once a year, these groups hold a meeting at a point accessible to many. They reminisce, laugh, and chat about the way they lived in school, and discuss the needs of the "U." The Alumni Association also publishes the "Alumni Weekly" which helps to keep graduates informed on campus life of today. The present editor is William Gibson, who works under Pierce's direction.

Echoes of the time when the University of Minnesota was half of its present size and centered about the oak and the "old" library building, now called Burton Hall, were recalled by the recent death of Cass Gilbert, a leading American architect, designer of the Minnesota State Capitol, who was engaged to plan and campus design for the university when it was seen that a vastly increased enrollment was inevitable. The present mall, lawn, stretching from Northrop Memorial Auditorium to Washington avenue, and flanked on either side by rows of buildings, was part of his plan, as was the arrangement of the secondary rows of buildings, such as the engineering group to the east and the law and law buildings to the west. The lines laid down by Gilbert are still followed in the institution's building plans.

Professor Trace E. Reed, formerly assistant dean of the Law School at Dalhousie University, Halifax, N. S., has been appointed to the faculty of the University of Minnesota Law School, to fill the chair vacated by the retirement of Professor James Paige. Professor Reed is a World war veteran, having enlisted at the age of sixteen. He has held a number of scholarships, including the Pugsley scholarship at Harvard, where he has also held law research fellowships. As a result of his studies there he has written a book, "Recognition of Foreign Judgments in the British Commonwealth," which was published by the Harvard University Press.

Speaker Sees No Important Threat To Our Democracy

Lecturer on International Affairs Warns of Taking Blessings Too Lightly

No serious threat to democracy as the American form of government was seen by Denis W. Brogan of the London School of Economics, who lectured in Northrop Auditorium, University of Minnesota, during the recent International Affairs Week. "The prospects of democracy" was his subject.

He sounded a warning, however, to the effect that democracies come to take their blessings too lightly, and that defenders of the fire and determination in that defense which during the nineteenth century led to the worldwide acceptance of the democratic form of government.

"Exponents of democracy have had too easy a time in the past 50 years," he said, "or at least up to the period of recent dictatorships. One result has been that the intellectual level of democracy's defense has dropped below that of its attackers. We are too prone to defend on mere shibboleths and pay lip service to the most important of our institutions."

Mr. Brogan pointed out that the existence of a majority is not the assurance of control that many assume.

"There is a difference between 'wanting' and 'willing,'" he said. "Within a democracy this can be seen in the powers attained by minorities. In nations under dictatorship it can be seen even more clearly, as control is seized by a small faction."

A change to dictatorship, he said, is a major operation and poses as such. It assumes that the patient either will recover famously or will die. Dictatorships must come off brilliantly or smash. Democratic government does not involve the life of the people. It does not pretend to know the final answers. Democracy does not offer ultimate solutions but a series of temporary adjustments.

A danger to democracy is the practice of the politician of keeping on making concessions to public opinion after that line of public opinion has ceased to be for the best interest of the state, Mr. Brogan said.

"Politics is called a game, but the life of the state is not a game, and it is to the life of the state that government must look, for it has been charged with preservation of that life. The rules of the game are merely a convenience, and parliamentary majorities do not always indicate a wise action, even if they do show that political expediency has been heeded.

"Things for which democracies are criticized are likely to be present under other forms of government, although concealed," he said. "The new dictatorships are even more 'governments of speech' than are democracies. No longer is there a divine right of government, and every government knows that it must keep its people coaxed into accepting it. If in a democracy the majority of the voters must be won, so in a party dictatorship, the party majority must be won. Anti-democratic governments must constantly coerce public opinion by means of propaganda.

"Likewise, fascism must make the same concessions to expediency within the party that democracy must make with respect to the electorate as a whole. Democracies take too many actions to win immediate support. What governments should be doing is looking to the continuance of a sound and flourishing life by the state."

Collapse of democracy has come in states where there was too much wanting and not enough willing, he said. He advocated strong democratic government, firm in its conviction that it was serving the ultimate good of the people.

He compared recent dictators to Napoleon to their disadvantage, saying that Napoleon I was far above them in understanding and comprehension; "but," he said, Napoleon I went to smash and so did Napoleon III."

Minnesota Plan for Fraternities Adopted by Campus Societies

New System Makes Finance Supervision and Resident Counsellor Available on Request

Under an arrangement that has been named "the Minnesota Plan" an improved fraternity and sorority situation at Minnesota seems assured for the present year.

The plan, which was hit upon during conferences between alumni members of many fraternities, representatives of the Interfraternity Council of undergraduates and representatives of the university, offers fraternities two important services with the understanding that they must be sought voluntarily. There will be no compulsion and nothing will be forced on any fraternity.

In the first place, the auditing and finance system for student activities that has been so successful under the direction of Carol Geddes of the dean of student affairs office, will be available to fraternities that feel the need of improved financial direction. Either a partial service of supervision and advice or a complete financial service will be provided, for which the fraternities will pay on an hourly basis. Past experience has shown that many chapter houses will benefit from a stabilized and systematic financial policy. This will be available to either fraternities or sororities.

May Employ a Counsellor
Fraternities may also obtain the services of a resident counsellor upon application to the university. This man will be either a graduate student or a young faculty member. He will live in the fraternity houses and an arrangement will be made for him to get part or entire living expenses in payment for his work. His duties will be those of a counsellor in the full sense of the word. He will not have dominating control, but will advise students, or the chapter as a whole, and will endeavor to hold up a high standard for the social conduct of the group and for their academic work.

Both President L. D. Coffman and Edward E. Nicholson, dean of student affairs have endorsed the Minnesota Plan.

Commenting on the plan, President Coffman said: "The fraternities and sororities of the University of Minnesota have been built and maintained by alumni, students and friends of the institution. Many thousands of dollars have been invested in the buildings which house the fraternities and sororities. These organizations in the past have served a useful purpose at the university. They still serve a useful purpose. In the course of time, however, they have been affected, as have all human institutions, by changing conditions. It is a pleasure to know that they have been increasingly aware of these changes and of the necessity of modifying their practices to meet them.

National Fraternity Objectives
At the same time publicity was given to a set of resolutions, relative to the policy of fraternities, that was drawn up at a national interfraternity conference. These said:

1. The objectives and activities of the fraternity should be in entire accord with the aims and purposes of the institutions at which it has chapters.
2. The primary loyalty and responsibility of a student in his relations with his institution, are to the institution, and the association of any group of students as a chapter of a fraternity involves the definite responsibility of the group for the conduct of the individual.
3. The fraternity should promote conduct consistent with good morals and good taste.
4. The fraternity should create an atmosphere which will stimulate substantial intellectual progress and superior intellectual achievement.
5. The fraternity should inculcate principles of sound business practice, both in chapter finances and in the business relations of its members.

A Breather for the Fans
For the first time in many years, no home football game will be played at Minnesota between October 6, Nebraska, and November 3d, Michigan. Pittsburgh and Iowa will be played away at that time.

Dean E. P. Lyon Honored
Dr. E. P. Lyon, dean of the medical school at the University of Minnesota will be president of Phi Rho Sigma, national honorary fraternity in medicine during the coming year. He succeeds Dr. Irving S. Cutter, dean of the medical school in Northwestern University. The fraternity elected Dean Lyon during its annual convention, which was held in Minneapolis in September.

President Tells Problems Facing New Day World

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for crime. But now there will be a decrease of methodical labor and an enormous increase of spare time. In this situation lies an opportunity, a new, an alluring, a challenging opportunity, for educational statesmanship and for the training of a new generation of teachers and educational leaders."

Criticism Our Privilege
President Coffman made clear his opinion that we must not come to consider the New Deal as being above criticism.

"Without intelligent and friendly criticism some virtues of the passing era may be overlooked and some of the tendencies now current in the new program may become too firmly and deeply established for the good of the country," he said. "It would be a misfortune to recover economic prosperity if we lost all of that spirit which built America. It would be a misfortune for government to become tyrannical. Tyranny is a mockery to a free people. On the other hand, unbridled individualism must never be permitted again. We have paid a heavy enough toll to this philosophy through the loss of our savings, the machinations of the unscrupulous, and the corruption of political leaders, ever to seek a return to the Golden Era of the past. In

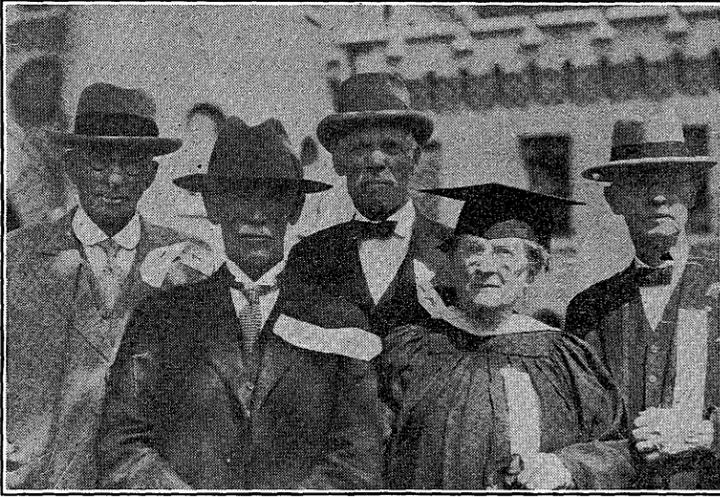
uttering this indictment I do not mean to imply that there were no socially-minded industrial or political leaders in the world in the past; there were many who saw clearly what was ahead but we refused to listen to them.

Must Watch Public Service
"Another danger inherent in the new program is that there will be a great expansion in the number of government officials necessary to carry the plans into action," he said. "These government officials should be more expert and better trained than government employees usually are. Hitherto we have chosen men for public office largely because they belonged to a given political party. We use patronage to pay political debts. Men have been chosen without regard to their competency or fitness for public office. This has been almost as true of those who filled appointive as of those who filled elective offices. Whether we can take the graft out of politics and insure competency and efficiency in public administration represents one of the severest tests to which the new program will be put. England did it. Perhaps we can.

"A national commission is now engaged in studying the problem of public service personnel. The magnitude of the problem is revealed by the fact that more than 15,000,000 persons are engaged in public service. The commission has already discovered that the broader and more impersonal the work, the higher the quality of the service. In general, federal officials manifest more genuine concern about public welfare than officials of municipalities. The problem we face in America with regard to public administration is the problem England faced a generation ago—it is the problem of selecting public servants on the basis of ability, of providing careers for them, and of supporting them regardless of the political group that may be in power. To achieve a corresponding situation in this country calls for a quality of unselfishness on the part of the political leaders and the political parties of the country such as we have never experienced.

"It will not be enough for the higher educational institutions of America to provide training for leadership in public service. They must help to educate the people

Members of a Famous 'U' Class



Two years ago these were the surviving members of the Class of 1877. Back row, left to right, Mr. Fred Eustis, Judge Stephen Mahoney (since deceased) and A. M. Welles; front row, and Mrs. Mathilda J. C. Wilkin.

of the country as to the importance of this training, for there are still many perfectly good citizens who think that the barber, the baker and the candlestick maker are qualified for every public office.

"And perhaps a warning may be given to the college professors who are now helping both state and federal governments in carrying forward their programs: It is that professors shall do the things they are qualified to do and not allow themselves to be drawn off into kinds of administrative responsibilities for which they have no qualifications. If professor are to be continued in the role of experts, and I believe that the public interest demands that they should be, then a fair proportion of the undertakings in which they are engaged must succeed. Otherwise we may have a reaction against the "intellectuals" in public life that will be as bitter as was the reaction against them in the early part of the nineteenth century."

Seeks Fundamental Learning
The president of the university called for a careful attention to fundamentals in education.

"In a time of flux, in a time when economic foundations are insecure, men are likely to grasp at expedients in their efforts at recovery," he said, "and to ignore and forget many of the fundamental things of life. It is so now. We are tinkering with many things and experimenting with all sorts of programs. We dare to disregard well known principles in order to try something which we think may help us out of our distress. We call upon the schools, and particularly the colleges and universities, to deal with a multitude of things near at hand. We ask for researches today to solve our problems of tomorrow. We are impatient of delay and critical of prophecy.

"What responsibility, if any, does higher education have in stabilizing the situation? The responsibility it has always had—that of remaining calm and unemotional in its consideration of the various problems arising out of our condition: the responsibility of not allowing its resources to be dissipated in so-called researches of a temporary and immediate nature.

"I have recently had occasion to make a somewhat hasty study of a number of other depressions. In each instance the people, I found, were easily led to try new experiments. Furthermore, I found that the men in higher educational circles who devoted themselves faithfully to researches of a fundamental nature, to researches whose use they could not understand, nor see, nor appreciate at the time—were the men who really made the distinctive contributions to recovery and to civilization. Now is the time, if ever there was a time, when we should encourage pure research, research for its own sake, research that is conducted simply for the sake of discovering the truth. The universities of America have a far greater responsibility in holding fast to this position in the present crisis than they have in lending aid to every movement that may be advanced for recovery.

"By this I do not mean that they should give no attention to studies of immediate value or that they will not co-operate in manifold ways in helping the government. I merely wish to assert with

all the power at my command that they should not allow themselves to be diverted from their main task. It is only by holding fast that they will serve public interest in the long run.

Keep up the Moral Fiber

Admitting that current emergency legislation is necessary, Dr. Coffman warned that the present actions will leave in their wake many "relief-minded" persons and others who have come to take financial and moral obligations lightly, thinking they can be shifted to the shoulders of others.

"Surely no government can survive unless its constituents have a high sense of personal responsibility and moral obligation," he said. "When obedience to the law becomes a personal matter, and the payment of taxes and debts a personal privilege rather than a social obligation, when we become a nation of self-seekers, the forces of disintegration will slowly but inevitably destroy us. No social structure can grow in strength and in influence when its individual members depend on the other fellow to support it."

"In the new order," he declared, "there must be a new class of social Puritans, men and women endowed with zeal for and dedicated to the preservation and advancement of moral virtues of the highest order. Has higher education nothing to contribute to the endowment of men and women with such ideals, or will it continue to say that its sole responsibility resides in training the intellect?"

Dr. Coffman called for more insistent attention to the need for straightening out our international relationships, saying that Secretary of Agriculture Wallace is perfectly right in his statement that, "America Must Choose," between nationalism and an opportunity to trade and deal with other nations.

The Danger to Freedom

Furthermore, he said, a more or less unrecognized danger lies in the threat to intellectual liberty that is an offspring of the heat of present day political controversy.

"Some say," he asserted, "that efforts on the part of the dominant political group in a number of states in recent years are mere efferescences, that the hysterical days of the late war are likewise gone, and that there is no disposition to control education today. When we make these statements we speak without a knowledge of the facts, or at any rate without regard to some of the circumstances in our national situation. Intellectual liberty is in peril in America. It is in danger of falling prey to the fires of party passion, to the interests of special groups, and to new pressures flowing from the national program.

"One sure way of cooling the fires of party passion, of abating the demands of special groups, and of insuring the success of the new deal is to exalt and to encourage scholarship on every hand. The public schools and the universities must never lose sight of the fact that their full responsibility is discharged when their students are taught to be free-thinking, free-acting, independent persons. Nor must they lose sight of the fact that every movement to indoctrinate youth with certain social theories or with a certain kind of political philosophy is subversive to the traditions and prin-

Two Military Units Remain on Campus

Only the Coast Artillery Corps and the Signal Corps units of the Reserve Officers Training Corps will be maintained on the University of Minnesota campus this fall. Last winter orders were issued discontinuing the medical and dental units, in line with an economy move on the part of the War Department. The present action includes discontinuance of the Infantry Unit, which has been the largest and has included most of the basic, or compulsory, course students.

Referring to the withdrawal of infantry training, a letter from Colonel Alexander M. Miller, Jr., chief of staff, said: "In accordance with instructions from the War Department, the Infantry Unit, senior division, Reserve Officers Training Corps, in the University of Minnesota is withdrawn, except insofar as it is necessary to carry out the present contracts of the advanced course students. It is contemplated that all infantry instruction shall terminate at the end of the academic year 1934-'35."

The War Department has asked the university to state what credit it is willing to give for student work in the Signal and Coast Artillery Corps.

Colonel Lloyd Fredendal, who a year ago assumed the post of commandant, has been transferred after one year at Minnesota. His successor Major A. E. Potts, C. A. C., has taken up his duties at Minnesota.

Chemists Attend Fall Meetings

Including Dr. S. C. Lind, director of the School of Chemistry, and Dr. R. A. Gortner, head of the division of agricultural biochemistry, seventeen members of the chemistry department, University of Minnesota, went recently to Cleveland, Ohio, to attend the fall meetings of the American Chemical Society. A number of them read papers. Those who made the trip were

Dr. Lind, Dr. Gortner, R. E. Montonna, R. E. Brewer, L. H. Reyerson, S. Yuster, George Glockler, C. A. Mann, C. F. Koelsch, Lee I. Smith, W. M. Lauer, C. H. Shifflet, C. Rosenbloom and P. D. Bartlett, S. I. Aronovsky, C. H. Bailey and A. Gortner, Jr. The younger Gortner obtained his doctor's degree only last spring. He and his father have collaborated on one of the papers that will be read. Others who presented papers were Drs. Aronovsky, Lind, Brewer, Yuster, Glockler, Smith and Shifflet. Dr. Koelsch read the paper required by his winning the \$1,000 research prize of the society, as announced last spring.

cles of a democratic society.

"In days when national programs are creating new pressures, when emotions are running high, when they oftentimes call for submission in the name of patriotism, when great nationalistic philosophies are imperiling intellectual freedom everywhere, when forms of coercion as effective as arms are directing thought and controlling human action, how important it is that we in America preserve, free and undefiled, the citadels of human learning!

"There is no intelligence where there is no self-direction. In a world turning black through the spread of dictatorships and other forms of militant nationalism, liberty and human rights are again in danger. They will be preserved only as the spirit and essence of learning are preserved.

"One thing is certain—we cannot remain apart from changing life. We may fail to keep step with it, but we shall be affected by it. We know how necessary it is that the planlessness of the past shall give way to a more carefully planned future; we know how necessary it is that blind chance, individual rapacity, and the reliance upon providential happenings shall be superseded by co-operation. The new world that we are trying to make, the new world in which we shall live, will not, I pray, need to write any Bill of Rights so far as freedom of thought, of speech, of assembly, and of the press are concerned. It will be a world that is controlled by ideas, not force; by liberty, not by compulsion; by ideals, not by pressures."

MINNESOTA CHATS

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University of Minnesota, Minneapolis

A LEOPARD FOR YOUR UNICORN

That knowledge is not static is indicated again by a report from Eton College, which was founded in 1440 by King Henry VI, and which has on its heraldic shield a "leopard", although scientifically speaking, there is no such thing as a leopard, "panther" being the word for it. Anciently leopards were supposed to be crosses between lions and panthers, "leo" and "pardus." Historians, delving into the past, have shown that when Eton was founded the naturalists were attacking the patrons of heraldry for having unicorns on coats of arms. There was, they said, no such thing as a unicorn. So Eton, seeking to be accurate and realistic, chose the leopard. Much of this trouble has been avoided in the United States, for we know absolutely that there is such a bird as the eagle, though many have never seen one.

FROM THE SICK—TO THE SICK

James Nathan Hill, eldest son of James J. Hill, willed \$500,000 to an eastern school and \$200,000 to eastern art galleries. Another millionaire, who made his money out of Northwest railroads, left most of his money to eastern institutions and foreign missions when he died. All of which is well and good. The institutions that benefited by these bequests probably were deserving. It would seem, however, that, their money having been made in the Northwest, they could have found deserving institutions in the Northwest through which they could have benefited the territory from which their wealth was acquired.

For this reason the gift of a half a million dollars to the University of Minnesota by the Mayo brothers of Rochester deserves special recognition. In their letter explaining the purpose of their gift they said:

"Since our money came from the sick we believe it ought to return to the sick in the form of advanced medical education."

The letter also contained a paragraph which expresses an interesting point of view as to the desirability of leaving a large fortune to an individual. They said:

"It seemed to us, then as now, that monies which would accumulate over the amount necessary for a living, under circumstances which would give favorable conditions to work and prepare reasonably for our families, would interfere seriously with the object we had in view. How many families have we seen ruined by money which has taken away from the younger members the desire to labor and achieve and has introduced elements into their lives whereby, instead of being useful citizens, they have become wasteful and sometimes profligate."

—Thief River Falls Times

Town in State Becomes Model In Beauty Plan

What results purposeful effort can have in making a community sensitive to beauty and aware of ugliness is the subject of a study of national significance that is being conducted in a Minnesota town.

Endowed by the Carnegie Corporation, the College of Education at the University of Minnesota will continue this year its community art project at Owatonna. Results of the first year, completed last spring, were called so good when the endowing foundation sent an inspector to report on the job, that \$20,000 has been given to continue the work. The inspector, an art critic, said the results obtained were a sign that the project would be widely significant.

How art, by which is meant in this case an appreciation of beauty and an effort to attain it, can be helped to become a part of the tradition of a community, has already been shown at Owatonna. The advisers stationed there by the university are willing to give help on any problem, from the arrangement of a garden or planting of trees, to the architecture of a major building, business or public, the decoration of a living room, or the arrangement of a store show window. As long as the end desired is to make a thing more attractive, or to gain a sense of what is attractive, symmetrical, harmonious, and what is ugly, distorted or repulsive, any project falls into the scope of this study.

Sports Building Delayed.

Because of strikes in Minneapolis construction work on three building projects on the university campus was delayed in May and again in July. Repairs to the School of Business Administration building were completed in time for the opening of college and the new roofhouse on the Students Health Service building, one of three federal aid projects, was finished. The Indoor Sports Building, which marks the practical completion of Minnesota's athletic plant, will not be ready for use until about the opening of the winter quarter. An extension of the contract has been granted to almost the end of November, and after that the Christmas holiday will arrive.

Book to Discuss Waterway

"If the creation of an adequate channel on the Upper Mississippi facilitates economic development in that region, and brings the producers there closer to their market, the benefits derived will be far greater than the mere savings in transportation costs," declares Dr. Mildred L. Hartsough, former member of the University of Minnesota faculty, in her forthcoming book, "From Canoe to Steel Barge on the Upper Mississippi." It will appear in December.

School programs play a prominent part.

The program was first conceived of by Dean M. E. Haggerty of the College of Education. If the accomplishments are what they now promise to be the Owatonna plan may become a byword wherever community improvement projects are hatched.

Future of Science in Many Fields Stated in Predictions

(Reprinted by Permission of Science News Letter)

By permission of the editor of "Science News Letter," Minnesota Chats is reproducing some of a series of predictions as to the future of scientific accomplishment that was printed in that publication last June. At the time the statements attracted wide notice. They appear to be overwhelmingly convincing as proof of the importance of supporting all sound and thorough programs of scientific research, of which the most independent and disinterested are found in the universities.

"THE average life of mankind in the time of Queen Elizabeth was twenty years. Today the average is fifty-eight years for man and sixty-one for woman, who is biologically more important. . . . Recent discoveries in medicine are leading to astonishing results, and give a prospect that the life of man will soon reach the Biblical promise of three score and ten."—Drs. W. J. and C. H. Mayo of Mayo Clinic and Foundation, Rochester, Minn.

"Scientific research and the applications of science in the course of 150 years have increased fourfold the productivity of labor; they have doubled the length of life. Science has made it possible for each to work at routine tasks half as long as formerly and at the same time to consume twice as much wealth as formerly. Fourteen hours of labor, shared by women and children, once provided hovels, lice and black bread for most people, luxury for a few. Seven hours of labor could now supply comfortable homes, warm clothes and healthful food for all. If the resources provided by science were properly distributed—as they will be when we have an applied science of psychology—there is now sufficient wealth to enable all to share in the desirable luxuries that science has created—running water, household electric machinery, telephones and automobiles, radios and the rest—and to enjoy in full measure the most nearly ultimate goods of life—home, friends, things to do, freedom, self-respect."—J. McKeen Cattell, editor of Science.

"We are on the threshold of advances in biology generally, and particularly human biology that will fundamentally alter our outlook. . . . Already we know how in the laboratory to increase the power of lower organisms to utilize their available resources in food material and energy for vital processes, such as growth and duration of life from three to ten times over their usual performance with corresponding relative increases in size, longevity, and so forth. . . . Developments and applications along these lines are likely to come in a not too distant future."—Dr. Raymond Pearl, The Johns Hopkins University.

"Biologically speaking it is fair to say that man's social progress is now only at its beginning and that the two million years that separate us from the caveman mark only the start of human life. The progress of the next two million years is as inevitable as that of the last, and when we have reached this new goal such events as the present depression will have vanished beyond recognition."—Dr. G. H. Parker, president, American Academy of Arts and Sciences.

"The next century should see an extension in the conquest of science over the forces of nature so astounding that imagination is inadequate to conceive of the final result. In the field of organic chemistry our knowledge of the vital chemical processes of living matter will be so enormously increased that it is not too much to say that the life cycle itself may be controlled to the end that old age shall have disappeared and that many then alive may live to ages rivalling that of Methuselah."—Thomas Midgley, Jr., vice-president, Ethyl Gasoline Corporation.

Future of Research

"The material world is so infinite in its variety that I am convinced modern science, modern inventions, and modern methods of mass production have only scratched the surface. The inventions which we have seen so far are only a foretaste of what is to come, provided only the spirit of man is pointed in the right direction and we are able to experiment in the field of social science in as scientific and good natured a way as we experiment in

the field of physical science."—H. A. Wallace, Secretary of Agriculture.

"Scientific invention must continue but social invention must provide an efficient distribution of wealth to supply buying power adequate to the flow of mass production."—Charles A. Beard, Author.

"Available work can be continually expanded and progressively higher standards of living made possible through developments of science and industrial research. At the same time in my opinion if the utmost is to be achieved there must be equal development of social consciousness on part of leaders in science and industry. Planning on a national scale with a view to making this a land of comfortable, efficient, attractive homes would seem to be indicated with every industry co-operating in that definite purpose rather than each working independently and sometimes at cross purposes."—Lowell Mellett, editor, Washington, D. C., Daily News.

"It is of the utmost importance to society that research in pure and applied science be speeded up to improve the methods of industry and its products and to create new processes or products that man will desire to possess and which therefore may create new industries."—R. C. Richards, president, Lehigh University.

"I believe that the brilliant start made during the past hundred years toward the wiping out of disease and the lengthening and strengthening of human life is now threatened by the defeatist attitude of those advocating retrogression instead of expansion. I know personally about four major medical research projects with results promising incalculable benefits in future human strength, long life, and happiness, which are now throttled and languishing because of the imbecile attitude that what is now available must be divided up. I believe that the most important change demanded in the scientific spirit today is appreciation of the ridiculousness of the notion that want, disease and distress amidst potential plenty is an insoluble riddle or an act of God, instead of temporary—a disaster remediable by human energy, brains and co-operation."—Paul de Kruif, writer.

Future of Materials

Progress in the methods of manufacture, of improvement of quality and of methods of fabrication of sheet metal is making tremendous contributions to human welfare. Sheets for forming operations are offering homes of greater comfort and at greatly reduced cost. The application of sheet metal for pressed steel porcelain sanitary ware, such as sinks and wash basins, is making sanitary facilities of beauty available at only a fraction of former costs. The development of refrigeration and air conditioning is making healthful conditions of living available to a greater percentage of the people."—Dr. Anson Hayes, Director of Research Laboratories, American Rolling Mill Company.

"Incandescent lamps of improved design resulting in higher electrical efficiencies promise savings in current consumption. Ultraviolet lamps and sources of the lower wavelength radiation offer new possibilities to this general field. Further, the development of the new gaseous vapor discharge lamps, including the sodium lamp, promise new offerings in electrical efficiency and the character of lighting."—A. H. Hageman, Manager Research Staff, Westinghouse Lamp Company.

"Science has shown us how to duplicate almost all the important petroleum products by chemical treatment of the almost inexhaustible supplies of shale and coal. While such processes are not economically feasible in this country at present, they certainly will become so long before our oil reserves are fully exhausted so that a civilization based so largely on oil heat and oil power need have no fear for its basic supplies."—E. G. Seubert, President, Standard Oil Company of Indiana.

"No science has progressed faster than chemistry and the one inexhaustible source of chemical raw material is the farm. More and more the chemist is showing the way toward increased markets for agricultural products. This was unknown fifteen years ago. Today in a small way it is being

done. Tomorrow it should be a reality."—F. N. Peters, Director Furfural Laboratory, Quaker Oats Company.

"Progress in cellulose chemistry is just beginning to strike its stride. The rayon, cellulose, and film industries are only a beginning of new industries based upon cellulose as a raw material. Pulp and paper will continue to become more and more important in this next century of advanced civilization."—Bjarne Johnson, Director Research Staff, Hammermill Paper Company.

"Road building costs will be so reduced by scientific improvements in diesel track type tractors and allied equipment that all the inaccessible parts of our country will have the blessing and comfort of perfect highways for automotive transportation. The building of dams and levees, the digging of irrigation canals and ditches will be done so easily and cheaply that no one need farm stony, barren and unproductive soil, but will have available the fine fertile unused lands of this country that require only water and tillage to produce the crops that will be needed by highly paid skilled workmen."—Oscar L. Starr, Vice-President in Charge of Research Division, Caterpillar Tractor Company.

"We have had a large group working for four years to produce a cheap but modern house for the masses. A five room house, equipped with every article of furniture, linens, rugs, kitchen utensils, in a word, everything together with a garage and the lot with all improvements such as sewers, pavement, sidewalks, lawns, trees can be sold to the workingman for two thousand dollars, allowing adequate profit to the manufacturer, adequate time financing cost and every other similar type of expense."—L. R. Smith, President, A. O. Smith Corporation.

"Through the development of new and better devices in transportation, air conditioning, industrial processes, home applications and improvement in public health,

we can expect in the next few years great improvements, the creation of new industries and new jobs through the commercialization of new scientific knowledge, which is now being obtained faster than ever before."—L. W. Chubb, Director Research Laboratories, Westinghouse Electric and Manufacturing Company.

"Lithography and printing can now be appreciated only through the medium of vision. With certain modifications they can conceivably be made to appeal to the auditory sense as well."—Robert F. Reed, Department of Lithographic Research, University of Cincinnati.

A.A.A.S. to Meet At Minnesota

(Continued from Page 1, Column 4)
Cities at the same time. These sessions would be separate but members would have a chance to interchange attendance at the various lectures and discussions.

More than 1,500 papers will be read before the 142 affiliated technical societies of the American Association for the Advancement of Science and before the general meetings, Dr. Ward said.

Dr. Ward, twice national president of the Izaak Walton League, expressed pleasure at the selection of Minnesota for the sessions. He said he knew no place in the world so well suited for canoeing as the border waters between Minnesota and Ontario and those in the Superior-Quetico tract.

In the absence of Dr. Dwight E. Minnich, Dean Malcolm M. Willey called the committee together. W. C. Welch represented the Minneapolis Civic and Commerce association and Dr. Meyerding the State Medical Society.

Final approval of the recommended dates, and of program suggestions that were discussed will rest with the executive committee of the association.

Dr. Ralph D. Casey, chairman of the department of journalism, went with Mrs. Casey on a motor trip to the West Coast during August, stopping at Glacier and Yellowstone parks. Dr. Casey formerly taught at the Universities of Washington, Oregon and Montana, so he was on familiar ground in the far northwest.

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Registration Gain at Minn. Is Nine Percent

Figures Approach the Total of 1931, Which Was the Peak

MANY ON FEDERAL AID

Increases Rather Evenly Distributed Among the Schools

With undergraduate registration practically completed but several hundred more graduate students to enroll, student attendance at the University of Minnesota shows a gain of nine percent over the same period last year, according to figures sent to President L. D. Coffman by Rodney M. West, registrar. Total enrollment is now 11,428, which is only about 400 fewer students than were registered in the fall of 1931, the peak period in the institution's history. Of the total 7,120 are men and 4,308 are women. The gain in actual students is 942.

These figures do not include registrations in evening classes of the Extension Division nor students in the four schools of agriculture, which are not of collegiate rank.

The Minnesota trend follows the national curve for college registrations this fall. Throughout the nation there has been a sharp increase in the number of young men and women who have been able to enter or return to college or university. Exact figures have not been compiled, but all evidence is that most of the gains have been made in the lists of new students. Freshmen probably increased by about 600, as there is a gain of nearly 400 in the number of students who had previously been registered.

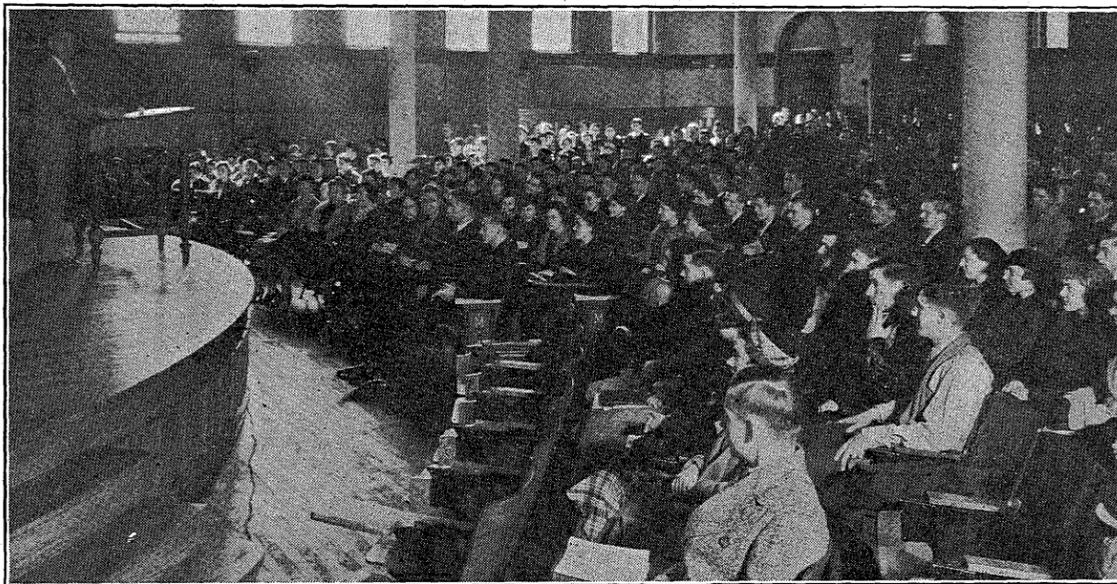
The only major unit in the University of Minnesota to show a noteworthy decrease was the College of Engineering and Architecture. It has declined 3.7 percent, or a total of 39 students. A decline of 83 in the number of nursing students is accounted for in part by a change in system which no longer carries on the books as students a certain group of nurses who are actually taking work but are employed elsewhere also. Percentage gains were largest in the General College, School of Dentistry, College of Agriculture, Forestry and Home Economics, School of Business Administration, College of Science, Literature and the Arts, School of Mines and the School of Chemistry. A decline of less than one percent took place in the College of Education and there was a decrease in the number of students registered as dental hygienists. The University College, a unit devised to provide greater elasticity in courses for students seeking special aims, showed a considerable percentage decline in its numbers, but the actual change was only from 63 students to 48 students.

A table showing registrations in the various units, numbers of men and women, and the actual and percentage changes from a year ago, follows:

College	Men	Women	Total
General	576	326	902
University	22	26	48
S. L. A.	2107	1950	4057
Eng. and Arch.	1011	11	1022
Agriculture	506	379	885
Law	299	17	316
Medicine	555	79	634
Nursing	419	419	838
Dentistry	270	2	272
Dental Hygiene	57	57	114
Mines	204	204	408
Pharmacy	128	26	154
Chemistry	354	6	360
Education	331	818	1149
Business	323	85	408
Graduate	434	111	545
Total	7120	4308	11428

Inasmuch as a considerable part of the Graduate School's registration comes in late it is likely that the final registration figures will approach 12,000, which would be a new high total.

New and Old in Freshman Welcome Policies



To Seek Patent On New Process Alpha Cellulose

One of First Results in Northwest Research Projects Announced

The University of Minnesota will apply for a patent on a process for making alpha-cellulose, the raw material of rayon, the first of the important tangible results of work conducted under the Northwest Research Foundation, which was established about a year ago.

When it was begun the foundation planned to raise a considerable amount of capital through gifts from businessmen in the northwest, \$25,000 being set as a minimum. Due to the provision in the agreement that patents could be taken by the foundation only if its revolving fund amounted to \$25,000 the patent on the new process will be taken by the university itself, as gifts have not yet reached that figure. The university will hold the patent temporarily and will turn it over to the foundation when conditions have been met.

The alpha-cellulose made by laboratory processes in the Chemistry department is said to be 98 percent pure and of a remarkably high standard. The material used is aspen pulp, aspen being a tree which covers thousands of acres in northern Minnesota. Furthermore, it is the only tree that is now producing a net crop in the state, which is to say, that the annual growth of aspen forests in Minnesota is greater than the average cut, leaving a net gain. For all other types of forest trees in the state, there is an annual net decline in total footage, the cut being greater than the growth.

The alpha-cellulose research was put into effect in 1932 by Dr. Henry Schmitz, head of the division of forestry. The actual work has been done by Dr. L. W. Cornell, working under the direction of Professor Ralph E. Montonna. Dr. Lloyd H. Reyerson, professor of chemistry, is director of the Northwest Research Foundation.

Psychologists Re-elect Paterson

Donald G. Paterson, professor of psychology at the University of Minnesota, was re-elected secretary of the American Psychological Association at its recent meeting in New York. It will be his second year. Professor Paterson will also serve this year as a member of the committee on job standards and classification which will be an adjunct of the United States Employment Service. He returned today from Washington where he attended a meeting of the committee.



Above is shown a picture of a lecture on "How to Study" delivered before new students and freshmen by Professor Charles Bird of the Psychology Department. Below is a representation of the freshman welcome of yore. The wily villain in the hat is selling a "campus ticket" to the innocent freshman. These tickets, in olden days, were supposed to entitle the newcomer to divers privileges such as use of the walks, study rooms, and sanitary facilities. They were a fall feature at every college.

Scientist and Photographer Join In Depicting Animal Embryos

Each Cell Change in Process of Development Pictured in Research

(Illustrations may be found on page 2)

A series of photographs showing all of the major changes in the development of the sheep embryo, through the various cell divisions from a period a few hours after mating up to the time when a well-developed foetus appears, has been worked out at University Farm in a co-operative project directed by Professor Laurence M. Winters of the department of animal husbandry, with V. P. Hollis, head of the photographic laboratory, doing the photography. Both from the point of view of obtaining new scientific data and from that of the photographer,

the research is considered remarkable.

Science knows the various changes that take place in the animal egg as it matures, and photographs have been taken of many of the successive changes as they have been discovered in animals that were slain, but this is said to be the first series in which still living embryos, taken from freshly slain animals, have been employed. It is also the first in which the researchers persevered until they obtained a complete succession of specimens, one of each of the successive stages of development.

Animals were bought and bred for the purposes of the experiment, and extremely careful records kept so that the workers could know at what time they might hope to find the various forms they sought. Some stages

(Continued on page 2, column 5)

Calls Liberal One Ruled by Fact, Not Dogma

President Tells Freshmen Experience Still Has Lessons for Youth

OPENING CONVOCATION

Says Educational Opportunity, Once Neglected, is Gone Forever

The University of Minnesota is opening the sixty-sixth year of its existence under circumstances of great human interest, said President L. D. Coffman at the year's first convocation on Oct. 4. Everywhere throughout the world there is a disposition to experiment with the processes and the institutions that affect mankind. These experiments are not all alike, nor are they all conducted in the same manner. They all arise, however, out of the same set of conditions and they are activated by common motives. They have their origin in the economic distress that prevails generally everywhere; they aim to mitigate the present depression, to prevent future ones, if possible, and to improve the standard of living of the common man. In the effort to achieve these highly desirable ends, mankind is in some danger of disregarding the fruits of experience and of attributing too much virtue to the new techniques that are being tried. However that may be, it is true that we are witnessing an exhibition of the irrepressible and unconquerable spirit of mankind—a spirit that refuses to submit, a spirit that, even when the sky is dark, begins to picture new Utopias. That is what is happening now; we are gathering strength and laying the basis for a new day, for a civilization which will differ in many fundamental respects from the one that has served in the recent past.

Youth Is Courageous

The world was never so full of interesting problems. While I have some sympathy with those who wonder what the youth of the present generation will do, I do not sympathize with them fully. The most encouraging thing I know—more encouraging than all the national programs devised by this and other countries,—is the fact that millions of youth are facing the future with resoluteness and with courage. What better evidence can be found of this than the enormous increase in college registration that has occurred this fall? Some come to college, no doubt, because it is better for them to be there than to be loafing, but the majority come, I hope, for the avowed purpose of fitting themselves for the consideration and disposition of the problems they must face. To build a society and to live rationally calls for well-trained minds that are kept continuously fit by systematic exercise.

I know that there is still a widespread feeling of uncertainty and of skepticism. We are not quite certain where the various programs of recovery are leading us. There is, however, no confusion of purpose, only a confusion of agencies, which arises out of a lack of knowledge, or inability to grapple with forces that are necessary in reconstructing our social order. Whatever confusion there may be should not blind us to the fact that the unsolved problems of a social, industrial and political nature offer inviting opportunities for the trained mind. Unless trained minds apply themselves to the solution of these problems, we must expect a social order that does not depend upon intelligence for its stability.

Why Do Students Come?

Perhaps the reason so many thousands of students are in college has never been clearly defined for them. Perhaps it cannot be. There are those, I know, who look upon large numbers of stu-

(Continued on page 3, column 1)

Characteristics of Scholarship in America Described

Dean Ford Points Out That Emerson's Predictions Have Failed

PHI BETA KAPPA PAPER

Says Freedom of the Scholar Still an Issue in the United States

Although Emerson's address on, "The American Scholar," delivered in Boston in 1837 before the Harvard Chapter of Phi Beta Kappa, was perhaps as brilliant an exercise in thinking as America has known, its ultimate effects on American scholarship have been almost nothing. What trends American scholarship has taken in the century since that day, and why it has never followed the Emersonian predictions were explained by Dr. Guy Stanton Ford, dean of the Graduate School of the University of Minnesota, in the annual Phi Beta Kappa address which he delivered before the Minnesota chapter.

Before explaining its failure to make a mark on American scholarship, Dean Ford repeated the enthusiastic description of Emerson's address made by James Russell Lowell, who heard it, and said: "An event without any parallel in our literary annals, a scene to be always treasured in the memory for its picturesqueness and its inspiration. What crowded and breathless aisles, what windows cluttered with eager heads, what enthusiasm of approval, what grim silence of foregone dissent."

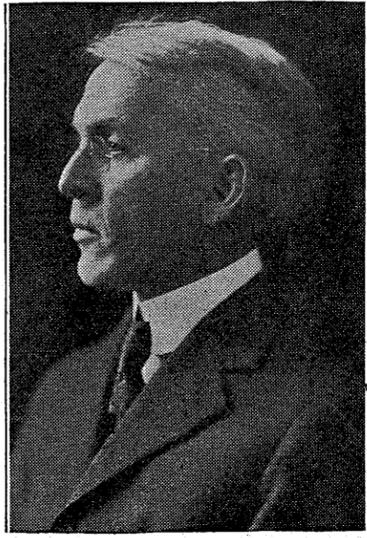
Emerson's call to the employment of intellect in public service presently became impossible due to the policies of Van Buren, the machine politician, Dean Ford said. His demand for the independence of American scholarship from Europe fell by the wayside as students from the New World flocked in increasing numbers to continental universities, particularly those of Germany. His urging that the scholar maintain an unsullied independence, subject only to his sense of duty and truth, has set one of the most difficult tasks of scholarship in every land.

Independence in Scholarship
"So far as independence in scholarship was concerned," said Dean Ford, "Emerson in 1837 was truly a voice crying in a wilderness. American scholarship had before it a long apprenticeship to Europe in the ways of meticulous research and the effort to follow observed facts dispassionately. That the success and effect of this would in the long run be most patent and nationally significant in the physical sciences and biological sciences rather than in the social sciences was determined by three things.

"The European universities, despite their boasted academic freedom, were kept safe and sane under European monarchs and petty princes in all the fields that touched public affairs and the revolution of 1848 only emphasized for the ruling class in Europe the wisdom of keeping the attention of professors and their students confined to the distant origin of human institutions and the study and exposition of the status quo. In the fields of politics, government, and even history, continental European professors under Louis Philippe and Napoleon III or the German rulers, small and great, and then under Bismarck, knew before their appointment in what directions it was safe to explore freely. Even if this view of their nineteenth century *Lehrfreiheit* is too unfavorable, the continental universities, imbedded in a political and social system alien to that of America, had little but method to impart to students from the western democracy. As those methods could be and were best exemplified in history, it is not surprising that in the group of studies that had to do with man in society the first German trained American scholars were historians such as Prescott, Motley and Bancroft.

"In all other fields the dynastic nationalism of Europe and the self-satisfaction of an America given over to acquisitive exploitation of apparently inexhaustible resources, and the political appeal of short views and expedient policies combined to leave no place

Phi Beta Kappa Hears Dean Ford



Dean Guy S. Ford

to learn or to apply scholarship in public affairs. Moreover, scholarship in America, whether native or foreign in training in the fields of politics or economics, was not sure of its position in the nineteenth century if it disagreed with the existing American political and economic order in any degree.

"Professor Perry at Williams and William Graham Sumner at Yale, who were opponents of protection in the eighties, were under constant fire as unsafe men to instruct American youth. In my sophomore year at Wisconsin where La Follette was beginning his career, Richard T. Ely, professor of economics, was subjected to a heresy trial before the regents because he explained socialism to his classes and wrote a harmless and still useful little book on social thinkers of the nineteenth century from Saint-Simon to Marx and Lassalle. Three years later President Andrews of Brown University created a tremendous furor in the East by favoring Bryan and free silver and shortly afterwards transferred to the chancellorship of the University of Nebraska.

"Clearly there was no place yet for the independent self sustained Emersonian scholar in the social sciences in the America of the last century, and it is yet to be proved that he has a secure place in the twentieth century. If he ever existed in many European countries he has disappeared from their universities during the years when you have been earning a Phi Beta Kappa key. His ultimate fate in America may be one of the major national issues before many more annual orators have appeared before you.

Factors Leading to Europe
"Other factors, however, determined that American scholars should seek, and Europe, again with German universities in the lead, should give training to large numbers in the natural sciences and medicine. Here was a free field for scholarship where both continents needed and quickly recognized and applied the results of the scholar's work in the laboratory. It is true that the theologians tried to save their cherished creeds by crying out that science was undermining religion. But industry and commerce were more concerned with chemistry than they were with creeds. The bourgeoisie and not the bishops ruled the economic life of the new nations in Europe.

"Science helped make cities through its contributions to industry, it helped feed them by its contributions to crop production, and it made life in them possible by its contributions to sanitation and its success in combatting epidemics. It enabled nations to make war more efficiently and it perfected surgery and aseptic treatment of the wounded through the opportunities given it by these wars. Even a nation as reckless in wasting its natural resources of men and materials as the United States gave public lands to found state universities that would serve agriculture and the growing industries. American educators learned from Europe that both objects could be accomplished only through advance in the basic sciences and put the funds to better uses than Congress had ever intended or state legislatures dreamed.

"But it was the European universities that led the way. The

(Continued on page 4, column 3)

Four Death Causes Studied by Doctors

Short Course for Medical Practitioners Held on Campus

For two solid days recently several hundred Minnesota physicians concentrated at the University of Minnesota on the four principal causes of death in the modern world. It was done during the annual fall short course for medical practitioners, held Monday and Tuesday, September 24 and 25. Heart disease, tuberculosis, cancer and diabetes were the four modern scourges which were studied, together with one other common type of case, the fracture. There were seven half hour lectures on each subject with the exception of cancer, to which four half hour periods were devoted.

Clinics were offered during many of the periods with demonstrations of treatments. Patients with the commoner forms of cancer were presented, as were a series of fracture cases, and in the tuberculosis clinics, efforts to present modern methods of diagnosis and of differentiating between the childhood and adult forms of the disease.

The extension committee of the medical school, which conducted the short course, is made up of Drs. E. T. Hermann, J. C. Litzenberg, W. A. O'Brien, N. O. Pearce, L. G. Rigler, O. H. Wangenstein, and Dr. R. R. Price, director of the division. Registration will begin at 7:30 a. m. Monday.

Corn-Hog Program Continuance Favored

By almost three to one Minnesota corn-hog contract signers favor continuing the program next year, it is shown by the returns from 50 of more than 80 corn and hog raising counties. Andrew Boss, state director of production control, University Farm, St. Paul, has reported a total of 19,284 votes in favor of continuing the program and 6,801 in opposition. On the proposal to adopt a one-contract per farm program in 1936 dealing with grains and livestock, the contract signers' vote was more evenly divided, 11,895 voting for and 11,281 against.

In 30 counties where farmers who did not sign contracts were allowed to vote, 387 of the non-signers were in favor of continuing the corn-hog program in 1935, and 386 against. On the question of a 1936 program for grains and livestock, 258 non-signers were in favor and 422 opposed.

The referendum on these proposals was conducted at local meetings in every important corn and hog producing county of the state under the supervision of community corn-hog committees. The returns from this referendum will be used by the Agricultural Adjustment Administration in developing future policies for agriculture.

Commenting on the referendum, Professor Boss said, "I believe that the vote on continuing the corn-hog program in 1935 represents contract signers' attitudes fairly, but I doubt if the vote on the 1936 grain and livestock program represents this group's best thought. I believe if this question were more thoroughly understood, a much larger percentage of contract signers would favor it.

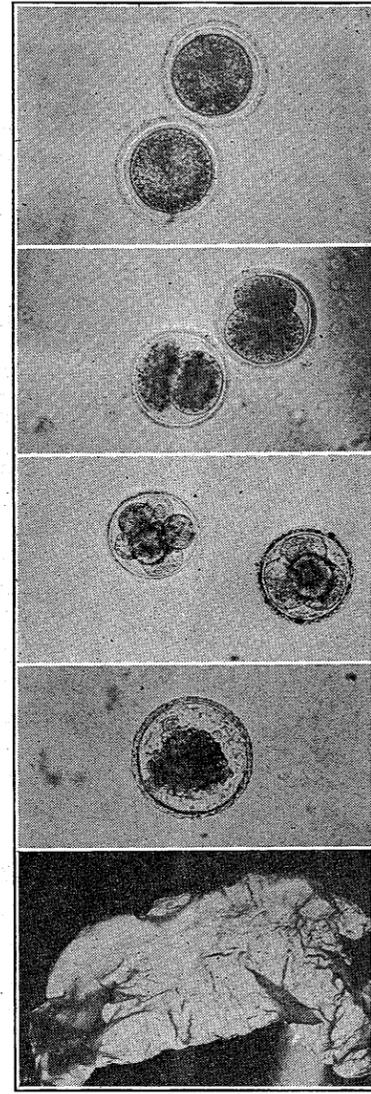
"In my opinion, a one-contract-per-farm program would not restrict the production of any basic commodity greatly, with the possible exceptions of corn and wheat, but would give farmers much latitude in planning their farming operations. It might require them to raise less feed grain and more grass, but this development is bound to come anyway unless world conditions change.

"Another reason for the large amount of opposition to the proposal for a one-contract-per-farm program is probably that farmers dislike to commit themselves on questions of national policy so far in the future."

Freshman Is Fourteen

Eugene Kohner, fourteen years old, a graduate of Central High School, Duluth, is a student in the University of Minnesota, the youngest now enrolled and believed to be one of the youngest ever to have been enrolled. Kohner is a freshman in the College of Science, Literature and the Arts.

Sheep Embryo Cell Division Progress Shown



From top to bottom these cuts show five stages in the development of a sheep "egg" from the earliest to the first formation of a foetus, the tiny spot at the top of the lower picture.

Scientist and Photographer Do Research

(Continued from page 1, column 4) were found at once. The search for others developed difficulties, for nature is not absolutely regular in the sense that a clock is, and an animal killed at the time when the egg should be in the eight-celled stage might be found not to have reached that stage, or recently to have passed it. The meat of the slain animals was kept in the university cold storage plant for sale to campus cafeterias and dormitories, so there was no waste.

The tiny egg, barely visible to the naked eye even after it has been mounted on a slide, presented considerable difficulties in the matter of recovery. Picking it up had to be done with the greatest care to retain the perfect original form for the photograph. For this and for the staining and mounting of the slides a skillful technique was worked out by Dr. R. T. Clark, who did much of the actual work under Professor Winters' direction, and his assistants, Willard Green and Miss Catherine Barrett, graduate students.

The micro-photographs, taken by Venning P. Hollis, university photographer, are remarkable for their detail, clearness and lighting. Every element needed to make the slides and pictures valuable is clearly visible.

"If a meat animal's life is measured from the time of conception to the time of slaughter, from one-third to one-half of the period is spent in the womb, prior to birth," Dr. Winters explained. "Most of the studies of sheep and beef animals have been made after birth, and most of those in the period before birth have been in the foetal stage. The purpose of our research is to find out more about a stage of development that has been little considered, and to picture it accurately."

Eighty-seven different stages have been photographed in the pre-natal life of the sheep. Dr. Winters and his assistants are now at work on a similar study of beef animals.

Dr. Winters has charge of animal breeding in the division of animal husbandry. His work will make a contribution to medical science as well as to animal breeding, as he is able to obtain animal material that could not possibly be gotten with human beings. Furthermore, he says, the material from such large mammals as sheep and cattle are more significant with reference to human beings than is the material from typical laboratory animals, of which the guinea pig and the white rat are the most common.

workers so that they may attend this institution.

Dr. Coffman praised the system in the British national and imperial government which has developed the permanent, professional public servant, who in the ordinary ranks is under civil service but in the case of permanent under-secretaries of government bureaus has as permanent and secure a position as if he were retained by civil service. This policy, he said, eliminates jockeying and pull in the naming of public servants, and does away almost wholly with the spoils system. When a new government comes in as a result of partisan elections, the cabinet members are political appointments, naturally, they being "the government," but the great army of under-secretaries and civil servants carries on in the business of governing England just as if there had been no political change.

Municipal government in England he found more advanced, relatively, over that in the United States than are the procedures of the central government.

England is improving its economic position, Dr. Coffman said. Part of a general salary cut for public officials of ten percent has been restored. Taxes are high, but have been reduced somewhat, and this year the national budget has shown a surplus. The English have not followed the present American practice of widespread and lavish public expenditures.

British railways impressed the Minnesotan particularly. Their rates are one cent a mile everywhere, for passenger service, and the trains are crowded. A type of inter-line ticket has been developed which one may use on any railroad under certain circumstances.

President Says English Know Their Governing

Much Impressed by Things Seen in Civil Employment Study

England, with hundreds of years of democratic government behind it, knows the importance of retaining in government service thoroughly trained and unpartisan employees, who continue to handle the tasks of efficient administration whatever party goes into power, said Dr. L. D. Coffman, president of the University, when he returned recently from a visit to the British Isles.

Dr. Coffman went to England on behalf of the Commission on Personnel in the Public Service, formed by the Social Science Research Council. He is the commission's chairman. The commission is making a sweeping investigation of the type of employees in public service, national, state and municipal, and hopes to make recommendation looking to its improvement.

"The English city clerk is a person who goes into that calling as a life work and handles it on a professional basis," Dr. Coffman explained. "Good city clerks (they pronounce the word 'clarks') are chosen by the city councils and their opportunities do not lie in a single city. Other cities try to hire them away from those where they are employed, and they themselves often seek to improve themselves by becoming city clerks in larger communities. Numbers of them are university graduates. They have had the advantage of a broad, liberal education and are fitted to deal impartially with many matters that we in America decide on a basis of politics, and in some instances, unfortunately, one of graft."

English labor organizations have progressed farther than most of those we have in the United States, and now British labor has set up a school to which men from the union ranks may go for additional training. This year the unions have appropriated one thousand pounds with which to give scholarships to unusually able

Facts Not Dogma Rule Liberal

(Continued from page 1, column 5)

dents in college as a social misfortune and a social burden which should not be tolerated. I do not belong to that group. I look upon their presence in college as one of the most auspicious circumstances of our changing life. I like to think that they have come here, for example, to find out, if possible, how to adapt our political institutions to the advances that have been made by science, technology, and the use of power. I like to think that they are here to learn, if possible, how the inventive genius of man may be used to its utmost. They are here, I hope, to study the ways in which the standard of living may be steadily advanced, ways that carry with them the assurance that all may participate in the benefits and reap the full human advantage that may accompany a steadily advancing civilization.

Surely they are here to study the economic institutions and processes that should be established to avoid depressions, insure employment, and eliminate poverty. Surely hundreds of thousands of young men and young women are in college primarily to fit themselves for the regeneration of a nation through education.

I know full well that the changes that are occurring round about us have their dangers, and these must be studied, too. There is a threat in leisure which may express itself in misuse of opportunity. There will be persons at the University who do not thrill with the challenge of their opportunity; they will look upon college life as a form of leisure and will leave the University, sooner or later, no better, in some instances worse off than when they came.

Another danger that civilization faces is closely akin to the danger that arises out of an abuse of leisure; it is the danger that we shall not appreciate the fact that every time science makes a contribution to industry, less knowledge is required of the private citizen than before. He does not need to know so much to run the industry.

On the other hand, every time science makes a new contribution to teaching, to medicine, to social welfare, to culture, more and more learning is required, if the average citizen is to benefit by the new knowledge.

So I think that students come to college to study and to find out, in so far as it is possible, how to solve the problems of their civilization and how to use the knowledge of science, of the professions, of industry, to minister to their comforts and needs.

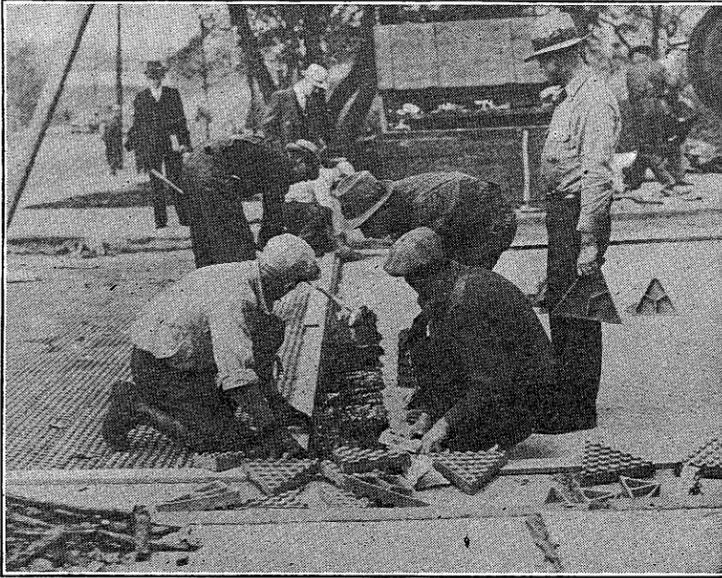
I hope they come, too, to orient their minds as to man's place in the universe, to make their philosophy more solid, and to become convinced that the humanities, including art, are not mere adornments of life as some are disposed to assume.

'Liberalizing' Not 'Freakishness'

We sometimes hear it said that one of the primary functions of a university is to liberalize the minds of the students. That is true, but by liberalizing we do not mean that students are to be encouraged to do freakish and irrational things. Some seem to think that liberalism is a license to be unconventional, to hold that history is valueless, and all experience discredited. The liberalism to which we refer is the liberalism which comes from learning more about economics, about history, about art, about literature. A truly liberal-minded person is one who decides issues on the basis of fact and sound policy rather than by dogma. It is always the ignorant who dogmatize. When college faculties make a plea for culture and liberal minds, they are appealing for something truly magnificent, for they have learned through the travail of years of hard-won experience that these are qualities that make life in the intellectual realms worth living.

How important it is in this day and age that we keep ourselves alive intellectually. To do so will help us to face fearlessly the changes that are occurring and that must continue to occur in our social order. Naive ignorance is dangerous enough, but confident knowledge of things which have ceased to be true, is still more dangerous. I know full well that there are those without learning who arrogate to themselves the ability to solve all sorts of problems. Frequently youth im-

First Cast Iron Pavement Laid



The School of Mines Experiment Station at the University of Minnesota is recommending use of cast iron for hard surfaced highways. Here is shown an experimental strip being laid recently on the Minnesota campus.

bued with false conceptions of leadership fall prey to this insidious belief. I have known young persons who thought they are emphasizing their individuality when they disregarded fundamental canons of taste, when they scoffed at fundamental rules of behavior, and when they scorned fundamental principles of politics and economics. Such persons do not understand that experience has its lessons to teach and age its wisdom to transmit. It is important—more important than at any other time—that higher institutions of learning and that those who are members of these higher institutions, shall hold fast to the lessons of experience while they are keeping their minds capable of operating freely in the changing world.

What May Be Accomplished

You students are here to learn more about the world in which you live, its instrumentation, its interests, its hopes, its possibilities, to acquire that foundation training which will help you to deal effectively with its problems, to fit yourselves for the successful practice of some one of the professions; above all to become tolerant and cosmopolitan in your thinking. Unless you are animated by an impelling urge to learn and by fairly definite purposes, these aims will not be realized.

A university is a place where there is a prevailing spirit of hopefulness. To be sure, it is a hope sometimes tempered with perplexity. This perplexity is due sometimes to the fact that universities have not had time to think about the causes of certain changes and sometimes to the fact that research essential to their understanding has not been carried on. Whatever right we have to hope for substantial progress toward a better life will depend upon the outlooks, breadth of knowledge, and fundamental understanding that the educated possess.

A few days ago I said that I thought there was something anomalous about welcoming new students to the University. It is not that I wish to be ungracious when I meet a strange person. It is that I feel the students of the University are not the guests of the institution; they are not mere visitors; they are here for exactly the same purpose that the staff is here; they are here because the people maintain the University for the purpose of serving the state through the improvement and advancement of human learning. The taxpayers of the state of Minnesota do not maintain this University primarily for the benefit of students who are here. A student is just an incident in the purpose that animates the taxpayers in maintaining the University. The University is maintained with the distinct understanding that it will study questions that relate to economics, to social relationships, to taxes and taxation, to international relations, to everything which in any way ministers to human life. The people of the state maintain the University for the purpose of broadening the cultural outlook and interests of the inhabitants of the state, and they propose to do this partly, generation by generation, by opening the doors of the institution to the youth of the state who come here

Pavements of Cast Iron Blocks May Help Low Grade Ore Market

Nine on Faculty Added to List Of Science 'Stars'

Nine Minnesota scientists have been added to the list of members of the University of Minnesota faculty whose names are "starred" in the volume, "American Men of Science," 1933 edition. The book is published every six years, and since 1906 when it was begun, thirty-seven Minnesota faculty members have been listed. Of these thirty-seven, twenty-three are still teaching at Minnesota, including the nine recently added.

Men honored in the 1933 edition, as announced by President Lotus D. Coffman, are: Professors Dwight L. Minnich, head of the department of zoology; John E. Anderson, head of the Institute of Child Welfare; William A. Riley, head of the division of entomology; Donald Paterson, department of psychology; William S. Cooper, department of botany, R. B. Harvey, department of plant pathology; Edward A. Boyden, department of anatomy; Hal Downey, professor of anatomy; Isaac M. Kolthoff, head of the division of analytical chemistry.

Other active members of the Minnesota faculty who have won the star in "American Men of Science" are Dean E. M. Freeman, botany; E. C. Stakman, plant pathology; Dean Richard E. Scammon, anatomy; W. H. Emons, head of the department of geology; Frank F. Grout, department of geology; S. C. Lind, director of the School of Chemistry; R. A. Gortner, head of the division of agricultural biochemistry; F. J. Alway, head of the division of soils; John T. Tate, department of physics; Henry A. Erikson, head of the department of physics; J. F. McClendon, department of physiology, and from the Mayo Foundation, Drs. Roseman, Mann, Kendall and Rowntree.

Minnesota had ten men in the first edition, four were added in the second, nine in the third, five in the fourth, and now nine in the fifth edition.

Head of 'U' Mines Station Makes First American Experiments in New Field

Pavements of cast iron blocks, cast square or triangular, are seen by E. W. Davis, director of the School of Mines Experiment Station, University of Minnesota, as one of the next important steps in the development of American industry and the improvement of highway technique.

Slightly more expensive, but immeasurably more durable than other pavements, and also as nearly skid-proof as pavement can be made, the cast iron block has already begun to win favor in England, France and Germany, but has not yet been tried in the United States.

The University of Minnesota has obtained permission from the Minneapolis city engineer to lay an experimental thirty-foot stretch of the cast iron blocks at the foot of a hill on a campus street, and there its behavior, durability and properties of safety and convenience with respect to traffic will be studied.

Not only would the adoption of cast iron blocks improve American streets, but it would help industrial recovery materially, Mr. Davis believes. It would create a new market for iron ore, of which Minnesota has the principal American supply, and would lead to the resumption of operations in a large number of blast furnaces in the iron smelting regions of the country.

For his own state of Minnesota he sees also the possibility of developing an iron smelting industry. Although Minnesota is now the world's largest producer of iron ore it has but one steel plant, that at New Duluth, which produces chiefly nails and wire. Further production of iron and steel has been discouraged by lack of an adequate market for the industry's products. In Minnesota and other parts of the Middle West would experiment with the installation of iron paving a smelting industry would rapidly develop in Minnesota. The ore would be at hand, without the addition of costly freight, and coal can be shipped down the lakes from Ohio points at low transportation costs.

Of the cost of cast iron pavement, the report says: "In England the cast iron sections used in these pavements cost about \$30 per ton. In some localities in the United States these sections could be manufactured at two-thirds of this cost. At Birmingham, Ala., for example, the price of pigiron is normally about \$14 a ton and on a quantity production basis it might be possible to cast these blocks directly from the hot metal from the blast furnace or mixer. Pigiron can be made at Duluth or other points on the Great Lakes for about \$16 gross ton. Allowing \$4 per ton for casting the shapes required for paving purposes gives a cost of \$20 per gross ton or \$18 per net ton."

From this it is figured that the new type paving could be laid and covered with asphaltic filler for about \$3.35 per square yard of surfacing. This is about one-third more than the cost of brick pavements.

In foreign countries the pavements have been used chiefly at points of heavy wear. The new tunnel under the Mersey river at Liverpool, nearly three miles long, has been paved with these blocks. Bus stops, heavy traffic corners, bridge approaches and the like, have been paved in England, France and Germany.

Mr. Davis's report lists the chief advantages of cast-iron pavements as follows: Skid proof; will outlast granite blocks or brick; distribute the load over the cement base; easily taken up and relaid; do not chip, shrink, swell, nor develop frost cracks and boils; make action of automobile brakes super-effective and cause no increase in tire wear; clean, sanitary and glare-proof; not affected by grease and oil; quickly laid by unskilled labor.

Use of the new pavement in England dates from 1928. In that country cast iron has been laid between street car tracks in a good many places.

'U' Theater Plans Five Productions

A series of five productions, one each month from November to April, January excepted, will be presented this year as the fourth season of the University Theater under the direction of Professor A. Dale Riley and L. Clement Ramsdell, assistant director. The play to be given in March will be the premiere of an original script. This still remains to be selected.

A revival of "After Dark" by Dion Boucicault will begin the season, November 6 to 10. George Bernard Shaw's satire, "Major Barbara" will be played December 4 to 8, and the play for February 5 to 9 is to be "Both Your Houses," the 1933 Pulitzer prize play by Maxwell Anderson.

Edward Sheldon's "Romance" will conclude the season, opening April 9 for a five days run. The University Theater is under the department of speech, of which Professor F. M. Rarig is chairman.

Twenty Forswear Use of Tobacco

Twenty boys at the University of Minnesota have filled to capacity a self-help rooming house on East River Road for which it is provided that the occupants must neither drink nor smoke. Drinking is forbidden on all university property, but smoking is not.

Money to redecorate the old residence that is being used was provided by Anthony Zeleny, professor of physics, a sworn and outspoken enemy of the use of tobacco and a convinced exponent of the harm that nicotine will do to the human system.

To reduce expenses the men who live in the home will make their own beds, keep their rooms tidy, wash dishes and windows, and slick up the living and dining rooms. Mrs. E. B. Gridley cooks and serves as house mother.

Boss Heads Sigma Xi

Prof. Andrew Boss, vice-director of the Agricultural Experiment Station at University Farm, will serve this year as president of Sigma Xi, the Minnesota chapter of the national honorary scientific society. He has been elected to succeed Dr. S. C. Lind, director of the School of Chemistry. J. W. Buchta, associate professor of physics, was elected vice-president; Henry Hartig, associate professor of electrical engineering, secretary, and Professors William A. Riley and W. L. Hart, directors.

presumably challenged by the opportunities available for them. While a student may be an incident so far as the state is concerned, so far as he himself is concerned, this is his supreme opportunity—once grasped, it lays the basis for fine living and community leadership; once neglected, it is gone forever.

Two Towns Claim Stanislaus Kostka, Plunging Fullback

The dream of a 14 year old boy who sat in the stands and watched such football heroes as Herbert Joesting and Bronko Nagurski write their names into the pages of Minnesota's football history is coming true.

When Stanley Kostka of Inver Grove, near South St. Paul, was a high school lad he cheered Minnesota on from the section allotted to prep teams at Memorial Stadium. Those were the days when big Herb Joesting was smashing his way through the Western Conference with his convulsive, jack-knife dives; when Bronko Nagurski was playing tackle and fullback and doing an All-American job at both.

Kostka dreamed of the day when he might emulate the deeds of his two heroes. Nagurski, especially, fired his imagination. The giant "Nag" completely captured his fancy by his mighty deeds on the gridiron and he determined to play on the same team and field that Nagurski did.

Now he is achieving his dream, at least in part. Maker of six touchdowns in his first two games for Minnesota, Kostka has gained 212 yards in 26 plays for an average of slightly more than eight yards to become a new threat to Gopher foes this fall.

A driving, colorful lad of Polish-Bohemian extraction, Kostka runs with a rolling gait that thrusts tacklers aside or carries them along in a vortex of churning legs. Add to this a fiery ambition and a sturdy 210 pound body that moves with surprising speed and agility and you have a picture of the young man who has the citizens of his home community in an uproar.

It happens that both little municipalities claim Kostka. His parents live on a small farm in Inver Grove and he attended South St. Paul high school. Ever since high school days he has been the pride of the vicinity and now both are seeking a showdown.

MINNESOTA CHATS

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University Party Latin Department Guests on River Head Appointed

Dr. Mayo Shows Them Newcomer Has Directed
Waterways Developments Research of American
from "North Star" Academy

A group of about twenty-five, made up of members of the University of Minnesota Board of Regents and their wives and several members of the university administration, were guests of Dr. and Mrs. William J. Mayo for the fall cruise on the Mississippi River aboard the cruiser "North Star" whereby Dr. and Mrs. Mayo entertain them each fall. Starting from Wabasha, Minn., Sunday morning, October 6, the party went down as far as McGregor, Iowa, and came home Monday evening by train from Prairie du Chien, Wis.

An ardent supporter of upper river improvement, Dr. Mayo pointed out to his guests the splendid system of locks and dams that is being installed by the federal government from Hastings down. He expressed an opinion that tourist travel up the river valley will be multiplied many times when the extended lakes behind these dams became known for their picturesque beauty, surmounted by the graceful Mississippi bluffs. It is his opinion that tourists will eventually travel the upper Mississippi much as they now use the Rhine, many going by boat in addition to those who travel by motorcar.

Dr. Mayo pointed out that recent fall rains have raised the Mississippi about five feet, the resulting water level in the stream being slightly above normal.

Institute Will Continue General Business Index

Although most of the projects carried on the Employment Stabilization Research Institute at the University of Minnesota have been wound up as the supporting gifts expired, the Index of General Business in the Northwest that has been conducted for the past two years will be continued.

This decision has been made because the index is the only one now published for this region that brings together all business factors in a weighted index that shows the complete picture in a single graph.

Laurence R. Lunden, editor of the index, points out that "readers have had easy access to data on bank clearings, carloadings, livestock slaughtered, and the like. The Monthly Review of Business Conditions issued by the Minneapolis Federal Reserve bank presents these data. Several other agencies publish data of particular interest to people in the Northwest. No individual or institution, however, has combined the several series of data into a composite index which in a single figure contains a significant measure of business conditions in the Northwest."

The task of consolidating the many charts and graphs into a single figure has been a difficult one, and at present the index has been brought only to July, 1934, but Mr. Lunden expects soon to have his index up to date, in which state it will be of greatest current service. For July it stood at the figure 77.1 of normal as compared with 74.1 in June and 75.7 for July, 1933.

Because it takes into account the year to year trend of business, the seasonal movements of business and the cyclical fluctuations, the General Index is based on a computed normal, rather than on a basic year, such as is used in so many statistical graphs. The graph has touched 100 percent twenty-one times since January 1919, on the way either up or down.

Marbury B. Ogle, professor of Latin and head of the department of Latin, a new member of the University of Minnesota faculty, addressed the faculty of the College of Science, Literature and the Arts at its first meeting of the year, October 1. He succeeds Professor J. B. Pike, who retires at the age limit after serving as a Minnesota faculty member for forty-four years. Professor Pike's first appointment came in the fall of 1890 when he became an instructor in Latin at the munificent salary of \$20 a month. For some time before his retirement he was head of his department. One of the best known members of the Arts college faculty, Professor Pike will now devote his time to making translations of Latin works that have caught his interest during years when his teaching schedule kept him from getting around to them.

Professor Ogle, a graduate of Johns Hopkins University, from which he took his Ph.D. degree in 1907, comes to Minnesota from Ohio State University. For the past three years, however, he has served as director of research for the American Academy at Rome. He is married and has three sons, two of whom will enter the university.

Other members of the Arts College faculty who spoke at the get-together dinner were Professors J. W. Buchta of the physics department, Oscar Burhard, department of German, G. P. Conger, department of philosophy, R. M. Elliott, department of psychology, and Elizabeth Jackson, English department.

'Bettersons' Will Go on Air Again

"The Betterson Family," widely known in Minnesota as the imaginary group used by the Institute of Child Welfare at the university for typifying important situations in child development, will again travel the wave-lengths of WLB, university radio station, to visit hundreds of Minnesota homes this fall.

The talks will be concerned with everyday adventures of typical families living in the Bettersons' neighborhood. They are being written and presented by Mrs. Pearl T. Cummings, instructor, and Mrs. Marion L. Faegre, assistant professor in parent education.

The program will be given Thursdays at 11:15 a. m. The wave length of WLB is 1250 kilocycles. Through November the following discussions will take place: October 18, "What shall we do about Halloween?"; 25th, "Solitary vs. Social Play"; Nov. 1, "Enjoying Life or Enduring It?"; 8th, "Do you love your children wisely, or too well?"; 15th, "How can I study effectively?"; 22nd, "Daydreaming"; December 6, "What's all this talk about negativism?"; 13th, "An ounce of prevention"; 20th, "Going into junior high."

A further series will be developed for the winter period.

Alumni Choose Safford

Orren E. Safford, Minneapolis attorney, a graduate in the Class of 1910, has been elected president of the General Alumni association of the University of Minnesota for the coming year. Safford, who is widely known, was captain of the 1908 football team. Other officers will be: Vice president, Dr. Erling Platou; treasurer, Thomas F. Wallace; secretary, E. B. Pierce.

Characteristics of American Scholarship Described

(Continued from page 2, column 2)

German universities, serving the economic and industrial interests of the new empire after 1870, enabled it to overhaul England and outstrip all other countries. America was Germany's most apt pupil. Emerson and his prescription for the American scholar became an exercise for classes in English. The brooding Oversoul, one with all nature, had fled from American hills denuded of their forests, from streams harnessed to mill wheels and prairies turned into food factories. Man Thinking had concentrated upon a test tube or a ticker tape.

"Emerson lived to see American scholarship as we understand it well on the way to great things in a Harvard where Eliot had taken charge and in Johns Hopkins under Gilman, and the beginnings of things a few such as Fowell of Minnesota dreamed in the state universities of the Middle West. He did not live to see its most characteristic expression. That was reserved for the twentieth century."

Organizations of Scholars

Dean Ford next called attention to the modern characteristics that American scholarship has taken on in the co-operative researches of scientific councils and associations, and in the support given to scholarship by those unique and powerful new factors, the foundations.

"The chief feature that an observer of present day American scholarship would note is organization on a grand scale and in every discipline, and in the many subordinate divisions into which specialization has divided all the major fields of research. These subject lines of organization on a national basis are crossed and re-crossed by regional and state and local organizations in the same fields. A national organization of physicists or chemists or historians is only the most manifest form of scholars' organizations. They in turn are broken up into many more. Biology in its two great divisions, animal and plant, has nearly forty national organizations of the specialties in this field. Above even the most inclusive national organizations stand super organizations like the American Association for the Advancement of Science or the National Education Association with many sections and a membership so numerous that their annual meetings tax the hotel capacity of the largest cities. Their significance is as organizations of scholars rather than as organizations of scholarship. They are sometimes even cited as evidences of the extent to which American tends to divert or dilute scholarship by organization."

More Recent Organizations

"They are not so significant of what is really happening in research and investigation as are three great and more recent organizations which might be compared to holding companies, yet with independent operating functions of their own carried on over long periods and uniting in co-operative study many scholars of diverse disciplines upon any great and many sided problem. They are not only attempts to organize scholars but to organize scholarship. They have assumed the high responsibility of planning major movements along a wide front and of mobilizing all specialties and many specialists within their domain into a unified attack upon unsolved problems. They seek to cross-fertilize specialism by co-operation between allied disciplines. They command considerable funds when any major attack is planned and they support and direct the training of younger scholars by extensive systems of resident and traveling fellowships. They have headquarters and permanent secretariats that formulate plans for general staff approval and then keep the lines of attack and the supporting funds in motion.

"These three organizations for national planning in scholarship are the National Research Council in the field of the physical and biological sciences, the Social Science Research Council, an incorporation of three representatives from each of the national societies in history, economics, political science, sociology, anthropology, psychology and statistics, and the American Council of Learned So-

cieties which includes a number of fields in the social sciences and adds the humanities in the widest sense, including philosophy, languages and literature, and archaeology. To these might be added the recently reorganized American Council on Education. Among them these four divide and include the whole range of American scholarship. They have some joint membership, some common activities and an occasional unofficial observer from one group attending the sessions of another. They are clearly not rivals except that some unkind interpreter of what I said to Sigma Xi a year ago might point out that the constancies of the National Research Council are bent on upsetting the world faster through discovery and invention than the social scientists can adjust mankind to the necessary changes; and all that may be left, if the resulting strain blows up civilization, is that the archaeologists from the Council of Learned Societies will have the melancholy pleasure of gathering up and labeling the fragments.

The Educational Foundations

"Coincident with these organizations of scholarship and even preceding them is the establishment of an even more distinctly American manifestation of wealth combined with faith in education and scholarship—I mean the great foundations set up in many cities but centering chiefly in New York. The total list of more than one hundred and ten have an aggregate endowment approximating a billion, and I do not believe we are yet at the end. In no other age or land have such tremendous funds been mobilized for the support of research and the training and application of scholarship. They are organized like great universities without faculties. They do not, in the main, operate directly in research and teaching, but rather make possible the programs and efforts of scholars in other university organizations or in national groups such as the major ones mentioned above. Their place in the picture of American scholarship is well in the foreground and their responsibilities for its future development equal or exceed their great resources.

"To be a trustee or responsible staff member of such a foundation is a place of power in determining the future of American education that finds no parallel in the cultural or social life of any other nation. The policies and decisions of the great foundations are determining in our day almost as much as the universities to what extent the mobilized scholars of America, not the individual prophet of Emerson's vision, will make an impress upon American civilization and institutions in the twentieth century. As the operations of many of the greatest of these foundations are not limited to our own country and their funds are being allotted to mature scientists and to scholars in training in all lands, their ultimate influence is limited to no century and to no one nation.

Typical Co-operative Researches

"The contrast between the American scholar of Emerson's vision and the one we know today as a contributor to co-operative researches would be complete only if we described some of the many far flung investigations now in progress. One might choose any field within the compass of the three major organizations. I think first of the study of sex directed by the National Research Council. Its origin lies in the experience of a man of wealth on a grand jury that had to investigate prostitution. Appalled by what he had learned, he set aside a sum to investigate the biological rather than the social aspects of a basic phenomenon of life. That study to my knowledge has been under way for ten years. Its centers and co-operating scholars are as far separated as New York, Chicago and California. This study, like the equally significant one on drug addiction, is planned and co-ordinated by a competent advisory committee. The contributors are not mere subordinates or cogs in a machine. They are outstanding scholars in many fields whose independence is jealously guarded but whose labors fit into the joint enterprise.

"In the seventeenth century a French scholar like Du Cange might undertake single handed a dictionary of medieval Latin. In

our day, its revision is the co-operative task of hundreds of scholars in many lands. Sixty years ago van Ranke single handed and half blind began a History of the World in his eighty-first year. At his death ten years later he had reached 1500 in nine stout volumes. A similar task undertaken seriously today involves scores of scholars in many lands combining to produce the serried volumes in the Cambridge history series.

"The Social Science Research Council, now ten years old, has expended in that decade three million dollars, most of it in support of co-operative studies of the social and economic problems confronting American society. The annual reports of these organizations, significant as they are, are but a partial picture of organized research in America. One finds it on every great campus where endowments or gifts are at the disposal of the university staff organized in councils, committees and institutes. Certainly no one at the University of Minnesota should want for examples when so many of the staff are in service on nationally planned researches and where our Employment Stabilization Institute has given in the past three years a brilliant example of the co-ordinated effort of many men and disciplines in studying such a disturbing phenomenon of the capitalistic system as the insecurity of labor and the equal insecurity of heedless industries.

What of Academic Freedom?

"At the opening of this address I asked and have sought to answer certain questions about the historic address of 1837," Dean Ford continued. "Its main philosophy explained how it affronted many in the smug Unitarian Harvard audience. The criteria Emerson set up for the scholar, the training he outlined, were those of his own philosophy, not of scholarship as men understood it then or have understood and exemplified it since. The characteristics he felt essential have in no visible sense been the characteristics of American scholarship in the last century.

"There remains the question I did not ask. It has, however, its proper place at the conclusion of any such address as this to young scholars. What significance have the words of Emerson to you, to any reader a century later? Certainly it is something to rise even for a moment to new intellectual levels with a great poet and essayist. That elevation of the spirit Emerson's address shares with all great literature. It is sheer gain to stand as you do in reading his words in the presence of a Man Thinking. Such men are so few, so precious, so in danger of being overwhelmed by the turbid floods of speech and print, that we must seek them out and turn aside with them into some quiet bypath where we can hear their voices. When we do, it is to listen to one who interprets to us our own noblest impulses, our abiding heart's desire. It is this that Emerson can still do for each of us according to the measure of our spiritual apperception.

"We turn from all the triumphs of a century of scholarship in ways unknown to Emerson to reaffirm with him that the American scholar today, tomorrow must be free. What he claimed for the scholar's sake alone we claim for the sake of civilization itself in a world where nation after nation has condemned the Man Thinking to silence or exile. And this because his greatest power is not to change the material world but to change status of mind. If stupidity and dumb acquiescence are the price of physical survival they are equally a sentence to spiritual torpor and death. The complexities of science are being solved by the co-operation of free scholars. The complexities of our political and social life can be solved only by the co-operation of free men, of free men thinking. If the American scholar today can be assured the freedom that Emerson demanded as his birthright, a freedom that all ages have shown was even more essential to the orderly evolution of society, then, and then only, will 'this continent . . . fill the postponed expectation of the world with something better than the exertions of mechanical skill'."

MINNESOTA CHATS

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General College New Venture at U Center of Interest

Dr. MacLean, Its Director,
Sought by Many to
Explain Plan

ENROLLMENT NEAR 1,000

Battery of Ten Examinations
Has Been Developed to
Test Accomplishments

Apparently the University of Minnesota is doing well something that has never been done before, and as was true of the man who built the top notch mousetrap, the academic world is beating a path to Minnesota's campus to learn about the new General College. Meanwhile the college has grown to an enrollment of nearly 1,000.

It's no exaggeration to say that nationwide interest has been aroused by the Minnesota plan of providing education for the large numbers of students who are not primarily of the academic mould. Dr. Malcolm MacLean, director of the college, is in wide demand as a speaker, and what they always want him to discuss is the unique new educational plan at Minnesota. Nor do these enthusiastic inquirers refer to it as an experiment or experimental college. They think of the General College as something real, a performing program that is doing its effective part to mould a new educational service.

In a single week recently the University of Pittsburgh and Massachusetts Institute of Technology sent representatives to Minnesota to study the college and Minnesota's methods of student testing, while at about the same time Dr. MacLean was called upon to speak at Iowa State College, Ames, at the University of Illinois, and before the Association of Urban Universities, meeting in Louisville, Ky. And there are many other examples of the same thing.

What Draws the Interest?

What, in simple language, is this new General College that is attracting so much interest? Quite evidently it is something new on the horizon of people who manage higher education, for their interest is real, not simulated.

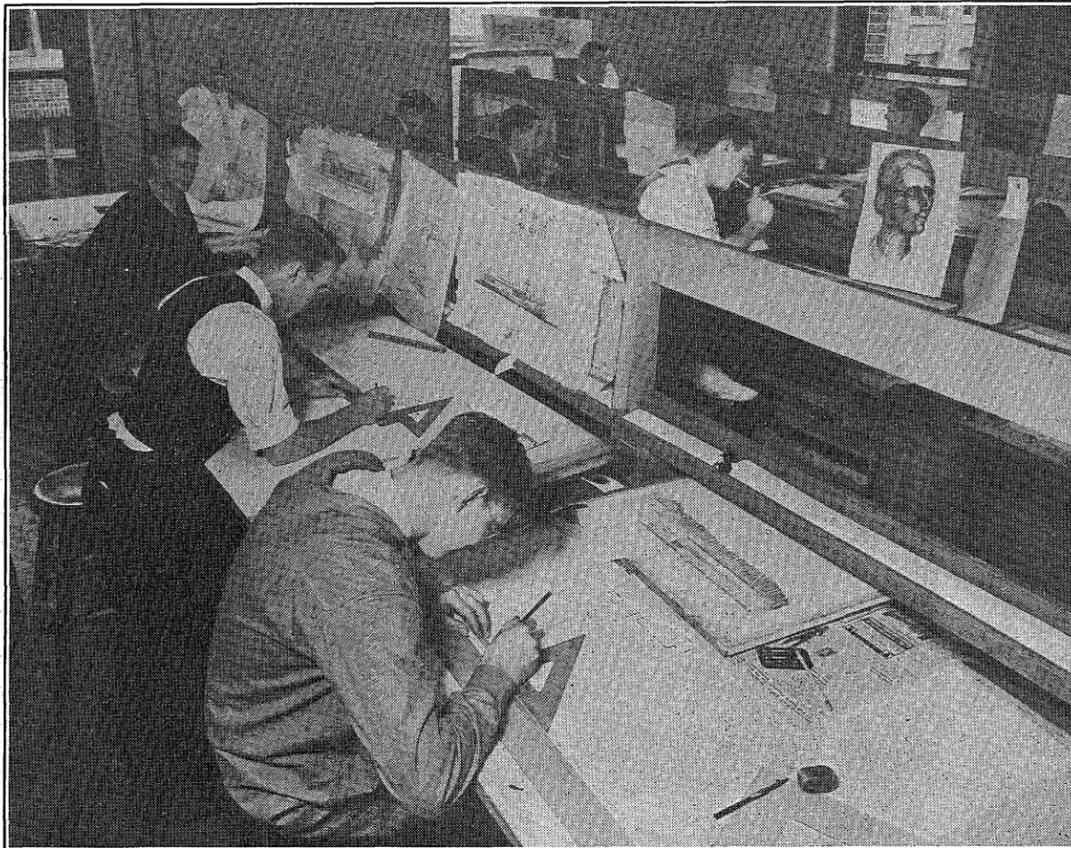
"We can start with the basic problem, which is really that of student mortality—dropping out of college," is the way Dr. MacLean starts his explanation. "All of us know that the number of those who graduate is small compared to the number of those who enter. In state universities, generally, it has happened that about 48 percent of the students have dropped out before the end of two years, and more than 60 percent of those who enter never graduate. Private colleges that exercise a greater power of student selection than state universities can, have somewhat smaller losses, but on the other hand, they reject many students who have fine potentialities and should have a chance at higher education.

"The problem, then, is one of finding suitable educational procedures for large numbers of students who do not immediately fit into the established routine of college courses such as attract the student who is born to become a research worker, a professional man, or a teacher. Just because a student is not destined for the life of a scholar in the formal sense of that word is, however, no reason why courses of study especially adapted to him should not be worked out.

"At Minnesota we are tackling this problem first by finding out what kind of a person the student in the 'mortality range' may be. Various tests and examinations help us obtain this knowledge. So we get a basis of trying to understand what the youngsters are like. Then we ask ourselves, 'What are their immediate and lifelong

(Continued on page 3, column 1)

When It's Problem Time in School of Architecture



Students of architectural design take their work with such extreme seriousness that all come equipped with a box of aspirin when they assemble to tackle one of the "problems" that play a large part in the course. The usual procedure is to go to work on a problem and stay with it until it is completed. This leads to a great voicing of pseudo grief and many loud wails, the fact being that the students wouldn't miss their suffering for anything.

Six Rules for College Success Stated by Arts College Dean

Dr. J. B. Johnston Compiles
Advice and Gives Series
of Warnings Against Failure

Six rules for young men and women who would be successful in college were presented recently to upperclass students in the Rochester, Minn., high school by John B. Johnston, dean of the College of Science, Literature, and the Arts in the University of Minnesota. He said:

First, choose parents and grandparents who have intellectual interests and social responsibility, but do not make the mistake of thinking that money or financial position—or the lack of it—is a sure indication of fitness.

Second, have an absorbing curiosity about the real nature of things, and show energy and enterprise in trying to satisfy that curiosity.

Third, take an interest in your school work, learn how to study most effectively, and be sure that you graduate from high school at least in the upper half of your class.

Fourth, form the habit of reading a great deal in books, magazines and newspapers that tell you what you want to know. Then think over what you have read and form your own ideas about it.

Fifth, in college continue the studious habits you have formed in high school. Get recreation and gain social experience, but avoid cheap movies, tawdry radio programs, and college politics.

Sixth, throughout high school and college take a keen interest in current happenings and in public affairs, industrial, political, and social.

Tells of Student Guidance

Dean Johnston presented this list of rules at the end of an address in which he discussed the importance of education, both to society at large and to the individual, and described how the modern university, Minnesota for example, studies the individual with a view to guiding him into that field of intellectual effort for which he is best suited.

He urged the high school stu-

dent to realize fully the grave step he is taking when he decides upon the vocation for which he will prepare.

(Continued on page 4, column 2)

State Land Use Body's Report Is Distributed

Committee Headed by University President Makes Findings Public

The Committee on Land Utilization in Minnesota, appointed in 1932 by Governor Floyd B. Olson, who made President L. D. Coffman of the university its chairman, has prepared its final report, which has been published in book form, 266 pages, by the University of Minnesota Press. It will be described at greater length in the next issue of Minnesota Chats.

At the request of Governor Olson, Dr. Coffman last week directed the Press to send a copy of the report to every Minnesota newspaper and to state officials.

It is a fascinatingly interesting discussion of the problems of lands, water supply and uses, forests, climate, and the like in Minnesota, and of the relationships of these resources to the agriculture and industry of Minnesota.

Each of the chapters has been prepared by one or more experts, whose names and functions are stated. Some have been written by state experts and some by members of the staff of the University of Minnesota or the Lake States Forest Experiment Station.

Besides the chairman, members of the committee were C. K. Blandin, St. Paul; Richard Griggs, Duluth; E. G. Hall, St. Paul; Winfield Holmes, Wrenshall; A. D. Johnson, Bemidji; John I. Levin, St. Paul, secretary; W. H. McGenty, Duluth; A. J. Olson, Renville; Mrs. James S. Thurston, Minneapolis; Judson L. Wicks, Minneapolis, and Raphael Zon, University Farm. On the committee's editorial board were Professors William Anderson, Oscar B. Jesness and Raphael Zon.

President Makes Rottschaeffler Athletic Envoy

Law Professor to Follow
James Paige as Conference
Faculty Representative

Henry M. Rottschaeffler, professor of law, has been confirmed by the administrative committee of the University of Minnesota senate as a member and conference faculty representative of the Senate Committee on Intercollegiate Athletics, following his recent appointment by President L. D. Coffman.

Mr. Rottschaeffler becomes the successor of James Paige, professor-emeritus of law, who served as Minnesota's faculty representative to the conference from 1906 until the spring of 1934. He was born in Groningen, Holland, but came with his father's family to Michigan in boyhood. There he attended Hope College, Holland, Michigan, later taking graduate work in law at Harvard. He has been on the law faculty at Minnesota since September, 1922.

The highest committee in the



Prof. Henry Rottschaeffler

Eleventh Annual Dad's Day at 'U' Set for Nov. 17

Fathers of All Registered
Students Are Invited
to Attend

ASSOCIATION TO MEET

Visitors Urged to Look Over
Everything That Interests
on Campus

An event begun ten years ago which has proved to be increasingly successful as time has passed is the University of Minnesota Dad's Day, which this fall will take place on Saturday, November 17, when Chicago plays Minnesota in Memorial Stadium.

The father of every registered student has been invited to come to the campus on Dad's Day and to make the place his own, feeling free to visit faculty members, classrooms, dormitories, laboratories, the library, or any other spot or person that arouses his interest.

In a letter to all fathers, President Coffman said:

"Just ten years ago this fall we extended to the fathers of Minnesota students our first invitation to come to the campus as guests of the students and the faculty. Each year during this decade the interest in this event has grown, until now it is evident that Dad's Day is firmly established as one of the pleasantest traditions at the University of Minnesota. As time passes it becomes increasingly clear that both the university and the fathers have profited immensely from the yearly gathering; out of it has developed a better understanding of the many problems that confront us both.

"It gives me great pleasure, on behalf of the university, to invite you again this year to be with us on Saturday, the seventeenth of November, for our eleventh annual Dad's Day program. We shall be happy to have you visit us."

Each father will be entitled to reserve two tickets to the football game in the Dad's section if the mail order is received by November 14th. All visiting fathers are being urged to register at the Minnesota Union upon arrival, and to plan to attend the annual Dad's Day banquet, in the Minnesota Union at 6 p. m.

The highest committee in the morning will be devoted for the most part to visiting university buildings. Fathers who do not care to attend the football game will be given an opportunity to visit university buildings and points of interest. Following the football game there will be open house in the Minnesota Union at 4:30 p. m.

At that time, also, there will be held the annual meeting of the Minnesota Dad's Association.

Western Intercollegiate Athletic Conference, true name of the "Big Ten" is the faculty committee, composed of a faculty representative from each of the member institutions. The constitution of the Western Conference provides that it must be under faculty control, and this committee performs that service. It is primarily a law or rule making body. Under the rules it makes the conference is administered by the directors of athletics and by Major John L. Griffith, the "Judge Landis of the conference."

Citing the extent of faculty control, at the time he made the appointment, President Coffman pointed out that all schedules, for example, are approved by the faculty senate at Minnesota. Routine administration of the athletic affairs of the university, however, are conducted by the director of athletics, to whom the senate committee on intercollegiate athletics is now an advisory body.

Professor Rottschaeffler is widely known as the man who drafted the Minnesota state income tax measure, which was enacted into law by the 1933 Legislature.

Professor Sees No Chance Of Townsend Plan Working

Economist, E. P. Schmitt, States His Views on Universal Old Age Pensions

The following statement concerning the Townsend Old Age Pension plan was made by Emerson P. Schmitt, assistant professor of economics, at a recent debate in the Como Congregational Church. It is herewith reprinted:

By Emerson P. Schmitt

Few people doubt the desirability of some form of old age pension system. The majority of people in the United States who reach the age of 65 are in a position wholly or partially dependent on charity or relatives. Old age with its insecurity and uncertainty is largely a product of our urban civilization.

Over half of our states have adopted old age pension plans. People, to be eligible, must in all cases be in a state of virtual poverty, however. The Townsend plan would provide a pension of \$200 a month for everyone over 60 years of age providing the sum would be spent in 30 days and the recipient would give up all remunerative employment. The pension payments would be financed by a sales tax on all business transactions.

Admirable as the ideal of this plan may be, students of finance and economists are unanimously agreed that the plan can not work. It is somewhat tragic that millions of old folks are flocking to the Townsend meetings with great faith that the plan will be adopted by Congress and will work. These people are most certain to be disappointed, however much we all would delight in seeing them each in possession of \$2,400 a year.

Defects of the Plan

At present there are about 10,000,000 people in the United States over 60 years of age. (Census of Population, 1930). If each of these persons complied with the requirements of the plan the cost, exclusive of administration, would be \$24,000,000,000 a year. (\$2,400 times 10,000,000). Undoubtedly several millions of these people would prefer to rely on the income from their employment and would therefore be ineligible. The Townsend promoters estimate that about 8,000,000 people would avail themselves of the plan at once. This would bring the cost down to about \$20,000,000,000. This constitutes nearly half of our total national income for 1932. (National Bureau of Economic Research, National Income, 1929-1932, p. 9, 1934). Thus 8,000,000 people would receive half the national income while the other 115,000,000 people in the country would have to divide the other half of the income between them.

In order that this \$20,000,000 could be transferred to the old people the plan calls for a tax levied on all business. This would amount to a tax of \$160 for every man, woman and child in the United States; or, about \$800 per family of five. In 1932, we had a per capita tax of about \$70 (Paul Studenski; Tax Systems of the World, 1934, p. 269). The Townsend plan would raise the burden by 225%. Virtually all of our governments, local, state and federal, have been unable to balance their budgets without borrowing for nearly half a decade. They could not meet their expenses by means of taxation. There is a limit to tax-paying ability. Yet the Townsend plan with this stupendous increase would break down our tax system completely. The funds could not be raised.

The Townsend people deny the above analysis on the ground that the plan would create new funds or new business to such a degree that the tax could be easily paid. If this is true there is no historical evidence for it. No country has ever taxed itself rich. The most glaring fallacy of the plan is this: The pension payments to the old folks are simply taken from the people under 60 years of age by means of the tax. Thus there is no net increase in purchasing power. There is merely a transfer of purchasing power from one group to the older group. Thus, if I receive an annual income of \$1,000 and the tax is 10%, I will, with my \$1,000, be able to buy only \$900 worth of goods and the \$100 tax will go to the old folks. This \$100 which the old folks now spent, I would have spent had

there been no tax. Thus there is no increase in net purchasing power.

The Townsend supporters claim that this plan will make jobs for some 8,000,000 unemployed by retiring those over 60. This is also wrong. About half of these folks over 60 are women and few of these women over 60 are gainfully employed. Of the 4,000,000 men over 60, about half are unemployed even in prosperous times. At present more of them are unemployed. Thus the plan at most would put to work, assuming the plan workable, only about from 1 to 2,000,000. But for every younger man put to work an older man would be retired. Thus there is no net gain in employment. The plan is also bad economically because it assumes the less work done the better. Sixty is, in general, too young to retire; every farmer, every producer of goods knows that the more work done, the more goods produced, the more each of us can have. A high standard of living depends on goods and services produced. No nation has ever become well off by the amount of goods not produced. Furthermore, many men, especially professional and businessmen, are at their best between the ages of 50 and 70 years. Then they have acquired the experience and the knowledge to understand and plan most effectively. The Townsend Plan would retire all this accumulated wisdom and experience. The world would be deprived of its benefits.

A final defect in the plan concerns the question of saving. Every farmer, every laboring man knows that he accumulates wealth, that is, barns, machines, houses, furniture, by consuming less than he produces. Our capital equipment comes from saving. People place their money savings either in goods or in a bank. The bank loans the money to business men who build factories and buy machines. Now, if we all can look forward to \$200 a month income after we are 60, few of us would do any saving for old age. Thus the purchasing power to create capital equipment would be lessened and there is no doubt that we would be able to tackle our great natural resources much less effectively with reduced quantities of machines and other capital equipment. The Townsend plan would invariably work in this direction.

All needy people should be well cared for, of course. But this removes the incentive to care for oneself whenever possible. This incentive has been important in the development of those qualities of initiative and energy of which Americans are so justly proud.

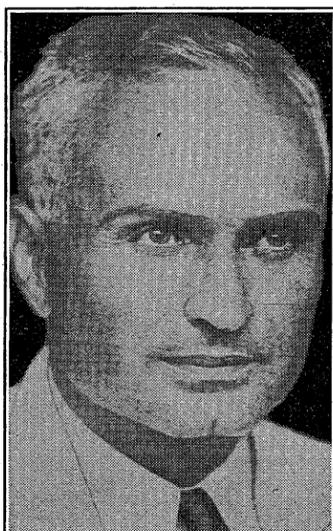
Sees Gain in Use of Radio

That the radio interests of every type favor more use of the radio in education in this country and it is bound to come was the message brought back to Minneapolis by President L. D. Coffman of the University of Minnesota, who had been in Chicago attending the meetings of the National Advisory Council on Radio in Education.

Broadcasting companies, radio manufacturing interests, representatives of the talent heard over the air, newspapermen and persons in the field of radio education were more nearly in agreement on a program than ever before, Dr. Coffman said. Most of the time was spent in considering ways of improving the educational programs.

He predicted also that a new attitude would be taken toward educational broadcasts. No more will they be cut off the air for the story of a prizefighter's loves, as was done to the University of California. The new type of educational broadcast will not be written down and made insultingly simple, either, Dr. Coffman said. No censorship will be maintained, and educational lecturers probably will be paid. Presidents Sproul of the University of California, Hutchins of Chicago and Scott of Northwestern, Miss Julia Abbott, John Finley of the New York Times and Secretary of the Interior Harold Ickes were among those present.

Three Minnesotans Taught by Williams Now Famed Coaches



In the three cuts above, Minnesota Chats presents three former Minnesota football players, coached by the late Dr. Henry L. Williams, who have become famous in the field of present-day football coaching. At the top is Minnesota's own Bernie Bierman, teacher of the team that last week won from Michigan 34 to 0 on the home grounds, the first time in modern history that a Gopher team has beaten the Wolverines here.

In the center is Clark Shaughnessy, coach of the University of Chicago team, and below is Iowa's new coach, Oscar D. "Ossie" Solem. Shaughnessy and Solem were right and left tackle respectively on the Minnesota eleven of 1912, and played fullback and end the next year when Bernie Bierman was at right half, substituting for his brother, Albert Bierman.

Shaughnessy gave Bierman a helping hand to the coaching heights when he took him to Tulane as an assistant. There Bierman succeeded Shaughnessy when the latter became coach at Loyola of the South, also a New Orleans school. Solem coached at Drake University before going to Iowa. Bierman has also coached at Montana and Mississippi, as well as at Tulane, where his big reputation was made.

In this year's schedule all three of Dr. Williams' former pupils are sending their teams against each other, Minnesota and Iowa having already played.

Justin Miller, dean of the Law School at Duke University, and formerly a member of the law faculty at Minnesota is now in Washington serving as a special assistant attorney general. He will help Solicitor General J. Crawford Biggs.

Commission on Public Personnel Holds Session in Twin Cities

President Coffman Heads Group to Study Millions on Public Payrolls

The Commission of Inquiry on Public Service Personnel, of which President L. D. Coffman of the University of Minnesota is chairman, conducted hearings in the twin cities on November 8 and 9.

Named to study the background, methods of appointment, efficiency, and the like of the millions who are on various public payrolls in the United States, this commission has been functioning since early this year. It has held hearings in Chicago, New York, Des Moines and many other important centers of population and of government activity.

The hearing on Thursday, Nov. 8, was devoted to the municipal group of employees and took place in the Nicollet hotel. Friday's hearings were at the University of Minnesota. State officers were heard in the morning and University of Minnesota people in the afternoon. Professor John M. Gaus of the University of Wisconsin, former Minnesota faculty member, represented the American Political Science association.

Besides Dr. Coffman the members of the commission are Louis Brownlow, representing the Public Administration Clearing House, Chicago; Ralph Budd, president of the Chicago, Burlington and Quincy railroad; Charles E. Merriam of the University of Chicago faculty; Arthur L. Day, director of the Geophysical laboratory in the Carnegie Institution, Washington, and Dr. Luther Gulick, director of research.

Among those who were heard were the following: Municipal Group, Mrs. Maude Struble, secretary, Minneapolis Civil Service commission; Harold F. Goodrich, comptroller, city of St. Paul; R. M. McCurdy, secretary, Duluth Civil Service board; H. R. Tinkham, chairman, Duluth Civil Service board; Carl P. Herbert, director, St. Paul Bureau of Municipal Research; J. R. Probst, chief examiner, Civil Service Bureau, St. Paul.

State Group: Carl R. Erickson, state commissioner of purchases; E. J. Pearlove, comptroller, commission of administration and finance; Mrs. Blanche LaDu, chairman, state Board of Control; F. T. Starkey, commissioner, State Industrial Commission; E. V. Willard, commissioner, State Conservation Commission; L. P. Zimmerman, state relief administrator; John G. Rockwell, state commissioner of education; N. W. Elsborg, highway commissioner; Harold Henderson, director, Minnesota Institute of Governmental Research; Ambrose Fuller, League of Minnesota Municipalities; George W. Lawson, secretary, Minnesota State Federation of Labor; Elmer E. Grebs, personnel director Farm Credit Administration; W. L. Day, vice-president, Federal Land Bank; Charles L. Pillsbury, Munsingwear Corporation; A. C. Godward, Minneapolis Civic and Commerce association; Gratia A. Countryman, Minneapolis Public Library; George M. Link, secretary, Minneapolis Board of Estimate and Taxation.

A group of members of the university faculty also were heard.

Social Trends And the Family

A series of three addresses on "Recent social trends affecting the family" will be given by Dr. Esther McGinnis of the Institute of Child Welfare, University of Minnesota, during November, to start a series on "Growing up in the world today" that will last through the winter and spring. The talks will be given over KSTP at 2 p. m. Tuesday. Topics for November and December will be: November 6, Trends affecting the family, democracy versus autocracy; 12th, changing position of women; 20th, leisure time and recreation; 27th, the Danish experiment in education; December 4, adult education and the emergency program; 11th, education for a changing world; in our schools; 18th, education for a changing world, in the family. The series will be continued through April 25th.

Drinking Will Hurt Football, President Warns

Because he believes that the game of football will be seriously injured if drinking at games becomes general, President L. D. Coffman of the University of Minnesota today called on Minnesota supporters to take a stand for decency at all Minnesota games.

"I have had reports that there has been a great increase of intemperance at football games throughout the country this fall," Dr. Coffman said. "Those who enjoy the game of football and the sportsmanship connected with it should protect their favorite sport by throwing their influence on the side of decent behavior at all football games.

"It will be hard to defend a sport, no matter how much we may enjoy it, if public games show a tendency to become public orgies. I hope the true football enthusiasts will see that now is the time to keep the game what it should be."

League Visitor Seeks Economic Data on Campus

Alexander Loveday, head of the division of economic information of the League of Nations, is in Minneapolis for a two day stay that is unique because he first saw the United States in this city. Instead of entering at New York or San Francisco he came across Canada and down to the twin cities from Winnipeg.

At luncheon yesterday he was the guest of President L. D. Coffman of the University of Minnesota, who asked a group of faculty men to meet Mr. Loveday and answer whatever questions he might have.

His principal interest in this state proved to be with respect to our attitude toward a long time policy for wheat growing. He said that in Canada the drought has blotted out of view the people's interest in a plan for wheat raising, so that now they are thinking only of future rains and big crops. Members of the Minnesota faculty told him that while wheat has become a minor item in Minnesota it is still important in the Ninth Federal Reserve district. They were of the opinion that here, too, farmers are somewhat overly hopeful of regaining lost world markets for this commodity.

Mr. Loveday is head of the section that issues reports of general use on economic conditions, industrial production, and international trade for the League of Nations. He said that his section is also holding meetings about every three months to which the finance ministers of a number of financially embarrassed nations are invited. At these sessions they talk over their problems with each other and have access to the advice of League of Nations experts.

To Help High School Teachers

The Commission on the Courses and Curricula of the North Central Association of Secondary Schools has delegated to a committee, of which Professor Earl R. Douglass of the College of Education of the University of Minnesota is a member, to study and make recommendations relative to the non-professional training of high school teachers. The committee, which met recently in Chicago, will give especial attention to the general and cultural training of all teachers and the broader and more thorough training of teachers in certain fields such as science and social studies.

Attend Iowa Induction

Malcolm M. Willey, university dean and assistant to the president, represented the University of Minnesota recently at the induction ceremonies for Dr. Eugene Allen Gilmore, new president of the University of Iowa. Mitchell V. Charnley, assistant professor of journalism, went from Minnesota as representative of Williams College, from which he was graduated in 1919.

Negotiate on Drill Credits

University Rule Already Provides Eighteen Point Scholastic Reward

Negotiations to bring the University of Minnesota and the War Department closer together in the awarding of credit for military courses still offered under the elective plan took a step forward recently when Pres. L. D. Coffman asked Registrar R. M. West to send to all deans a statement of the present policies with respect to credit.

It was found that a senate ruling provides that students in all colleges may receive 18 credits for work in the advanced military courses.

Not all colleges, however, are able to allow all 18 of these credits towards graduation because existing requirements in their specialized subjects do not leave room for 18 hours of electives. The university, therefore, allows credits in instances where the colleges, which are self-governing with respect to graduation requirements, do not.

Each dean will be asked to describe the policy of his own college on accepting these credits towards graduation. It was pointed out that in this respect the military department is in the same situation as many other departments. For example, many students take more music than they are permitted to count as credits toward a degree. If they do satisfactory work, however, they receive the credits in music.

General College New Venture at U Center of Interest

(Continued from page 1, column 1) needs?" And we have constructed our general college courses to meet those needs."

Important to Everyone

Dr. MacLean went on to explain that the problem of educating those who may not be destined for intellectual leadership is not only important to the students themselves, but also to those in the intellectual category, for, he said, it will provide a trained followership, a mass of citizens who understand how necessary it is to support and appreciate the activities of American researchers, discoverers and interpreters.

"Over the radio we hear about toothpaste because people understand toothpaste and go for it," he said. "When many of our great scientific discoveries are made they are covered up in such a way that a large part of the public never hears of them. This accounts for the lack of interest of which the scientist is often heard to complain."

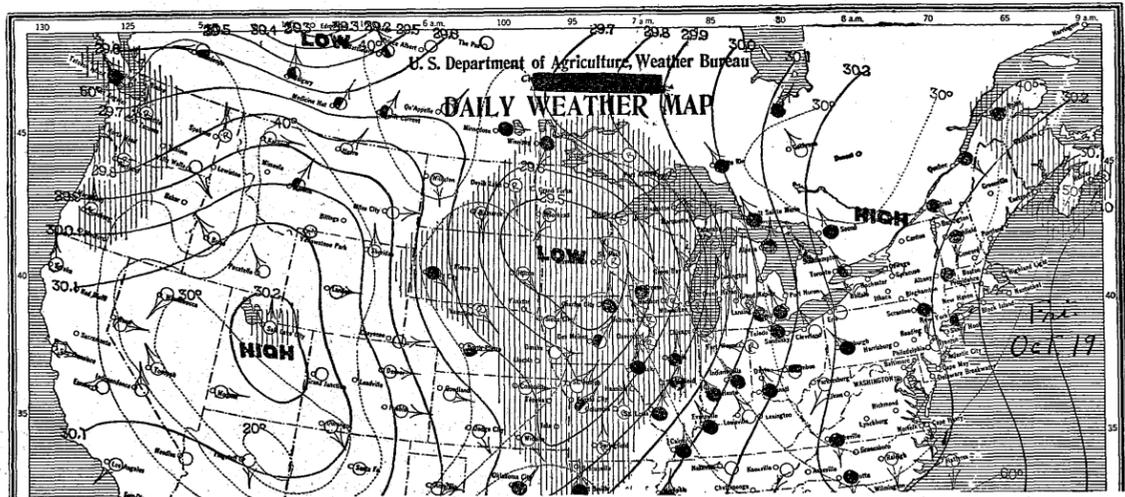
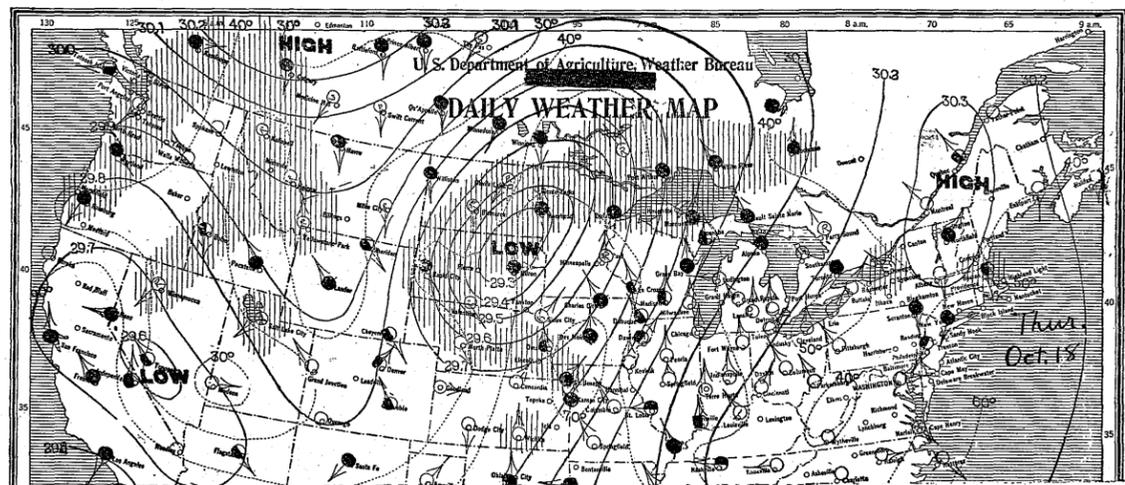
Each course in the general college is designed to give the student a picture of what its contents mean to him, as a living individual, right now, rather than to provide merely facts to be given back to the teacher in examinations, Dr. MacLean said.

"In line with this theory, our course in biology deals with the biology of the human being, and should help anyone who has taken it to understand human beings when the time comes that he is out making his own living. The course in medicine, an overview course, is designed to give a lawyer, for example, enough knowledge of medical procedure so that he can deal intelligently with a case in which that subject is involved. And so with our other courses. We try to interweave them with one another so that each makes a real contribution to the student's effectiveness as a human being and to his understanding of other human beings and of life."

Examinations Are Unique

The system of examinations worked out for General College students is both novel and very thorough. A graduate student sits in every lecture course and takes notes on all the lectures, besides doing all of the assigned and suggested readings. From each class all of this material is made available for those who are to draw up the final examinations. If a point is made in one class which should be significant to members in other classes, that question may be asked in several examinations. This is one of the ways in which

Meteorological Picture of the 'Rain of the Century'



the college is seeking to break down the "compartmental attitude" that sometimes sets one subject matter field off from every other, as if it were something distinct and apart from life.

In general, the examinations seek to show what a student knows, and then how he can use that knowledge in the situations he meets. The General College is interested in everything a student knows, no matter where or how he has gained the information.

First in the battery of examinations is a vocabulary test, for as Dr. MacLean points out, unless a student understands the words in which a lecture is delivered one can hardly expect him to grasp the subject matter. Next comes an examination on facts and information. This is followed, in turn, by one testing the student's knowledge of laws and principles. If, then, a student has the vocabulary, has gained a fair supply of information, and has some knowledge of principles and laws, it is safe to assume that he should be able to make the proper applications, and the fourth and most heavily weighted examination presents brand new situations for analysis and problems for solution. The student is expected to use the tools he has obtained. As an example of the methods used in this examination, one of the problems presented had been described just the day before the examination in an address by President Franklin D. Roosevelt. For such a question no student can have "crammed." Each must use his intellect and information in seeking a solution.

An examination on "attitudes" is one of the completely new contributions of the General College to education. Dr. MacLean believes that these have never been given before. The student is not marked on them, and their purpose is really to reveal the outcome of a given course of lectures. Does a student come from a series of lectures on economics believing in rugged individualism or in some other social philosophy? Does he come from biology an enemy of vivisection? Has he become a believer in astrology or palmistry as a result of his course in science? It is important to the instructor to learn what he is actually teaching young people as well as to understand what he thinks he is teaching them.

Gives No Mark of "Fail"

General College has dropped use of the mark "Fail." Students are graded on the percentile system, which rates them as compared to one another throughout the class from top to bottom, and thus introduces the factor of competition. Marks given are "Honors," "Pass," and, where some might use "Fail," it employs the grade of "W," meaning "With-

Plan Statewide Play Contest

Minnesota farmers and homemakers are going dramatic in the second annual statewide rural one-act play contest which will be held during the 1935 Farmers and Homemakers Week at University Farm, January 14-19. Some 40 counties are already vying for honors, with nine district contests already arranged at Thief River Falls, Park Rapids, Grand Rapids, Elk River, Morris, Windom, Mankato, St. Peter, and Red Wing. The winning group at each district contest will represent that district in the state competition. All district contests will be held before December 15. L. A. Churchill of the agricultural extension service, University Farm, chairman of the state one-act play committee, announced that each county entering a district contest must have held a county contest to determine its winning play group. Only people living on farms are eligible to take part in these plays.

Police School Recommended

Establishment by the state of an up-to-date police school at the University of Minnesota has been recommended by the Minnesota Crime Commission, and that body may decide to urge that an appropriation for such a school be requested when the legislature meets in January.

Professor Harl R. Douglass of the College of Education, University of Minnesota, has been asked by the committee in charge of the program to prepare a paper on "Three Hundred Years of Method in Secondary Schools" to be read in February at the Tercentenary Celebration of the founding of the first secondary school in America.

held." That a mark is "withheld" does not mean a student has failed, Dr. MacLean explains. It means that he has not yet reached the point of proficiency that enables the college to give him a passing mark, but implies that he should continue his efforts and strive to reach a passing proficiency.

Psychologists say many students become discouraged and lose their attitude of confidence and aggressiveness if they are given a failure. In this the General College is experimenting with the value of telling the student not that he has failed and is no good, but rather that he has not yet achieved. And results are indicating that this method works. At least, up to now it is working, Dr. MacLean declares.

Maps Show How Weather Bureau Pictured the Approach of Recent Huge Downpour

Weather conditions have aroused so much interest in the Northwest this year, and for that matter throughout the world, that Minnesota Chats takes it upon itself to print a meteorological picture of the "big rain" that swept the Middle West on Friday, October 19, when more than five inches of water fell in parts of Minnesota within twenty-four hours.

It should be remembered that this was the second heaviest rain in Minneapolis, at least, during the entire history of the weather bureau.

The upper map shows the approach of the storm on October 18, with the area of low pressure centering in eastern South Dakota and the unusually extreme low of 29.3 inches of pressure recorded. The lower map shows the centers of the low pressure disturbance to be over central Minnesota.

Presumably colder air from the high pressure areas marked both to the east and west of the big low pressure area on October 19 was pouring in upon the moisture laden air of the central area and producing the terrific precipitation of that day.

The shaded areas show where rain had fallen within 24 hours. The unbroken lines mark limits of definite atmospheric pressures. The dotted lines mark the limits of temperature ranges. Arrows emerging from dots show wind directions.

Both maps are the daily releases of the United States Weather Bureau office at Chicago, Ill.

Writes on British Recovery

A campus talk given last spring by Professor Herbert Heaton of the University of Minnesota proved so popular that it grew during the summer into a book, and that book is now to be published, in response to numerous requests from students and faculty, by the University of Minnesota Press. Professor Heaton's original address before the Students' Forum was called "England Muddles Through." His book will carry the title, "The British Way to Recovery: Plans and Policies in Great Britain, Australia, and Canada." It has been announced for November 17. While in his Forum talk Professor Heaton, who lectures on economic history, could only summarize recent events in the recovery history of Great Britain, in his book he has expanded this information to fill six chapters and has added a chapter apiece for Canada and Australia.

Benjamin Finds Mendoza's Tomb

On Educational Mission to South America, Seeks Educator's Burial Place

In South America to represent the United States at a conference of ministers of education in Santiago, Chile, Dr. Harold Benjamin, assistant dean of education at the University of Minnesota, took time off to discover the burial place of a great administrator and educator, Antonio de Mendoza, founder of the University of Mexico and the University of San Marcos, in Lima.

Dean Benjamin said that all Lima knew where the bones of Pizarro, the conqueror of Peru, lay, in the cathedral, but that he had to search for some time for the burial place of the man whose service to the future of the two countries was so much greater. They were in the Church of San Francisco in Lima, Peru, but not in a glass case as were those of Pizarro.

The Minnesota professor also delivered the only address in Spanish presented by a member of the United States delegation, speaking on "Standards for determining the value of a national system of education."

He brought back a report that business is picking up rapidly on the West Coast of South America. Ships are carrying full cargoes and there is an especially heavy movement of copper out of Chile, both to the United States and to Europe. The money of the country is depreciated, which aids exportation but makes it difficult for the residents of Chile to travel abroad.

For many years, he said, there has been an argument between the Universities of Mexico and San Marcos as to which was the older, San Marcos claiming the honor because over a period in the early nineteenth century the University of Mexico was closed. Now, however, the shoes is on the other foot, because the Peruvian dictator has closed the University of San Marcos and has declared it will not reopen as long as he is at the head of the country. He closed it, he declared three years ago, because he "did not like the attitude of the students."

Only the United States was represented among non-Latin republics. Canada was not invited because it is a dominion of Great Britain rather than a republic.

Curfew Doesn't 'Ring' Any More For U Student

The youngest student in the University of Minnesota, 14-year-old Eugene Kohner of Duluth, got away to a bad start with the Minneapolis police department all because the city has a curfew law.

But it's all straightened out now and Kohner has the right to pursue his university "work" even after dark.

Several nights ago Patrolman R. M. Rydlund, who has the beat at Oak street and Washington avenue southeast, in the vicinity of Pioneer hall, where Kohner lives, saw the youth in a hamburger stand. He refused to believe Kohner's story that he was a university student and ordered him home to bed.

But today Kohner had an official document from university authorities saying the matter had been taken up with Chief Michael J. Johannes and that Kohner is "permitted to disregard the curfew law in pursuit of his work as a student at the University of Minnesota."

And that, Kohner says, means eating hamburgers after dark.

Directs Training School Athletics

Leonard Marti, former star of the University of Minnesota gymnastic team under Ralph Piper and captain year before last has gone to Red Wing to take charge of a newly planned program of physical education and athletics in the State Training School for Boys. Authorities of the school have decided that better planned physical education will help them in their disciplinary problems, besides being good for the health of participants. Marti has training in industrial education as well as physical education.

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T. E. Steward, Editor, 217 Administration Building
University of Minnesota, Minneapolis

Great Work of Educators

Report is that Robert Maynard Hutchins, president of the Chicago university, is to be offered an important position by President Roosevelt. It is one's duty to serve the country, but what temporary honor, even by a president, is equal to the presidency of a great institution of education like the Chicago university?

To be a guiding spirit of thousands of young men and women is wonderful service, and that this republic has remained constant to the ideas of freedom and the open door to opportunity is due in a larger measure to the teachers than to any other profession.

—St. Cloud Times and Journal-Press

Course in Architecture Five Years Under Recently Revised Study Plan

More Leisurely Progress and Greater Proficiency Required by New Scheme

Having discontinued preparatory courses in drawing technique for their subject, teachers of architectural design at the University of Minnesota are finding that the student who starts on a real problem and picks up his drawing technique incidentally is as far along after one year as he formerly was after a preparatory year plus a year on problems. Interest in the problem motivates them so strongly that they pick up the technique almost automatically according to Professor Roy C. Jones. Under the newer system the students also seem to have a more mature attitude toward their work, he finds.

Recent changes in the school of architecture have made the course in effect one of five years. No student is placed on a schedule that would bring the work to an end in four years, and in the first years there is no technical work in architecture except freehand drawing and a trial weekly seminar in which instructors test the students' potentialities.

This is in line with the school's effort to make its training more elastic and to decrease the likelihood of too intensive concentration on architecture alone. Students who take up architecture proceed with the course at the rate of progress normal to them, and graduation is based in the attainment of 225 credits which normally takes five years.

Three-fifths of Work Required

Three-fifths of the work is required of all students. Of the remaining two-fifths, half is elective and half is devoted to definite specialization in the upper years, either on design or construction, differentiated by Professor Jones as creative or scientific work.

One consequence of the new plan under which the school operates is that there are as many general students in architecture as there are professional, roughly, about 125 of each. The general students are taking courses in architecture with a cultural purpose, or as electives to supplement subjects in other courses in which they are majoring.

A thesis has also been introduced as a requirement for graduation in architecture. This is taken up after the student has completed those subjects required of all and has also finished his specialized courses. For this the student writes his own program and chooses an advisor with whom to work. When the thesis is complete it is judged by a faculty jury.

Must Demonstrate Proficiency

The idea in this is to require each student to demonstrate actual proficiency in solving architectural problems before he may be given the professional degree.

"The quality of our entering students has improved tremendously in the past two years," Professor Jones said, "and despite the smaller number of those who enter as many reach the advanced years as did when there were far more freshmen."

From 60 to 70 percent of the new students in architecture in the past two years have had previous college work, many of them

coming with an A.B. degree. In this respect the experience at Minnesota is similar to that at other schools of architecture, as a general effort at greater selection of students is now being made.

Want More Elective Students

The faculty in architecture hopes that a greater number of students in other major fields will elect architectural courses. Professor Jones, for example, pointed out that the subject is directly related to economics and sociology, through the housing problem and the building industry, and of course is even more closely allied to fine arts courses.

This year in the absence of Professor R. T. Jones, who is regional director of reconditioning for the Home Owners Loan Corporation, his work is being done by Edward B. Hollen, a Minnesota graduate in the Class of 1924. Mr. Hollen has studied at M I T and in Paris and has worked on buildings at the Rockefeller Center in New York, and elsewhere. Professor F. M. Mann, head of the school, has been named a member of the state planning commission. Miss Ruth Carter is taking over some of the courses in interior design that have been taught by professor Leon Arnal.

Six Rules for College Success

(Continued from page 1, column 3)

pare. The question of a life vocation should be decided by considering your individual capacities and interests in relation to the opportunities open or work to be done, Dean Johnston told the high school audience. For the important duty of helping young people to find where they can work best, the schools and colleges bear a serious responsibility, he said.

Pointing out that no two people are alike, but that all differ from others in such matters as strength, health, enterprise, imagination and initiative, moral stamina, determination, courage, tact, mental power, and other qualities, Dean Johnston said each should be fitted for his particular task.

"Society has need for the most efficient work of each of its members," he said. "Furthermore, it is to the advantage of society that each individual should do that which he can do best, and that each job be done by the one who can do it best. Also, it is to the advantage of the individual that he do that which he can do better than others."

Causes of College Failure

Stating that roughly one-third of college entrants in the last twenty years have been unfitted for college work, as revealed by their record, Dean Johnston gave a list of causes for college failure, to balance his list of suggestions for college success.

Many have reached their natural limits in the field of study by the time they graduate from high school, he said. A good many who might go further in studies are too much interested in sports, amusements, and college politics. Others are too selfish, too unsocial, or too much in a hurry to "get to work" to give their time to intellectual self-improvement. Some have not learned how to study, and in high school have

Goiter, Food and Drink, and Human Beings

A radio address delivered over WCCO by Dr. J. F. McClendon of the Medical School, University of Minnesota, representing the Minnesota Section of the American Chemical Society.

Goiter, under many names but referring always to the swelling of the thyroid gland in the neck, exists in all countries although it has not been reported from some sections, for example, Yucatan. Furthermore, in Japan proper with its very large population there are very few goiters. I had to travel into inaccessible places in the mountains to find a very few goiters other than those in hospitals.

Goiter was described before the birth of Christ by Vitruve in Italy, who showed that it was associated with drinking water, and Villanova said that the way to get rid of goiter is to change water and country. This is rather an expensive method and would mean that parts of the world would be uninhabitable. I have showed that in the United States the northern half had less iodine in drinking water and more goiter. Furthermore, in Minnesota in the north-east section, where there is more goiter, there is less iodine in drinking water, in cabbages and in potatoes, whereas in south and west Minnesota where there is less goiter, there is more iodine in drinking water, in cabbages and in potatoes.

It takes an especially skillful chemist to determine iodine in foods accurately, but the iodine in iodized salt may be detected very easily. In Switzerland iodized salt is sold in bulk and you cannot tell by its appearance the difference between iodized salt and ordinary salt. Dr. Eggenberger and I went to several stores in Switzerland and tested the salt. A certain delivery man was prejudiced against iodized salt and would substitute the ordinary kind when the iodized salt was desired. You can detect this difference very easily. Take a cup of vinegar and add a level teaspoon of starch and heat it with stirring until the starch dissolves. Add a level teaspoon of sodium nitrite from the corner drug store. Drop three drops on the same spot on a heap of salt and if it turns blue it contains the amount of iodine recommended for the prevention of goiter. In parts of Switzerland iodized salt has been used voluntarily for 12 years and the goiters have greatly decreased. In adjacent parts of Italy it is compulsory. Iodized salt or tablets, or iodized water have been tried in America, New Zealand, Germany and England, and even in parts of Africa, and good results have appeared if the iodine was used over several years.

Although iodine for goiter prophylaxis was first used effectively by David Marine at Akron, Ohio, there are many even in America prejudiced against it and I found that stewards even in a great university refused to use it. I found

established habits unfavorable to success in college.

He explained how teachers equip themselves to guide and advise students, first, by studying the subjects they are to teach and the theory of such matters as educational psychology, history, economics and the like, and second, by learning about the individual students. Knowledge of student traits, he said, comes from records of personal accomplishment in classes, including attitudes toward work, and from a study of the student's activities outside class. These include clubs and "activities" in the campus sense, reading, music, efforts to earn money, and the like.

After these general facts about a student have been learned through interviews and reports, the student at Minnesota is tested, and for two purposes, Dean Johnston said. One type of test is intended to measure his native endowments, such, for example, as his musical or mathematical ability. A second type of test is intended to show how well the student has used the endowments he has. Inevitably these show that students differ in application, perseverance, and similar qualities. The advisers' rating of a student is based on all of these facts, and amounts to a judgment on the student's general prospect and of his likelihood of success in different fields he may consider entering.

that although one can buy iodine for \$2 a pound, when made into tablets and sold at the drug store it has sometimes cost \$1,000 a pound. Therefore one may consider the expense.

How Much Iodine We Need

Our dietary needs of iodine are measured in micrograms, and there are thirty million micrograms in an ounce, and if you would divide a pound of iodine into thirty million tablets (with some substance like sweet chocolate to increase their size) and feed one a day to each of your children, it would be very beneficial in combatting goiter, but I cannot guarantee that they would not have small goiters. In Japan I showed that the feeding of sea fish is not sufficient to entirely prevent goiter but the Japanese are practically free from goiter because they eat seaweed, and seaweed has a thousand times as much iodine as ordinary foods. This fact shows that iodine is harmless because in Japan there is no significant amount of disease that could, by any stretch of the imagination, be attributed to their large consumption of iodine as compared to other people. Furthermore, a relation has been shown between goiter and geology and water supply.

Relation to Water Supply

The geology and water supplies of Formosa and Japan are similar but in Formosa there is a great deal of goiter because the people do not generally eat seaweed. In China there is a great deal of goiter, because they have cut down the forest, and their farms are washing into the sea with the rains, and seaweed does not grow well in the muddy water. They import some seaweed from Japan but it is not enough to give each of the four hundred million Chinamen even one taste in a life time. We find that goiter has decreased with the building of railroads. Why is that? There is a little iodine in the sea but if we depend on the wind blowing seawater into the air and over the land there is only enough iodine carried in to prevent goiter in a strip three miles from the sea coast. But when one takes an oyster out of the sea he takes a lot of iodine and if he ships it to the interior by rail the person eating it gets about 10,000 micrograms, or more iodine than he would get by going to the coast and breathing the sea air for many months. There is more iodine in the Great Salt Lake water than in sea water but goiter exists right up to within three miles. That is because the oyster does not grow in the Great Salt Lake; in fact, not even fish grow in it. It is a dead sea.

Oysters Check N. Y. Goiters

The shipping of such things as oysters caused goiter to almost disappear from Albany, New York, but it is still prevalent in Buffalo. Perhaps the people of Buffalo are too far from the sea to be sufficiently influenced by sea food. They may eat fish out of the lake, which is practically free from iodine. That salt high in iodine has a beneficial influence in preventing goiter was shown in the Andes in 1832 but all the early goiter-preventing salt had the iodine in it naturally. The Academy of Science of Paris could not be persuaded in 1852 that a few micrograms of iodine could have anything to do with the prevention of goiter although it had been shown that larger doses of iodine often cured goiter, and so the world waited until Marine showed the people that the addition of iodine to salt or any other food or drink would prevent goiter. But why worry over whether it takes 16 micrograms a day or 1,000 micrograms a day when one can buy 480 million micrograms for \$2 and it is harmless except in generally known harmful doses.

Dr. F. J. Alway of the University of Minnesota fertilized alfalfa with iodine and I found its iodine increased 10,000 percent. The Dairy Division fed a cow sodium iodine and I found the iodine increased in the milk 50,000 percent. They fed another cow cod liver oil (which contains most of the iodine of the cod fish) and I found iodine in the milk increased 3,000 percent. In the province of Bergamo in the Italian Alps Dr. Muggia and I observed that only those school children were free from goiter who took cod liver oil. In Bergamo iodized salt is not

used but in the province north of Bergamo iodized salt is compulsory.

The Swiss examine the school children and divide the goiter into four classes: first—only perceptible to the trained physician by feeling the throat; second—outline of goiter may be felt; third—profile of neck shows swelling; fourth—goiter evident to everyone. The Swiss method of goiter survey in schools has been adopted in northern Germany and other countries and the number of goiters found to vary from one goiter per 10,000 school children in Japan to 100 percent of the school children in certain schools in Switzerland before iodine was given to prevent goiter. Every school in goitrous regions should have a goiter survey made every year and if this is done the parents can prove to themselves whether the use of iodine reduces the number of goiters. Furthermore, some goiters of long standing become toxic, and I have shown that where there is less of the ordinary goiter there is less of the toxic goiter, and that this is also true of foreign countries. Therefore the prevention of goiter is not merely for cosmetic reasons but is also a health measure.

After spending a year traveling around the world and studying goiter I realized that the time had been much too short and sent out 2,000 letters to physicians all over the world to get more information on the subject. The evidence is overwhelming that it is not the iodine used for goiter prevention that makes some goiters toxic but that some goiters would become toxic anyway.

Those who have gotten no iodine in early life are called cretins and may have less intelligence than the new born baby, so we transfer them to institutions for the feebleminded and we do not see them any more. Still they exist in America as well as in Switzerland. In the canton of Bern, Switzerland, 99 percent of the people in the poor house which I visited were there because they had not gotten iodine in their early life. Cretins are small in stature and have difficulty with their joints and have a puffy skin. Cretinism is disappearing. In 1871 there were in Europe about 10 cretins and idiots per 10,000 inhabitants and in 1879 there were six per 10,000 in the United States. In Herisau, Switzerland, after 11 years voluntary use of iodized salt there was no cretin less than 10 years old. Cretins form the permanent army of unemployed. The mother of every cretin has a goiter and hence if we prevent goiters we prevent cretins. There are no cretins in Japan. Furthermore, many persons though no typical cretins have low grades in school or trouble with their joints or a puffy skin due to too little iodine in early life. In the Alps the pupils in school have shown greater intelligence after years of taking iodine.

In conclusion iodine, although discovered due to the stress of war (by Napoleon's munition makers), is useful in peace. It is a food which we should not deny our children. Goiter surveys were formerly done only to determine military strength. They should be done to determine whether our children are adequately fed.

Medical Broadcasts For This Month

Dr. W. A. O'Brien, representing the Minnesota State Medical Association, will continue this month his series of weekly broadcasts over WCCO, speaking at 10:45 each Tuesday. The remaining topics will be, November 13th, blood transfusions; 20th, progress in public health; 27th, warts and moles.

Minnesotan Heads Auto Engineers

William Bushnell (Bill) Stout, prominent University of Minnesota alumnus, who is credited with having had much to do with the designing of the huge Ford trimotor airplanes, has been elected president of the Society of Automotive Engineers for 1934-'35. Mr. Stout is the author of an article in the October 6 issue of "Automotive Industries," entitled "We can't keep selling \$1,000 cars to buyers with \$800 incomes."

MINNESOTA CHATS

Published by the University of Minnesota for the Parents of Students

VOL. 17

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NO. 4

Athletic Building At Stadium End Soon to Be Done

Will Provide Adequate
Swimming for Students
First Time at U

COACHES GET OFFICES

Federal Public Works Grant
Pays in Part for New
Structure

Equipment for the physical education and athletic program at the University of Minnesota which is aimed to reach every man in school will be practically complete with the opening of the new Athletic Building on the campus December 15.

The new building, a three story structure containing a basement and sub-basement, faces toward the playing field of Memorial Stadium. It is 234 feet long by 120 feet in width. The building rises 58 feet above the ground level.

Tunnels from the basement level connect with the north tower of the stadium and also with the playing field and the practise gridirons on Northrop field. This system of tunnels makes it possible also for athletes to pass from the athletic building to the Field House across University avenue without crossing the public promenade.

The swimming pools occupy the basement level of the building. In the rear, or on the west side, is the 'varsity or exhibition pool. This pool is 75 feet long by 40 feet wide. It is 12 feet deep at one end and seven feet deep at the other. As the ceiling of this room extends 35 feet above the surface of the water it provides adequate room for high and fancy diving equipment.

The practise pool is located in the South wing, its length being the same as that of the 'varsity pool. Its width, however, is 30 feet, and in depth it will range from three and one-half feet at the shallow end to seven feet at the deepest spot.

A control room from which one attendant can watch both pools is located between them. Complete sanitation measures will safeguard swimmers in these pools. To enter either pool, swimmers must pass through both a shower and foot bath. Beneath the basement level adequate machinery is being installed to assure sanitation and to take care of the water levels.

On the basement level are located locker rooms to serve the playing space in the building. In addition, equipment for all but freshmen and 'varsity teams will be moved to the new building when the winter quarter opens.

Locker rooms for both Minnesota and visiting teams are provided on the basement level as well as an office for the swimming coach adjacent to the pools.

To Have Trophy Hall

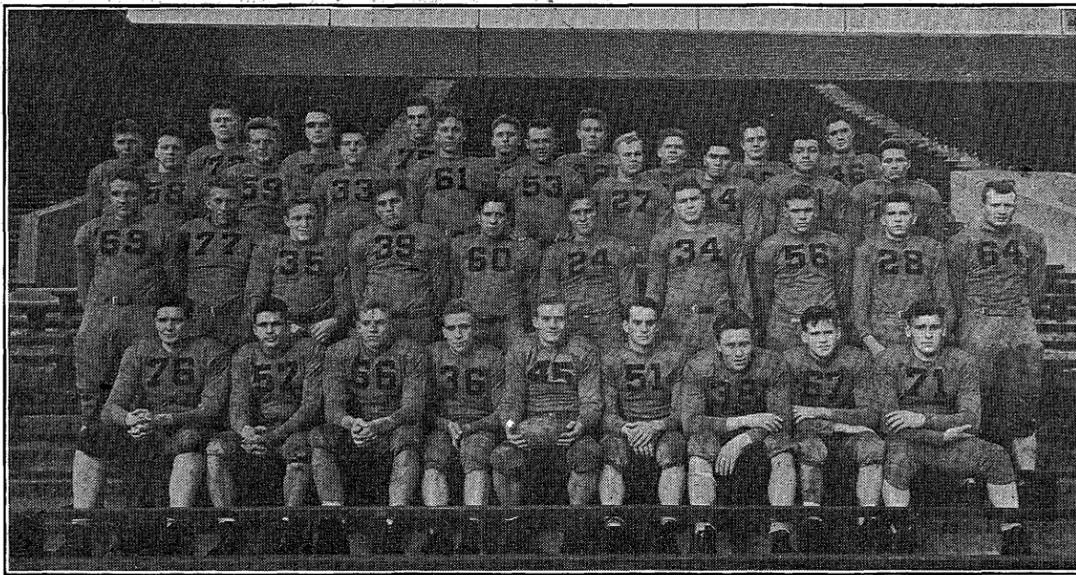
On the "ground" level of the Athletic building is the main entrance facing the promenade. Immediately inside the entrance are the lobby and the trophy hall, which occupy a space of 56 to 26 feet. The lobby is equipped with ticket offices and a checkroom.

Corridors at the right of the lobby lead to the offices of the athletic director. This suite contains a private office for the director, a secretary's office, a conference room, a record room, and the ticket office working quarters.

A corridor at the rear of the lobby leads directly to the exhibition swimming pool. Seating arrangements around three sides of the pool will accommodate approximately 1,300 spectators. These seats extend to a height of nine rows, thus giving complete visibility to all portions of the pool. The first row will be eight feet above the water.

Each row of seats is provided with a railing directly in front of it and the rows are arranged at such a steep angle as to give the

University of Minnesota Championship Football Squad—1934



Front row, left to right: Dick Smith, George Roscoe, George Svendsen, Vernal LeVoir, Capt. Francis Lund, Glen Seidel, Bill Evans, Whitman Rork, Selmer Anderson; second row: Bill Proffitt, Edwin Widseth, Jay Vevan, Milton Bruhn, Sheldon Beise, Stanley Hanson, Ray Antil, Earl Svendsen, George Renix, Vernon Cech; third row: Dick Potvin, Maurice Johnson, Frank Warner, Dominic Krezowski, Frank Dallera, Jack Rooney, Arthur Clarkson, Julius Alfonse, Sam Hunt; fourth row: Stanislaus Kostka, Leslie Knudsen, Phil Bengtson, Bill Freimuth, John Roning, Charles Wilkinson, Caifson Johnson, Bruce Berryman, Willis Smith.

(Robert Tenner and Frank Larson, regular varsity ends, and Dale Rennebohm, center, were not out for practise at the time this picture was taken.)

Progress of Dads' Association Reported by President Flynn

Twenty County Units Have Now Been Formed, He Tells Dads' Day Meeting

Progress of the Minnesota Dads Association, which in the past two years has been expanding its activities on behalf of the University of Minnesota, endeavoring to help give an understanding of its aims and purposes to the fathers of students, was reported at the Dad's Day meeting, November 17, by Edward F. Flynn of St. Paul, president of the association.

The Minnesota Dads Association was organized about five years ago when a group of fathers keenly interested in the university got together and decided to try to spread understanding of the institution through all the counties of the state, and to be helpful in whatever problems might arise.

Twenty counties have now been organized, with a County Dads association in each, Mr. Flynn reported. The first such association, that at Shakopee in Scott county, was formed in December, 1933, and the twentieth, at Sauk Rapids, Benton county, on November 16 of this year.

Mr. Flynn's statement to the fathers who met on Dad's Day in the Minnesota Union, was as follows:

President Flynn's Statement

"You will agree with me, I am sure, that Minnesota has not only one of the greatest universities in the United States, but in the entire world. I think you will also agree that most of us in Minnesota do not appreciate the value of this great university. For years the university has been a part of the everyday life of the city of Minneapolis and more recently of St. Paul as well. A few years ago people in St. Paul used to speak of the university as if it were a seat of learning that belonged to Minneapolis. Suddenly in St. Paul we realized that not only was the university partly located in St. Paul, but that it belongs to everyone in the state.

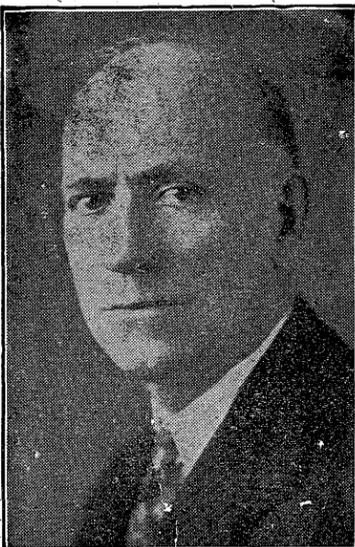
Two years ago when most of those who are in charge of the Dad's Association now were elected, they looked about them to see what could be done to aid the university. We set about endeavoring to adjust any little difficulties of which we learned that existed between the university and students or their parents. It was gratifying to know that in most of these cases the differences which we thought existed vanished as we

endeavored to get to the bottom of them.

"About a year ago the executive committee came to the conclusion that if the Dad's Association were to accomplish anything worth while it would be necessary to organize chapters of the association in the various counties in the state. We felt that we could not accomplish a great deal unless throughout the state we had contact units to work directly with the state association. In carrying out this idea, we organized the first chapter of the association in Scott county at Shakopee, December 7th, 1933. Since then we have organized the following units:

- No. 2—Rice County, Faribault.
- No. 3—Le Sueur County, Le Center.
- No. 4—Sibley County, Arlington.
- No. 5—Anoka County, Anoka.
- No. 6—St. Louis County, Duluth.
- No. 7—Mower County, Austin.
- No. 8—Washington County, Stillwater.
- No. 9—Sherburne County, Elk River.
- No. 10—Dakota County, Hastings.
- No. 11—Waseca County, Waseca.
- No. 12—Freeborn County, Albert Lea.
- No. 13—Steele County, Owatonna.
- No. 14—Crow Wing County, Brainerd.

(Continued on page 2, column 2)



Edward J. Flynn

Income Declines Over \$1,000,000 In Year 1933-34

Reduced Expenditures for
Teaching and Research
Absorb Half Loss

ALL FUNDS WHITTLED

Physical Plant Operation
Only Cost Category to
Show Increase

The University of Minnesota's income decreased more than one million dollars in the year 1933-'34 as compared with the last year of the preceding biennium, it was shown in the annual report of Comptroller W. T. Middlebrook, which was recently issued.

Actual receipts from all sources were \$859,530 less in the year that ended last June 30 than they had been the year before, but in addition to this the university was left with a free balance at the end of the year \$132,000 smaller than it had been a year earlier. By agreement with the Legislature the institution had retained a free balance of \$225,989 on June 30, 1933, and this had been reduced to \$93,504. Furthermore, the receipts of the past year included \$100,000 received from the sale of certificates for building the new unit of Pioneer Hall, so that money received for actual operations was smaller by that further amount than in the year before.

Expenditures Contract

The decline in money received forced a sharp contraction of expenditures for teaching and research, these items being reduced by \$534,000 according to Mr. Middlebrook. Half of this came from salary cuts and half from leaving teaching positions unfilled or actually cancelling them. Also, less new equipment was purchased than was written off as obsolete, there being a small decline in the equipment inventory at the end of the year.

The principal item in the reduction of receipts was the decrease by \$475,000 in the sum appropriated by the Legislature for the maintenance and operation of the university. This was cut from \$3,275,000 to \$2,800,000, at which figure it was the smallest in about a decade, although attendance has grown by more than 60 percent in that period. There was also a decline of \$42,000 in the yield of the 23/100 mill tax which is assigned to the University of Minnesota from state taxes. Not included in the figures given is the further fact that the university voluntarily gave up for the current biennium the building appropriation which had yielded it \$350,000 a year for new buildings since 1929.

Expenditure reductions were effected in every category but one, there being a slight increase in the cost of operating the physical plant, which includes janitorial service, painting, heating, lights and the like. Income rose in one category, that from athletics, in which the principal source is football and the secondary source yielding a profit, basketball.

Receipts from all sources were listed as \$8,101,897 for the past year as against \$8,961,450 for the year before. Expenditures were \$7,914,814, as against \$8,718,523 in the year ending in June, 1933.

For the first time in many years, receipts from student fees fell below \$1,000,000 last year. They amounted to slightly more than \$999,000.

Comptroller Middlebrook's report showed that with all positions reduced to the equivalent of full-time employment, the administrative, teaching and research staff of the institution numbered 1,171 persons and the clerical and service staff, 1,007 persons.

The condition of the student loan funds at the end of the year was as follows: Cash available, \$74,612.94; notes receivable, \$248,720.05.

Short Course Will Start January 14 At Farm Center

Farmers and Homemakers to Gather for Thirty- sixth Meeting

Thirty-five years ago, 28 Minnesota farmers appeared at University Farm for a six weeks' short course in modern agricultural methods. Only one or two such courses had ever been offered before in the United States, and the response of so large a number of men was encouraging enough to make the affair an annual event. In 1905, four women accompanied their husbands to the short course, thus enlarging the scope of the classes. As the number of farmers who could afford to spend six weeks away from the farm was limited, the course was later concentrated into one week.

This year, Farmers and Homemakers Week committees are anticipating an assemblage of over 2,500 farmers and their wives for the short course which begins January 14. The curriculum has grown to include over 175 classes on practically every phase of modern agriculture and homemaking. Speakers of national and state importance appear before the entire assemblage each afternoon to discuss important agricultural topics and public questions. Varied entertainment features each evening make the short course one continuous round of activity.

Because of the havoc wrought by the drouth, the university specialists, in close co-operation with hundreds of farmers, will present over 40 classes dealing with phases of the drouth alone.

Six special conferences will be offered for the first time during the week. Three will be concerned with the new deal program, and will cover phases of the AAA, the Farm Credit Administration, and rural rehabilitation. Two will deal with such problems as community leadership, dramatics, and 4-H club leadership, while the sixth will be for the young men and women who intend to build their careers around agriculture.

Information concerning the short course is now in the hands of county attendance committees and county agents, or may be obtained by writing L. A. Churchill, University Farm, St. Paul, asking to be placed on the Farmers and Homemakers Week mailing list.

Little Gallery Shows Photos

Fine Collection from U. S. and Abroad Placed on View

One hundred and sixty-two prints which won the silver seal award of the Minneapolis Camera Club in competition for its open salon of photographic art will be displayed in the Little Gallery in Northrop Auditorium for a month beginning December 5. The entries have been accepted for hanging from among photographs submitted from 23 states and five foreign countries, according to R. W. Burnet, vice-president and chairman of the salon committee of the Minneapolis Camera Club. Among these will be entries from Belgium and China.

Mrs. James C. Lawrence, curator of the Little Gallery, will direct the exhibition. The Little Gallery is open daily from 12:30 to 5:30 and also is opened between intermission when there is a symphony concert or a number of the University of Minnesota Artists' Course.

Every type of subject will be included among the prints selected for showing. The Gold seal selections are to be shown at the Minneapolis Institute of Fine Arts at the same time. Some of the work is by members of the Minneapolis Camera Club, but much has been entered by persons from all parts of the United States.

On the committee of jurors which selected the pictures to be shown at the Institute of Art and in the Little Gallery were E. M. Kopietz, director of the Minneapolis School of Art, F. B. Calhoun, an instructor at the same school, C. W. Howson, Minneapolis commercial photographer, V. P. Hollis, director of the photo laboratory of the University of Minnesota, James Bennett of the Minneapolis Camera Club, Clarence W. Conaughy, art director of the Minneapolis office of Erwin, Wasey and Co., and Samuel C. Burton, professor of painting and sculpture in the University of Minnesota.

George V. Thomson is president of the Minneapolis Camera Club.

Deans Attend Land Grant Meet

University Farm Well Represented at Sessions in National Capital

W. C. Coffey, dean and director of the University of Minnesota department of agriculture, left on November 15 for Washington, D. C., to attend the forty-eighth annual convention of the Association of Land-Grant Colleges and Universities, November 19 to 21.

Others from the university who attended the meeting with Dean Coffey were Edward M. Freeman, dean of the College of Agriculture, Forestry, and Home Economics; Wylie B. McNeal, chief of the division of home economics; Dr. Andrew Boss, vice director of the Minnesota Experiment station; F. J. Brown, assistant director of agricultural extension, and Miss Julia O. Newton of the home demonstration staff.

Dean Coffey spoke before the section of home economics on the subject: "Co-ordination of Resident Teaching, Experiment Station, and Extension Work in the Field of Home Economics." Dean Freeman addressed the section on resident teaching, discussing "The Need for Curricular Plasticity."

Several of the university faculty members are serving on committees. O. M. Leland, dean of the College of Engineering, is a member of the association's executive committee. Dr. Boss serves as secretary of the sub-section of experiment station work, and Miss McNeal is secretary of the committee of home economics. Dean Coffey also took part in the National Rural Forum of the American Country Life association in Washington Friday, November 16.

Paulu Succeeds Gibson
William Gibson, director of programs for the University of Minnesota radio station, WLB, has resigned to become affiliated with KSTP, a large Twin City station. Burton Paulu, who has had charge of the station's music, has been appointed successor to Mr. Gibson. Paulu formerly lived in St. Cloud.

Yost Smiles on Homecomers



Fielding H. Yost, veteran athletic director of the University of Michigan, was a beaming guest at the Minnesota Homecoming banquet on the eve of the Minnesota-Michigan game. Next him, at his right, sits Lawrence Barette, Student Homecoming chairman, and beyond, President L. D. Coffman.

Dads Association Growing Swiftly

(Continued from page 1, column 3)

No. 15 — Olmstead County, Rochester.

No. 16 — Carver County, Chaska.

No. 17 — Wright County, Buffalo.

No. 18 — Nicollet County, St. Peter.

No. 19 — Stearns County, St. Cloud.

No. 20 — Benton County, Sauk Rapids.

"At the various places where we organized we endeavored to explain the university to the people of the county. We explained to them that while the university plant has cost the state a good many million dollars, it probably would be necessary to expend almost twice as much today if it were necessary to replace the buildings and property which make up the campus of the University of Minnesota. We endeavored to show that when a state educates a young man or woman it has an investment of perhaps \$2,500 in that boy or girl and that this investment is worth protecting. We urged the various chapters organized to keep in touch with high school students who wished to know more about the university, and be of assistance to them. We asked the dads to keep in contact with the students while attending the university, but more especially after graduation to see that students who might lack initiative might find their places in society. In a word we endeavored to show that while the natural resources of the state are valuable, human resources are even more so and that human resources might be wasted even more easily and readily than the natural resources with which this state has been blessed.

"We have endeavored to obtain positions for some of the boys attending the university and while we have not been as successful in this as we had hoped, we trust that as soon as business becomes normal again, we may be of greater assistance to students in this regard.

Youth Must Carry On
"The executive committee of the Dad's Association realizes that it is the youth of the country who must carry on and that it is youth that knows no failure which will no doubt lead us out of this depression.

"While it may seem that we are spending much money for education, we are of the opinion that whatever is spent for educational purposes is perhaps put to better use than nearly any other money that the taxpayers provide. We explained at our organization meetings that the purposes for which the county chapters were being formed as provided by the Constitution and By-laws are:

"To promote the welfare of students at the University of Minnesota, to study conditions affecting them, to disseminate all helpful information thus secured, to assist in improving such conditions; to work actively, continuously, and persistently toward the advancement and improvement of the University of Minnesota educationally, morally, socially and in all other ways which may be helpful to the student body, the individual student, the institution, the State and those who by their tax payments make possible the service for which it was created and is maintained to provide; and to assist in the work of the Dad's Association of the University of Minnesota.

The Association's By-Laws "The standard form of constitution and by-laws of our association which is being adopted by the various chapters provides for the election of an executive committee of five, including a president, vice-president, secretary and treasurer. It further provides that there shall be no special dues or assessments. As you know the work of the association has been carried on by your dues paid at these annual dinners and through the voluntary donations amounting to some \$300, which the association received from members about a year ago.

"I hope the day will come soon when the Dad's Association will be able to obtain a small voluntary contribution each year from all of the fathers whose sons and daughters attend the University of Minnesota. This fund I would like to have used for two purposes: First, for a part time secretary for the Dad's Association to be located near the campus, and second, to be used for a student's loan fund.

"To make the University of Minnesota everything it should be, the helpful support and co-operation of all the fathers of students at the University of Minnesota is necessary. I am sure that you will render us this assistance. One way you can help is to assist in organizing a chapter of the Dad's Association in your county, if one has not already been perfected there."

Officers of the associations other than Mr. Flynn are: vice-president, Harold Harrison, Minneapolis; secretary-treasurer, Edward L. Eylar, Minneapolis; members of the executive committee, Helen E. Leach, Owatonna, O. W. Oberg, Austin; William P. Moorman, Arlington; Frank Hopkins, Fairfax; Ray P. Chase, Anoka; Allen S. Crawford, White Bear; John Hoffbauer, Brainerd; J. A. Lucey, Minneapolis; William Enright, St. Paul; E. E. Novak, New Prague; J. H. Grill, Minneapolis; J. O. Peterson, Albert Lea; George A. Taylor, Forest Lake; George A. E. Finlayson, Duluth; Reinow L. C. Neils, Sauk Rapids; Chester S. Wilson, Stillwater; Myron T. McMillan, St. Paul; Sterling Horner, St. Paul; John McGee, St. Paul; H. C. Bell, Minneapolis; Paul C. LaBlant, Minneapolis; Albert C. Jerome, Minneapolis; G. H. Sandberg, Rochester; William D. Duding, Minneapolis.

Report by Minnesota Researchers Bumps Correspondence Study Plan

James B. Fitch Made Dairy Head

Successor to Late Dr. Eckles Comes from Kansas State College

James Burgess Fitch, head of the dairy department at Kansas State College, has been elected head of the dairy division of the Department of Agriculture in the University of Minnesota. He takes the position vacated by the death of Dr. C. H. Eckles in 1933. His appointment will become effective in February.

Professor Fitch will come to the University of Minnesota after nearly 25 years of service with Kansas State College during which he has become known for "practical mindedness, honesty, and deep understanding of dairy problems in relation to production, manufacture and marketing." Recognizing the great importance of the dairy industry to the state, the aim of the university has been to obtain a man with a wide and thorough knowledge of the problems involved, and these qualities, says Dean Coffey, are combined in the new appointee.

Professor Fitch was born near Huntertown, Indiana, June 26, 1888. He was reared on a farm and in town, and was graduated from Purdue university in 1910. For the summer of that year he was on a certified milk farm near Indianapolis. On October 1, 1910, he became an assistant in the college creamery of Kansas State College. July 1, 1918, he was made head of the dairy department at Kansas State College, a position he has held ever since.

Professor Fitch's service to the dairy industry of the country has been recognized by his election and appointment to important offices. He served as secretary of the American Dairy Science Association from 1922 to 1926 and also as president of the same association in 1927. In 1928 he was an official United States delegate to the world's Dairy Congress in London, spending three months in the dairy countries of Europe following the congress. In 1928 he was made a member of the permanent committee on cattle classification for the Holstein-Friesian association, and in 1931 was appointed to a committee on herd classification for the American Jersey Cattle club. From September 1 to December 31, 1933, he was regional consultant for the dairy section of the Agricultural Adjustment Administration.

He is a member of Sigma Xi honorary scientific fraternity, Phi Kappa Phi, the American Dairy Science association, and the American Association of Animal Production. He is also a Mason and a Rotarian. He is married and has three children.

Convocation Talks Hold Wide Interest

An unusually interesting series of convocation speakers appeared in Northrop Memorial Auditorium at the university during November, including Dorothy Thompson, who is the wife of Sinclair Lewis and whom the Nazis expelled from Germany last summer; Christopher Morley, author, essayist and poet; Drew Pearson, one of the authors of "Washington Merry-Go-Round," and Thornton Wilder.

Their subjects were, respectively, "European youth demands a new deal," "Streamlines in literature," "Behind the scenes with the New Deal," and "The motion picture as an art form."

Students also were privileged to hear Professor Elizabeth Wallace of the University of Chicago in three of a series of four lectures on "Latin American Relations." Professor Wallace gave these under the auspices of the Romance Language department.

Among other campus lectures of the month were one on "The dictionary as a standard of English usage," by Professor C. C. Fries of the University of Michigan and one on "Gastric pepsin and gastro-intestinal disease" by Dr. A. E. Osterbury. There were also half a dozen speakers before the Students Forum, including Governor Floyd B. Olson, who spoke on, "The new state."

Most Lessons Sold by Commercial Schools Go to Poorly Selected Students

That the great majority of men who pay big money for commercial correspondence school courses are doomed to receive but little benefit, chiefly because so many of them take courses in subjects ill-suited to their needs or their abilities, is the gist of a study made by the Employment Stabilization Research Institute at the University of Minnesota.

The research is one conducted by the committee on individual diagnosis and training of the unemployed which the institute set up. Professors Charles Bird and Donald G. Paterson are the authors.

One out of ten men who registered in the clinic at the Employment Research Institute had taken correspondence courses from commercial schools at an estimated cost most frequently set at \$120, yet of the 294 men considered only six percent said they had carried courses to a successful conclusion, this study shows.

Forty percent of the men who gave complete data had dropped correspondence courses before the end of the first year and two-thirds had dropped at the end of 15 months.

Absence of any test that would select men with sufficient ability to pursue the courses, with the result that most of those who subscribe go far afield from their natural abilities or likelihood of success, is an important cause of the high mortality, according to Professors Bird and Paterson.

In courses supposed to lead to business success they found the mortality especially high, as 38 percent of the unemployed and 30 percent of the employed men in the group examined had dropped business training courses by the end of the sixth month.

A further weakness of correspondence school procedure, they pointed out, is found in the fact that so few take courses in line with the occupations in which they have been engaged. The percentage of those who work along the lines with which they are familiar was 28.6 percent. This, say the authors, runs counter to the claim of the schools that their main purpose is to help people "advance in the job." An exception to this situation is found in the case of the mechanical courses; half of those who purchased these courses had at some time worked in the mechanical trades.

Many Get Over Their Heads
"Tests leave no doubt that a considerable proportion of men registering in correspondence courses are attempting forms of training far beyond their capacities of assimilation," the report said. "A very large number of men employed in semi-skilled and unskilled occupations pay fees for courses in accounting, business management, and engineering," it went on. "Many of them could profit far more from specific training on the job or from specific training related to the job."

Results of correspondence courses were given a low rating by these investigators despite their statement that the 294 men whom they examined were more highly selected than the average if years of formal schooling and the results of educational tests were taken as bases of judgment.

"On the other hand," they said, "if correspondence schools would set up personnel bureaus and avail themselves of measuring instruments whereby adult students could be guided to suitable courses, their methods of training would fill a sorely felt need in the field of adult education."

Until this is done, the report said, hit or miss efforts and high-powered advertising campaigns brand the schools as profit-making institutions, contributing to the formation of an unhappy and mal-adjusted citizenry.

Mechanics Benefit Most
Of the intelligence distribution of those who take correspondence courses, as compared with that required by the fields in which these courses were offered, the report shows the following data on unemployed persons: In accounting, only 19.6 percent of students measured up to the required intelligence rating; in engineering, seven percent; in business training, 36.4 percent, and in mechanical occupations a considerably higher percentage.

Athletic Building Soon to Be Open

(Continued from page 1, column 1) effect of sitting directly above the water.

Lighting arrangements are such that during a swimming meet the surface of the pool will be illuminated by floodlights while the remaining lights above the spectators are dimmed. Five ramps leading to the seats make it possible to avoid congestion in entering or leaving the section.

Five classrooms for physical education students occupy the second floor. Four of these rooms have an approximate seating capacity of 30, while a larger one will seat 100 students.

Coaches to Have Offices
Located in the right wing of this floor, directly above the athletic department's headquarters are several suites of offices for the coaching staff. Overlooking Northrop field and University avenue are the offices which will house the football coaching staff. These are three in number, including a private office, a conference room and a waiting room.

Track and basketball coaches will have offices with separate waiting room while a third suite is to be reserved for minor sports. Another suite, overlooking Memorial stadium and directly above the athletic offices on the first floor, will be the headquarters of the ticket and business staff.

A small library and study hall, two conference rooms and offices for members of the physical education staff occupy the left wing of the second floor. The intramural offices, including a private office, a large work room and a waiting room, also occupy this end of the building.

On the top floor a single "room" extends the full length and width of the building and will be in the nature of a gymnasium. It is large enough to include four basketball playing courts, a gymnasium for the tumbling and gymnastic teams, and space for boxing and wrestling.

Each of the four basketball courts is 73 feet long by 46 feet wide. Space of the same dimensions as one of these courts is provided to the apparatus of the gymnastic team. Skylights in the roof make it possible for all daytime games to be played under natural light.

With adequate space provided for these activities there still is room enough to carry on either boxing, wrestling or some other activity on one side of the large floor space.

Balcony space above the playing floor provides seating space for more than 800 spectators for the various intramural contests.

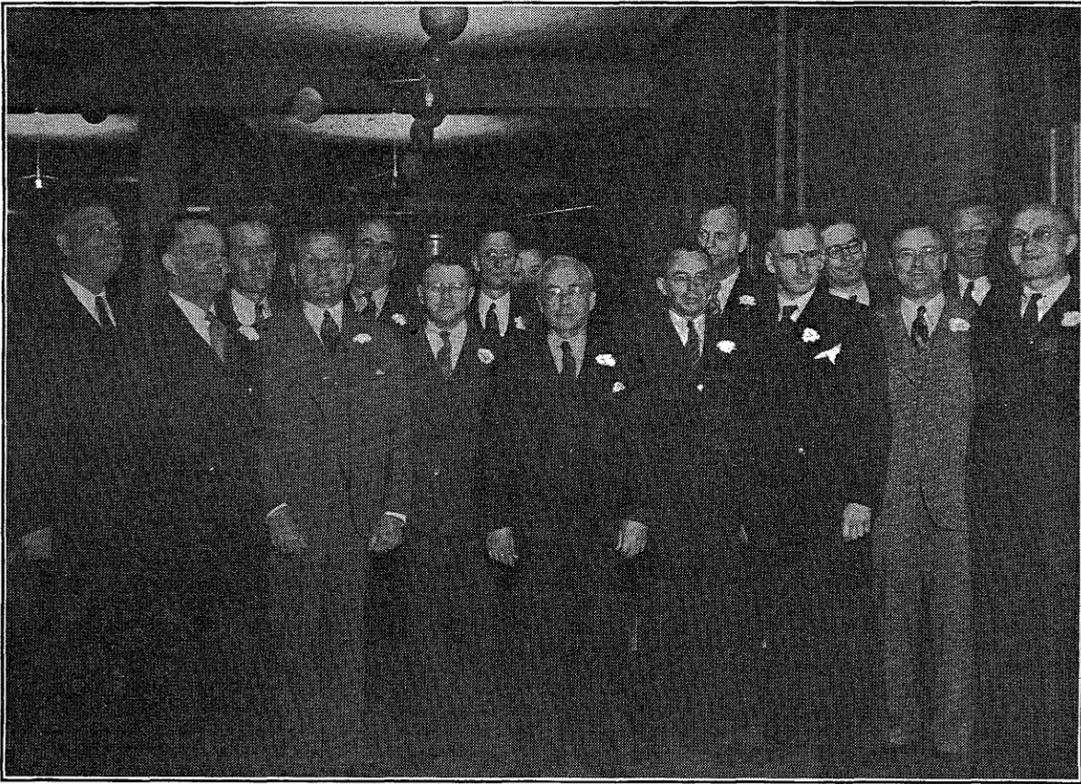
It will be possible to carry on four basketball games, two swimming meets, a gymnastic or wrestling meet and other activities at the same time in the new building.

Dragonflies Menace Summer Egg Yields

Farmers and poultrymen are warned to keep their hens fenced away from the shores of lakes containing dragonflies, in a technical bulletin by Ralph W. Macy, formerly with the division of entomology, Minnesota Agricultural Experiment Station, and now teaching at St. Thomas College, St. Paul. For many years, Mr. Macy says, there has been a sharp decline in egg production during the early summer in the lake regions of Minnesota. The eggs produced have often been soft-shelled and malformed. There has also been a large mortality of adult hens, especially of birds having free access to swamp ground and to shores of lakes with much vegetation. The trouble is caused by a fluke, which dragonflies carry, and which are taken into the system of the chickens which eat the dragonflies, both in the mature and immature states, says the bulletin. The discovery was made in an investigation which Mr. Macy just completed in co-operation with the department of zoology and the division of entomology of the University of Minnesota.

As a member of the Executive Committee of the National Institutional Teacher Placement Association, Dr. J. G. Umstatt, assistant professor of education, University of Minnesota, took part in a conference in Chicago held in late November.

Glee Club of Long Ago Warbles for Grads



Youngest Doctor Finishes Training

Youngest student to graduate from the University of Minnesota medical school since 1915, Dr. Irvin Kerlan, 22 years old, has completed his internship at University hospital, Minneapolis, and successfully passed his state board examination at about the age most prospective doctors are entering the medical school.

Dr. Kerlan entered the university in 1927 at the age of 14 years, having completed the three-year course at St. Cloud technical high school in two years. He received the degree of Bachelor of Medicine in 1933 and Doctor of Medicine in March, 1934, when only 21 years old.

Explaining it was possible to complete a medical course in four years prior to 1915, Elias P. Lyon, dean of the university medical school, said Dr. Kerlan is the youngest student to receive an M. D. since that year.

Irvin is the fourth of six brothers to become a doctor. Another brother, R. R. Kerlan of 2405 Lyndale avenue south, Minneapolis, is a dental surgeon. Irvin received a "B" average during his year's internship at University hospital which he completed in July. He intends to specialize in internal medicine.

Minnesota's First German Teacher Dies at Age of 86

Professor John G. Moore, 86 years old, last surviving member of the original faculty of the University of Minnesota, died recently.

Intimate friend of the late Dr. William Watts Folwell, first president of the university, Professor Moore served a portion of his 42 years as professor of German under him. A veteran of the Civil war, former member of the state board of education and of the state board of charities and correction, Professor Moore was long a leader in the fraternal and intellectual life of Minneapolis.

Born in Germany, he came to the United States at the age of 14 years. He received his early education at Mexico, N. Y., and served during the Civil war with the 184th Infantry of New York. He was graduated from Cornell university in 1873, and came to Minneapolis four years later. He was the first professor of German at the University of Minnesota, a position he held until his retirement 19 years ago.

Dr. Harl R. Douglass, professor of secondary education of the University of Minnesota, gave two addresses before the general session of the Nebraska State Teachers' Association held at Omaha, October 25 and 26. His topics were "The Perilous Position of Public Education" and "New Responsibilities of the School." Dr. Douglass also talked on "Getting Our House in Order" before the Mathematics Section.

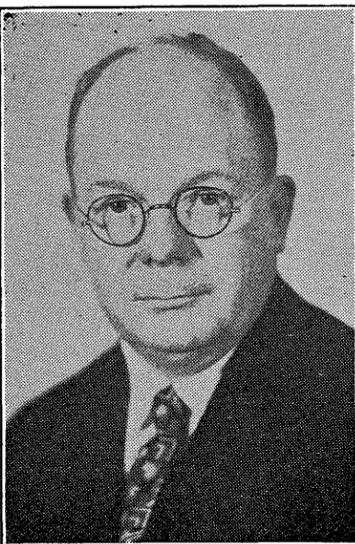
Scammon Speaks in London

Dr. Richard E. Scammon, dean of the medical sciences at the University of Minnesota, visited England last summer to deliver the opening address at the Royal College of Surgeons, where an International Congress of Anthropological Science was held. "Child Development" was his topic. Before leaving for London Dean Scammon spoke in Chicago at the meetings of the Institute for Administrative Officers of Higher Educational Institutions. "The Relation of the Natural Sciences to General Education" was his topic.

Agronomy Society Makes Hayes Head

Dr. H. K. Hayes, chief of the division of agronomy and plant genetics, Department of Agriculture, University of Minnesota, was elected president of the American Society of Agronomy at its recent meeting in Washington, D. C.

The American Society of Agronomy has a membership of about 1,000 crops and soils specialists of the various agricultural colleges and experiment stations of the country and of the United States Department of Agriculture. Dr. Hayes was graduated from Massachusetts State College, Amhurst, in 1908 and received his Sc.D. from Harvard in 1921. He came to the University of Minnesota in 1915 as associate professor of plant breeding, becoming a full professor in 1919. In 1932-33 Dr. Hayes was selected to serve as acting professor of plant breeding at Cornell university and last year in January was chosen to deliver the Spragg Memorial Lectures at Michigan State College. He recently returned from the Kansas State Agricultural College, Manhattan, where he delivered a course of three lectures on subjects pertaining to agronomy and plant genetics.



Dr. H. K. Hayes

N. W. Business Above National

General Average for Region
Nine Points Above
Last Year

The Northwest Index of General Business, prepared monthly by the Employment Research Institute of the University of Minnesota, shows that business activity in the northwest region declined in September of this year by comparison with August. Chiefly responsible for the decline, however, was the sharp decline in livestock shipments to South St. Paul and that in livestock slaughtering at that important packing center. These dropped from 54.7 percent of normal to 218.4 and from 197.3 to 180.6 respectively in September.

Comparison with the business index printed by The Annalist indicates that Northwest business is holding up better than business in other parts of the country, according to Erwin A. Gaumnitz, editor of the bulletin.

Following are comparisons between the two indices in three months of 1933 and three of 1934:

	1933		
	July	Aug.	Sept.
Northwest Index	75.7	74.3	65.4
Annalist Index	89.3	83.5	76.4

	1934		
	July	Aug.	Sept.
Northwest Index	77.1	81.5	74.7
Annalist Index	73.0	71.1	66.5*

The Financial and Investment Review of the Employment Institute goes on to say:

"This movement in physical volume should be interpreted in relation to price movements of the commodities involved. Potatoes, lambs, and ewes were the only important agricultural products in the Northwest which failed to show an improved price position for September of this year compared to September of last year. The seasonally adjusted index of Minnesota farm commodity prices increased from 72.4 percent of the 1924-1926 level in August to 81.5 percent in September.

"Eleven of the twenty series showed increases, but the declines in the other nine series were sufficient to produce a fall in the composite index. The volume of electric power production increased from 66.7 per cent in August to 71.0 percent in September. This movement is especially significant in view of the fact that the Annalist Index shows that for the nation as a whole this series dropped approximately two percent of normal from August to September (from 94.0 to 92.4 per cent).

"The volume of building permits and building contracts awarded increased markedly even after adjustment for changes in construction costs, the former from 23.0 percent in August to 31.0 percent for September and the latter from 47.9 percent in August to 104.3 percent in September, 1934. The index of country lumber yard sales in board feet was especially interesting, having increased from 48.6 percent in August to 63.7 percent in September, showing a reflection of the increased income to farmers. Somewhat related to this tendency is the increase in the index of wholesale hardware sales from 65.7 percent in August to 74.6 percent in September.

"Series which increased, in addition to those already mentioned, are gold, silver, and copper production, Twin City furniture freight shipments, Northwest miscellaneous carloadings, farm implement freight shipments, and life insurance sales."

Daily's Broadcast Analyses Events

The "Parade of Events," the Minnesota Daily's weekly broadcast over WLB, is a program that differs from any other on the air today in that it states, analyzes and predicts the outcome of the leading social, economic and political problems in the "public eye." The material for the program is gathered from all over the world, and University authorities and leading men in each field are consulted for their ideas on the various subjects. The program, presented every Friday evening from 7 to 7:30, is produced by a cast of thirty people who are members of the University Theater.

Radium Price Drop Caused by Big Strike

Radium has dropped in price from \$70,000 a gram to a mere \$50,000 according to Dr. S. C. Lind, director of the School of Chemistry. More gently stated, it now costs \$50 a milligram rather than \$70. The cause of the drop, Dr. Lind said, is that the Belgian syndicate which owns the huge radium deposits of the Congo sees the handwriting of competition on the wall because of the very large deposits of radium ore that have been made in recent years in extreme northern Canada. The offset to radium's great cost is that, barring loss, it lasts almost indefinitely. Although it is constantly breaking down, as the radio active process is called, no perceptible decrease in the mass of the substance can be perceived in ordinary spaces of time.

New Ohlsen Petition Denied

Ray W. Ohlsen, a Minneapolis student in the University of Minnesota who attracted attention two years ago when he was exempted from military drill as a conscientious objector, has now been denied exemption from a physical education course, for which he petitioned President L. D. Coffman. When his conscientious objections to drill were taken into consideration and exemption granted Ohlsen promised to take a certain amount of work in physical education to replace the drill. In his more recent petition he set forth that, inasmuch as drill is no longer compulsory, he should not have to go through with the course he had promised to substitute. The Board of Regents promptly backed President Coffman in his unwillingness to grant this point.

MINNESOTA CHATS

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University of Minnesota, Minneapolis

Institute Gives Broadcasts for Parent-Teachers

"Growing up in the world today" is the general theme for a series of radio addresses planned for the Minnesota Congress of Parents and Teachers which will be presented this winter by the Institute of Child Welfare at the University of Minnesota. The speaker will be Dr. Esther McGinnis. Her series, given over KSTP at 2 p. m. Tuesdays, began three weeks ago.

These fifteen minute discussions have been arranged for the benefit of listening-in study groups organized throughout the state by Parent-Teacher associations. Suggestions about the programs from any of these groups will be heartily welcomed, Dr. McGinnis said.

The first series, "Youth and a changing world," was begun in November and will continue through December 18, with these subjects: December 4, "Adult education and the emergency program," 11th, "Education for a changing world—in our schools," 18th, "Education for a changing world—in the family."

Beginning January 8 will come the second series on, "Adolescents and their parents." Subjects will be: January 8th, "Problems which puzzle parents," 15th, "Selecting friends," 22nd, "Managing Money," 29th, "The Family Auto," Feb. 5th, "That inferiority feeling," 12th, "Choosing a vocation," 19th, "Irritability and independence," 26th, "Criticizing." "Adolescents themselves" will be the subject of the series that will begin March 5th with, "What do they want?"; 12th, "Seeking security," 19th, "Making friends," 26th, "Reading interests," April 4, "Adjusting to sex," 11th, "Developing a philosophy of life," 18th, "Effect of unemployment—ways to help," 25th, "Altruism and religious interest."

Elmer E. Harmes Wins Art Award

An award in drawing, a result of popular balloting which has been a feature of the Twin Cities Art Exhibit for the past two years, went to Elmer E. Harmes, instructor of drawing and painting in the department of art education, University of Minnesota. He received first award on his black conte drawing, "Head of a Child," and third place with his red and black conte study entitled, "Gypsy Annie." His drawing, "Prescott Farmer," a charcoal study, received the first award in drawing last year. An interesting result of the balloting this year disclosed that the choice of the artist-member group at the opening reception coincided in every case with the final vote by all visitors to the Art Institute.

Should Advertise Ice Cream
Heavy stress on the value of newspaper and other advertising to the ice cream industry was laid by Prof. Donald G. Patterson of the University of Minnesota Psychology department and C. S. Samuelson of the advertising department of General Mills, Inc., in lectures given before the Ice Cream Manufacturers' Short Course at University Farm. Both speakers agreed that the manufacture of ice cream was still in its infancy in regard to actual quantity production.

As vice-president and chairman of the Research Committee of the National Council of Teachers of English, Dr. Dora V. Smith of the College of Education, University of Minnesota, attended the annual convention of that body in Washington, D. C., from November 29th to December 1st. At the close of the session, Miss Smith will go to New York City for conference on matters pertaining to the English curriculum.

Buy Christmas Seals



Help Fight Tuberculosis

University Coed Designs Bridge

Slim femininity in the person of a dainty brunette University coed has entered into the high councils of a profession reserved by age-long tradition to the most masculine of men.

Little Edith Reed, who handles a tea cup in the best sorority manner, who gasps a bit when she gets up on a high building, who doesn't know a rock spudder from a single jack hammer, has been announced as the designer for what will be a gargantuan bridge a mile in length which will be flung across the great muddy Missouri at Omaha, Nebraska.

The announcement of the selection of her design for the project startled the entire masculine world of architecture, and especially did it jolt the roomful of male students in her architectural class at the university, where women are more or less novelties. It also surprised Miss Reed.

Edith is a senior, president of Alpha Alpha Gamma, architectural sorority, and Pi Beta Phi, social sorority.

Miss Reed submitted the design to the Minneapolis Bridge company, which used her drawing as the basis of its bidding for construction of the span.

Injured in an automobile accident last spring, Miss Reed drew plans for the bridge while she was recuperating. It was not until September 12 that she was notified that her design was accepted by the city of Omaha. The bridge will cost \$2,000,000.

The drawings she submitted are merely preliminary designs, and Miss Reed is working on more detailed plans. Small of stature, Miss Reed is a striking contrast to one's conception of a bridge builder. She works her way through school as manager of the women's department of a campus clothing store. "I can't realize yet that it is true," she said in talking of her award.

Prof. Mann, head of the department of architecture, speaking of the acceptance of Miss Reed's design, said, "It is a creditable performance. It will give her experience that is rare at her stage of advancement. The experience should be of great value to her in professional work."

December Medical Society Lectures

"Shortness of breath" will be the subject on December 4th of the first of three radio addresses to be given in December by Dr. W. A. O'Brien of the medical school in his regular series for the Minnesota State Medical Society. He speaks Wednesdays at 10:30 a. m. over WCCO. On the 11th he will discuss, "Gasoline and kerosene poisoning in children;" 18th, "Mental hygiene," and on the 25th will not speak because of the holiday.

The Smoke Problem and Some of Its Remedies

The following talk is one of a series that is being given over WCCO by members of the Minnesota Chapter of the American Chemical Society.

By Dr. C. A. Mann
Head of the Department of Chemical Engineering

Smoke belching from factory chimneys may be a sign of prosperity but it is, likewise, a sure indication of improper burning of fuel and an economic waste. When twirling heavenward from the little cottage it may be a choice subject for poetry but it is also a real health hazard. Besides being a waste and a health hazard it is a despoiler of beauty, blackening buildings, destroying parks and gardens and begriming objects of art.

Smoke is the product usually formed as the result of the improper combustion of any kind of fuel whether it is coal, wood, oil, or gas. It contains the gases, carbon dioxide, carbon monoxide, sulphur dioxide, nitrogen, oxygen and hydrocarbons, and water vapor, tars, dust particles in the form of ashes, and carbon as soot, the exact composition depending on the constituents in the fuel and particularly on the way the fuel is fired. Its color is due to the tars and carbon and the intensity of the color depends on the amounts of these.

Dark smoke usually results when too little air is supplied to a burning material and when the air or fuel is too cold. Even gas may be made to produce smoke under these conditions. When a cold smooth surface object is held in a gas flame burning with insufficient air, soot is deposited on the surface. The old kerosene lamp demonstrates how black smoke can be produced from oils. When soft coal is thrown on a hot fuel bed, the heat distills the volatile matter from the coal and when this is cooled down suddenly so that it does not burn completely, it escapes out of the chimney as a very black smoke.

Most soft coals contain about thirty per cent of this volatile matter, which has a heating value when burned as high as any city gas. When discharged from the chimney this heating value is lost and black smoke containing tars, ashes, corrosive gases and water vapors settles on a city and creates some serious smoke problems.

Annual Waste \$200,000,000
It has been estimated that there is an annual loss and waste of fuel in the form of smoke amounting to \$200,000,000. In cities, one hundred and twenty-five to nineteen hundred tons of soot are deposited annually per square mile, depending on the type of fuel used and how it is fired. In Pittsburgh the weight of the soot settling on the city is greater than the total weight of the inhabitants of that city.

This soot blackens buildings, making it necessary to wash or sand blast brick or stone structures to clean them. One million six hundred thousand dollars is spent yearly in New York City alone to keep the city's towers clean. Houses must be repainted oftener in smoky cities. Metal structures must be repaired or replaced more often because of corrosive constituents, mainly sulphuric acid in smoke and soot. The housewife must clean and dust more often where there is much smoke and the laundry bills are very much higher. There also are the damages done to crops, trees and vegetation.

The annual smoke bill, taking all of these things into consideration, and including medical expense due to smoke for the United States is estimated at \$2,400,000,000, or about \$100 for every family of five.

Smoke and Your Health

What about the effect of smoke on health? There is little question that it affects the membranes of the eye, nose, throat and lungs, making a more favorable condition for bacterial activity. Every human breathes thirty to thirty-seven pounds of air every twenty-four hours, which is four to seven times the weight of food and water taken into the body during the same time. Under fog conditions as many as 500 billion particles of solid matter including soot, ashes, dust and tar pass in and out of the human system in a day. Meller of the Pittsburgh Bureau of Smoke Regulation stated that "more persons are devitalized, disabled and poisoned by impurities contained in smoke polluted air than by the noxious in-

gredients in food and water. No wonder that the cases of respiratory diseases, colds, bronchitis and pneumonia are more numerous in smoky cities than in those with less smoke. Death rates in the cities of the United States where there is excessive smoke is three times as great as similar cities where there is little smoke. In foggy weather the deaths in smoky cities rose from 35 to 233 per 100,000, while at the same time with fog alone and little smoke the rate increased from 31 to 93.

It is interesting to note that in 1918 when this country had its greatest industrial boom which means greatest amounts of smoke, that there was the greatest death rate from pneumonia, and that during a coal strike in England in 1928 many towns noted the greatest reduction in mortalities from respiratory diseases. Though the public is well protected by food and drug laws and supplied with pure water, the sanitation of the air is worse now than it was a hundred years ago though pure air is one of the vital essentials of good health. Once the Countess of Warwick asserted, "It is really as great a crime to pour poison into one's neighbors lungs as it is to put poison in his coffee."

This is only part of the story of the effect of smoke on health. At times smoke will cut off from 50 to 80% of the sun's rays, which are so important to health. No wonder that there are so many children with rickets in smoky cities. Many thousands of dollars are spent for antirachitic medicines yearly to counteract the lack of beneficial sunshine. Many cases of anemia are also traceable to this decrease in ultraviolet rays because of excessive smoke. Where there is a large percentage of darkness the number of cases of nervous ailments is always increased. The expense of artificial lighting is much higher in cities over which hangs a continuous smoke screen. Natural heat coming to the earth is decreased, which means that more fuel must be burned, which again means more smoke. General vegetation, crops and egg production are also seriously affected because of the decreased intensity of the sunlight. Smoke is troublesome to aviation, blotting out landing fields and otherwise interfering with flying.

It is hardly necessary to call your attention to the defacing effect of smoke on beautiful private and public buildings, parks, monuments, paintings, and other objects of art.

Who Is Responsible?

Who is responsible for the excessive amount of black smoke? You will, of course, say the factories, railroads, steamships and steam shovels. Actually it is the numerous dwellings and apartment buildings that contribute 70 or 80 per cent of the air pollution. There are three reasons why the industries contribute the relatively smaller amount. Most of them appreciate the loss of heating value of the fuel that is discharged as smoke from chimneys. Most of the municipalities have smoke prevention ordinances which limit the discharge of smoke from chimneys of industrial plants, railroads and steamboats, but not from dwellings, and which are more or less effectively enforced. One reason why dwellings are exempt is the greater cost of inspection because of the larger number of offenders and the greater difficulty of enforcement. In some cities dense or black smoke only must be eliminated, whereas others allow the discharge of moderately dense smoke for six minutes every hour, or two minutes in every fifteen. It is because fresh cold coal charged on a fire unavoidably forms a considerable amount of dark smoke. The third reason is that enterprising industries install suitable equipment for burning a smoky fuel and use smoke consumers and smoke precipitators so that an almost smokeless combustion takes place. Also many of the industrial leaders have enough civic pride to maintain a clean and beautiful city.

More difficulty is experienced in burning bituminous coal without excessive smoke in domestic stoves, furnaces or boilers than in industrial furnaces because of improper design and mainly because of poor firing methods.

How to Fire the Furnace

To prevent smoke a large enough supply of air must be furnished to completely burn carbonaceous matter in the smoke before

it escapes from the stack. Proper firing requires that small quantities of fuel should be added to the fire at frequent intervals so that the fire is not chilled and less smoke forms with each charge. A large enough fire dome insures the more complete burning up of the volatile matter dispelled from the fresh coal provided enough air has been supplied. It is desirable before charging fresh coal to push the hot coals to the back of the fire pot and to drop the fresh fuel to the front. In this way the fire is not chilled and the smoke forming constituents pass over the hot fire and are more completely burned. Such methods of firing would not only save from fifteen to twenty dollars worth of fuel for an ordinary household but would eliminate the undesirable smoke. To feed a fire at frequent intervals is troublesome and the householder or engineer who does so is careless and lacks interest in saving fuel or preventing smoke though he complains of the smoke nuisance his neighbor is creating.

How can the smoke nuisance then be reduced? By changing the type of fuel used. By changing the equipment or by changing the method of manipulating the fire with present equipment.

Naturally electric heat would be most desirable. Gas can be burned without producing smoke or dust of any kind. Coals with low volatile matter content such as Pocahontas coal and better yet, anthracite coal, are desirable. Cokes that are made by distilling the volatile matter out of coals in making city gas, burn under suitable conditions without forming smoke. The cost of the fuel and the necessity of changing equipment will determine what fuel to use.

Many new heating appliances have appeared on the market that will burn soft coal efficiently and without producing smoke, but are not suitable for all kinds of fuels. They are designed to supply the proper amount of air for complete combustion, with suitable burning domes, and some are equipped with underfeet stokers that add small quantities of fresh fuel regularly. Most of the present heating devices could be made to burn most fuels smokelessly under proper firing conditions.

Mercury Dust Lifts Corn Yield

Seed treating experiments conducted for three years in five localities in Minnesota have shown that treating sweet corn seed with organic mercury dust disinfectants increased the average stand 4.29 per cent and increased the average yield more than 10 per cent. Investigations in this state are now under way with field corn. Seed treatment prevents much of the loss ordinarily occurring from seedling blight. This is especially important when cool, wet weather follows planting.

Experiments with field corn conducted co-operatively by the U. S. Department of Agriculture and the Illinois Agricultural Experiment Station, for 11 years, indicate that the yield of corn grown from average farmer's seed was increased about three bushels per acre by the use of seed dust disinfectants. Better stands and increased early vegetative growth usually followed seed treatment.

Both the cash cost and the labor of treating corn seed is very slight, the cost of dust being only about three or four cents per acre. Three ounces of dust per bushel of seed is sufficient.

Heads Architecture Schools Association

A Minnesota faculty member, Professor Roy C. Jones, is president this year of the Association of Collegiate Schools of Architecture. This is an association of the best of the architectural schools, 30 of the 55 schools being able to meet the standards for admission. Several years ago Professor Jones obtained a year's leave of absence and made a survey of schools of architecture in the United States and Canada on behalf of the Association of Collegiate Schools of Architecture. It was financed by one of the foundations. "They told me I'd have to be president," he said. "I replied that I'd prefer to be their Colonel House, but here I am."

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Shepherd's Tale For Februarie Is Told Feelinglie

In his, "Shepherds Calendar" (1579) Edmund Spenser wrote an eclogue for each month of the year. One of the most appealing of these is the tale for Februarie. In a preface describing "the generall Argument of the whole Booke" it is explained that an eclogue is a tale told by a goatherd, which, in England, would naturally be told rather by a herder of sheep.

This Aeglogue is rather morall and general than bent to anie secret or particular purpose. It specieallie containeth a discourse of olde age, in the person of Thenot, an old shepheard. The matter verie well accordeth with the season of the moneth, the yeare now drooping, and as it were drawing to his last age. For as in this time of yeare, so then in our bodies there is a dry and withering cold, which congealeth the crudled blood, and frieseth the weather beaten flesh, with Stormes of Fortune and hoare frosts of care. To which purpose the olde man telleth a tale of the Oake and the Brier, so livelie, and so feelinglie, as if the thing were set forth in some picture before our eyes, more plainlie could not appeare.

Februarie

THERE grew an aged Tree on the greene,
A goodly Oake sometime had it bene,
With armes full strong and largely displaide,
But of their leaves they were disaraid:
The body bigge, and mightily fight,
Thoroughly rooted, and of wondrous hight:
Whilome had bene the king of the field,
And mochel mast to the husband did yeeld,
And with his nuts larded many swine.
And now the gray mosse marred his rine,
His bared boughes were beaten with stormes,
His top was bald, and wasted with worms,
His honour decayed, his branches sere.

Hard by his side grew a bragging Breere,
Which proudly thrust into th' element,
And seemed to threat the Firmament:
It was embellisht with blossomes faire,
And thereto aye wonned to repaire
The shepheards daughters, to gather flowres,
To paint their girlonds with his colowres.
And in his small bushes used to shrowde
The sweet Nightingale, singing so lowde:
Which made this foolish Breere wexe so bold,
That on a time he cast him to scold
And sneebe the good Oake, for he was old.

Why standst there (quoth he) though brutish blocke?
Nor for fruit, nor for shadowe serves thy stocke:
Seest how fresh my flowres bene spread,
Died in Lillie white, and Crimsin red,
With leaves engrained in lustie greene,
Colours meete to cloath a maiden Queene.
Thy waste bignesse but cumbers the ground,
And dirkes the beautie of my blossomes round.
The mouldie mosse, which thee accloith,
My Sinamon smell too much annoyeth.
Wherefore soone I rede thee hence remove,
Least though the price of my displeasure prove.
So spake this bold Breere with great disdain:
Little him answered the Oake againe,

(Continued on Page 4, Column 1)



An old woodcut illustration of the eclogue of the Oak and the Briar, which is printed in column one on this page.

Commission Asks an End to World Trade Barriers and Isolation Policy

Urges Reducing Tariffs, and Abandonment of Quotas and Trade Restrictions; Wants Stable Dollar

Six major immediate steps to remove barriers to world trade are recommended to the American people as indispensable for recovery and development by the Commission of Inquiry into National Policy in International Economic Relations in its final report, made public recently. The report is based on a year's comprehensive study following hearings in various parts of the United States. It has the unanimous approval of the commission, a group of individuals drawn from various parts of the country and representing widely divergent interests. One of its members is Guy Stanton Ford, dean of the graduate school in the University of Minnesota. Its chairman was President Robert M. Hutchins of the University of Chicago. During much of the commission's work Dr. Alvin H. Hansen of the University of Minnesota was its director of research.

Six major proposals involving political, economic and administrative adjustments recommended to the American people by the Commission are:

1. Adoption of political measures, such as immediate settlement of the war debts, to relieve the distrust and tension now prevalent in the world.
2. Removal of tariffs where no unemployment would result, and lowering of other tariffs subject to proper safeguards.
3. Announcement by the President that he does not intend to exercise his present powers to change the gold content of the dollar.
4. Granting by Congress of wider powers to the Tariff Commission.
5. Freedom from governmental restrictions on foreign long-term private loans.
6. Abandonment at the earliest possible moment of all measures tending to restrict agricultural exports.

To reverse the trend toward economic isolation as rapidly and dramatically as possible, the commission urges the United States to promote the interchange of goods and services among nations.

Has President's Approval

The Commission of Inquiry into National Policy in International Economic Relations was appointed, with the approval of President Roosevelt, by the Social Science Research Council, a national organization representing seven national professional societies in the social science field.

The Commission was asked to:

Examine the present situation in the United States in which various practices and principles of nationalism and internationalism bear on national policy in international economic relations;

Canvass the directions and objectives of American policy, and their possible results in terms of the welfare of the American people; and

Make a report presenting an analysis of the problems involved together with relevant recommendations.

At the request of the Social Science Research Council, the Rockefeller Foundation financed the work of the commission. The commission is non-partisan in personnel and purpose. It is responsible neither to the government, nor to the Rockefeller Foundation; it is making its report directly to the American people.

In addition to Dr. Hutchins and Dean Ford, members of the commission are: William Tudor Gardner, vice-chairman of the commission, chairman of the board, Incorporated Investors, Boston, Mass., and former Governor of Maine; Carl L. Alsberg, director, Food Research Institute, Stanford University, Cal.; Isaiah Bowman, director, American Geographical Society of New York, chairman, National Research Council, Washington, D. C.; Beardsley Ruml, treasurer, R. H. Macy & Company, Inc., New York City; and Alfred H. Stone, chairman, Mississippi State Tax Commission, Jackson, Miss.

Hearings Throughout Country

The report is based on a thorough study of the problems involved and a careful consideration of current literature on the subject.

(Continued on Page 2, Column 2)



Dean Guy Stanton Ford

Dr. Bothne, Ibsen Scholar, Is Dead

Headed Department Scandinavian Literature at Minnesota for Ten Years

Dr. Gisle Bothne, professor emeritus of Scandinavian languages at the University of Minnesota, died of a heart attack December 8. He was 74 years old.

Resident of this country for fifty-eight years, Dr. Bothne for more than two score years had been recognized as an authority on the works and life of Henrik Ibsen. In 1928, in company with other leading Ibsen students and Norwegian writers of the world, Professor Bothne went to Norway as guest of that country for celebration of the 100th anniversary of Ibsen's birth. In testimony of his position in Norwegian literature, the King of Norway made him a Knight Commander of the Order of St. Olaf.

Dr. Bothne was born in Fredrikshald, Norway, and came to the United States at the age of 16. He attended Luther College at Decorah, Iowa, receiving his A. B. degree there in 1878. At the same institution he obtained his Master's degree five years later, after graduate studies at Johns Hopkins and Northwestern universities, the Universities of Christiania and the University of Berlin.

From 1884 to 1907 he was Professor of Greek and Scandinavian Languages at Luther College. In the fall of 1907 he was named Associate Professor of Scandinavian Languages and Literature at the University of Minnesota. In 1919 he was made head of the department and continued to direct its activities for the ensuing ten years until his retirement under the university rule in 1929.

Surviving are his widow, Katharine; two daughters, Miss Dikke Bothne and Mrs. Robert Brown; a brother, Dr. Erling Bothne of Ulen, Minn.; and two sisters, Mrs. O. L. Griffen and Miss Anne Bothne, both of Chicago.

Minnesota Joins in Experiments

Minnesota is one of a number of universities which will admit students who do not meet all entrance requirements if they come recommended under a new plan that is being tried out by the Progressive Education association. Twenty secondary schools in different parts of the United States will offer the preparatory course stressing social studies, that has been worked out by the association. Although this course will not comply with university entrance requirements the students, probably few in number at any one institution, will be admitted as a test of the worth of the new secondary curriculum.

President Urges Reapportioning Education's Task

Believes Regional Universities Would Do Job Better Than Present Arrangement

CONCERNED FOR YOUTH

Biennial Report to Regents Makes Prediction of Future Educational Trends

Development of "regional universities" and the encouragement and growth of co-operative researches by two or more universities, rather than duplication of effort in a number of institutions in the same part of the country, are among major points made by President Lotus D. Coffman of the University of Minnesota in his biennial report to the Board of Regents. He expressed the opinion that educational institutions should take the initiative in co-operative investigation rather than waiting to have such an arrangement forced upon them.

Outlining what he called, "the course I think education will follow in the future," Dr. Coffman said:

"It is my opinion that the federal government will find it both advisable and necessary to provide a fair share of the support needed to maintain the elementary schools of this country. I believe also that Congress will not confine its appropriations in the field of higher education to agriculture and engineering. I am of the opinion that credits, honor points, and examinations by instructors will soon disappear. I believe that the general education of our youth will end with the sophomore year or junior college, and that it will be carried on in the secondary schools. I think that this general education will be devoted to preparing students for their social, civic and political responsibilities, that college and university education—especially university education—will be dedicated to the training of young men and young women of superior talent for scholarly effort and high professional service."

Concerned for Youth

Dr. Coffman repeats in his report the statement he has made before that the schools and universities of America must be called on to play an increasing part in the direction and guidance of the vast numbers of unemployed young people in this country. In line with the proposals he made nearly two years ago that led to the government's present policy of helping many young men and women attend college, he said:

"Unemployment for any age group is always serious, but unemployment of youth is the most serious of all. It means that the right character traits are not being developed in young people. It is serious because the training of future leaders is neglected. It is serious because it engenders false notions and bad habits unless the proper correctives are provided." He pointed out that in Minnesota alone there are 80,000 young people between 16 and 24 years of age, of whom perhaps 25,000 have been or are in college, while of the remainder few have been able to find work.

"If possible," he said, "both moral and financial provision should be made for those whose achievement and ability justify their wish to return to school. If the federal government feels that it is sound social policy to place 300,000 young men in forestry and erosion camps, why should it not feel that it is even sounder—I should say—for it to provide aid for deserving and competent youth to attend college? Why should not both the state and federal governments participate in this important matter in the present emergency? Money devoted to this end will not be charity nor relief; it will be an

(Continued on Page 2, Column 1)

President Makes Biennial Report

(Continued from Page 1, Column 5)
investment in future leadership."

Leaders Require Intelligence
The president of the university stated his convictions on leadership, for which higher education is supposed to train, by saying: "Only those can become leaders in a conspicuous sense who possess high intelligence, sound character, sound judgment and forceful personalities. One should equip himself to become a useful member of society before trying to lead it. This means that he must possess something more than conviction; he must have wide, general knowledge. There are few beardless experts among the genuine leaders. There is wisdom in experience, in power to marshal knowledge. I have profound faith in the ultimate possibilities of youth; I know full well that genius and talent do not wait until old age to display themselves; I know, too, the evil effects of trying to profit by the unwisdom of inexperience and ignorance. Leadership, however, is something that should be achieved, and then it should be respected and supported because of its inherent worth."

Adult Education Plan

A new type of adult education is proposed in President Coffman's report. This would be education, not so much of the masses of adults, through lectures and pamphlets, as an organized effort to bring up to date the knowledge of those who have already achieved a degree of leadership in adult life.

It is his proposal that the University of Minnesota establish a center to which it should bring clergymen, physicians, and other professional men for carefully organized courses of instruction. To the same center would be brought, also, non-professional groups, such as, say, members of the League of Women Voters.

The proposal to establish such a center for clergymen has already been made to one of the important church organizations in the state, which viewed it with favor, the report states.

"Fads and frills," said Dr. Coffman, have been added to the school curriculum because certain groups have insistently urged that they be brought in, one after another. He showed how this has been true of such subjects as music, domestic science, physical education and safety instruction, each of which has at some time been called "a frill."

The increasing complexity of society and youth's great faith in education are main factors in causing the increased cost of education, Dr. Coffman said, although rapid growth in the proportion of adults to youth has been another important factor, because the education of the older group of young people is more expensive than that of the younger.

Youth's Faith in Education
"Youth knows that education prepared and equipped a generation for the building of the greatest industrial society and commercial civilization the world has ever witnessed," he said. "Youth believes that education can help build another civilization, one that will be more secure and better than the present. Youth knows it will be the leader. I never was so certain in all my life as I am now that there will be need for more education in the future. I am not only convinced that general education will be necessary and more prevalent, but also that the point of view of those engaged in this profession will be saturated more with ideals of service and less with those of personal gain."

Among the changes in education that will place the broad general education of the largest group in the secondary schools and the development of professional and research talent in the universities, Dr. Coffman predicted the growth of a type of technical institution that will provide vocational training in co-operation with the trades and professions. Such schools are now conducted in England under the direction of the ministry of labor.

"There is every reason for establishing such schools, for the number of unemployed youth is not likely to decrease in the near future," he said.

Calling attention to the fact that every state has a land grant college, and that in one instance the land grant colleges at Moscow, Idaho, and Pullman, Washington, are but eight miles apart, Dr. Coffman called the arrangement waste-

Coffey Honored At Stock Show

Dean W. C. Coffey of the department of agriculture has returned from the International Livestock Exposition in Chicago, where he was re-elected for a three-year term as a director. He served as toastmaster there at the golden anniversary banquet of the American Shropshire Registry association.

Even without the swine breeding classes, which were discontinued this year, the fine new building provided for the show was crowded to capacity, he said. The International Hay and Grain show did not have room enough, and, now that the swine men of the country are asking that the breeding classes be restored at future shows, an expansion of the facilities is a matter for consideration on the part of the directors.

Dean Coffey reports a better feeling on the part of the farmers in attendance. This was true for the sheep men, who have had a fairly satisfactory market for their lambs this season.

Commission Asks End to Isolation

(Continued from Page 1, Column 3)

ject as well as consultations with public officials, business men, farmers, industrialists, economists and others, at public hearings in representative cities throughout the country. It marks a notable attempt by a non-governmental, non-political group to formulate a sound policy for the United States to follow in its economic relations with the other countries of the world. The report, a document of approximately 400 pages, consists of the following five parts: (1) Recommendations of the commission; (2) Reasons for the recommendations; (3) Report of Alvin H. Hansen, director of research; (4) Selected memoranda (a) statements made before the commission, (b) memoranda submitted to the commission; (5) Summary of hearings. The report has been published in book form by The University of Minnesota Press.

Political Measures Recommended

The commission emphasizes that international economic relations cannot be greatly improved until the distrust and tension now prevailing in the world are relieved. It, therefore, recommends that the government adopt the following political measures:

1. Continued participation in the Disarmament Conference, co-operation with the League of Nations in such of its activities as cannot involve us in European conflicts, and adherence to the World Court.
2. Continuance of present policy in South America and the Caribbean as exemplified by the Montevideo Conference, the repeal of the Platt Amendment, and the withdrawal of troops from Haiti.
3. Immediate withdrawal from the Philippines on

ful and said it involves "conspicuous duplication." He said he foresaw not only the development of regional universities, but an era of co-operation, in which colleges in the same general area would divide up their research problems. Each university would go to work on those problems with which it was best fitted to cope. He urged that the same thing be done for libraries, rather than having every library try to complete its collections in all fields of learning. He also pointed out the present strong trend toward the elimination of many weak colleges through consolidations or by having them become junior colleges.

Elaborating his plan for a regional university, Dr. Coffman said that in the northwest, for example, one carefully situated university might carry on the chief work in advanced research, for example, in medicine, and other states provide scholarships to send to it a group of picked men.

"It is my candid opinion," he said, "that the nation would be far ahead in productive scientific work if there were a regionalizing of institutions. One great university somewhere in the northwest, staffed with the best minds that can be found, adequately equipped to study the problems of this region, would be more productive scientifically than half a dozen institutions poorly equipped and inadequately staffed."

Collegium Musicum Visits Alexandria

The Collegium Musicum, a new student musical organization at the University of Minnesota, directed by Professor Abe Pepinsky, went to Alexandria December 7 for its first public performance. It played there under the auspices of the Euterpean Club.

Formed two years ago, the Collegium Musicum is an organization that devotes itself to the study and performance of musical literature between the ranges of chamber music and symphonic compositions. It is copied after a type that was common in seventeenth and eighteenth century Germany and England, and much of its music is drawn from the eighteenth century, although it also plays contemporary music. Strings predominate among its instruments.

For more than a year past the Collegium Musicum has played at the Thursday afternoon informal music hours that are held at 4:30 p. m. in the Music Auditorium, when all students and faculty members are "free to drop in and listen or doze" according to Mr. Pepinsky. Miss Minerva Pepinsky, who teaches German and music in the Alexandria schools, was violin soloist at the Alexandria appearance.

terms that will protect their economic life from injury by American tariffs.

4. Placing Oriental immigration on a nondiscriminatory basis.
5. Repeal of the Johnson Act forbidding loans to countries in default.
6. Immediate settlement of the war debts.

The commission expresses the belief that the interests of the United States do not require any payment, but that since some countries desire to pay something, a commission should be appointed with full power to effect settlements.

7. That the government make it clear that future investments abroad are at the investor's risk.

The commission points out the possibilities of friction involved in even the customary diplomatic representations as to foreign investments. The investor should be remitted for assistance or redress to the authorities of the country where the investment is made, the report states.

Economic Measures Recommended

Economic measures pertaining to the tariff, agricultural policy, foreign investments and monetary policy are recommended in the commission's report, to achieve a more wholesome balance in the international accounts of the United States.

Economic isolation as an alternative to freer international trade, the commission points out, would involve a drastic dislocation and reorganization of industry and agriculture and of capital and labor.

Regarding the tariff, the report urges the adoption of the following measures:

1. The removal of tariffs in all cases in which no serious additions to unemployment would result. Among those the commission lists:
 - (a) Tariffs on noncompetitive products
 - (b) Ineffective rates
 - (c) Tariffs exclusively for revenue
 - (d) Tariffs on goods of which we import almost all our domestic consumption
 - (e) Tariffs on goods requiring types of craftsmanship not developed in the United States
 - (f) Tariffs on certain minerals of which the United States has scanty supplies, or which have been overextended in sub-marginal production areas
 - (g) Seasonally, those on seasonal imports
2. "If those measures do not prove adequate to increase imports to the necessary degree," the commission states, "rates on other commodities should be lowered, with the proviso that the increases in the volume of goods admitted be subject to control in order to minimize the danger of unemployment. It is desirable in the interest of internal law and order and international trade to restore tariff and internal revenue rates for imported beer, wines,

Extension Enrollment Goes Up; New Gain Seen in Next Semester

Expert Aid for Barley Raisers

Minnesota farmers learned about barley at five all-day barley improvement meetings held during the week of December 17 in southern Minnesota. Ralph F. Crim, Evan W. Hall, H. R. Sumner and M. J. Johnson, crop experts, conducted the meetings. The purpose of these meetings was to acquaint farmers with the best methods of raising, harvesting and handling barley. At each meeting free examinations of samples of seed barley were made. The kinds of barley desired by the maltster, control of blight and smut, best varieties to raise, barley grading, threshing problems and handling were discussed. The meetings were held at Lakefield, Fulda, Wykoff, Rushford and Caladonia.

and spirits to the levels of the Underwood Tariff of 1913."

3. Consideration by the government of payment, under proper safeguards, of a dismissal wage to labor thrown out of employment as a direct consequence of sudden changes in tariff.

4. Speedy negotiation of reciprocal trade agreements pending downward revision of the tariff. Reciprocal trade agreements are not regarded by the commission as a substitute for tariff revision because the Trade Agreements Act limits reductions to only 50 percent of existing rates and only to cases where other countries reciprocate.

Agricultural Policies

"The commission recognizes the present necessity for fundamental readjustments in American agriculture and feels that the policies now being applied by the Department of Agriculture should be continued long enough to determine their practical value," this report says.

The commission recommends:

- (1) Continuation of subsidies such as those provided under the present domestic allotment program as supplements to agricultural tariffs which are likely to be ineffective.
- (2) Discontinuance at the earliest possible moment of all price-raising measures which do not differentiate between domestic and world prices. Such measures, the commission states, will stimulate foreign production to the detriment of the farmer's export market.
- (3) Abandonment at the earliest possible moment of all other measures tending to restrict exports, such as the cotton loan policy.

Such measures, according to the report, not only tend to restrict exports by maintaining an artificially high price for American cotton but may also make necessary severe reductions in cotton production in this country in order to protect the loan extended by the government.

Monetary Policy Outlined

The commission urges the following measures on monetary policy:

- (1) That gold stocks be used exclusively as at present for the balancing of international payments.
- (2) That in order to promote confidence the government announce that although it will retain its present powers under the Gold Purchase Act to change the price of gold within the limits there stated, it does not intend to exercise those powers and that it will freely permit the export of gold at the present official price for the settlement of international payments.

The commission stresses that there is nothing to the belief that the price level can be raised by raising the official price of gold. It points out that the government may enlarge purchasing power through maintaining for a time a large federal deficit. Such a deficit, the commission asserts, may be created by reducing taxes as

Depression Has Brought Lessons That Send Many to Studies, Division Head Says

Following a fall semester in which its registration rose more than a third higher than it had been a year ago, the General Extension Division of the university is looking forward to a continuation of the enrollment gain in the second semester, starting February 4. The General Extension Division's college year is divided into two semesters, each running for sixteen weeks of classroom meetings and a seventeenth for the examination. The fall semester began in October.

Enrollment for the second extension semester will be opened on January 21 and will continue through the first week of the semester, namely, until Saturday, February 9.

Figures released by Dr. Richard R. Price, head of the General Extension Division, show that 4,267 students were regularly enrolled in evening classes in Minneapolis, St. Paul and Duluth during the first semester this year, as compared with 2,950 who were enrolled at the same time a year ago. Prior to this year evening class enrollments had been dropping since the spring semester of 1932, after having held up through the first three years of depression. Last spring, when there was no percentage decline from the spring semester of 1933, Dr. Price predicted that the trend had turned and that enrollment would be larger this year. His faith in this development proved to have been justified when registration took place last fall.

Seek Self-Government

A majority of students in the General Extension Division are working for the sake of self-improvement rather than college credit, a tabulation shows. All extension classes, in every semester, are open to students who wish to enroll, whether they are seeking college credit, or have the prerequisites, or not. Only those who are asking regular university credits must meet all entrance requirements, prerequisites, and pass the final examinations.

Last year and this a number of survey courses, some of them less than a semester in length, have been offered, covering various fields of knowledge in which interest has been stirred up by the unusual events of recent years. Current economic and governmental problems in the United States, comparisons of the several types of fascist and communal government that in a few countries have displaced democracy, and examination of the social and legislative aspects of the changing times have been made the subjects for some of these courses. Another departure has been the policy of having several people lecture in the same course on successive evenings, each dealing with that aspect of the subject with which he is most familiar.

Another group of courses that is proving popular this year has dealt with subjects primarily in the class of recreations or hobbies. A course in stamp collecting, courses in group and individual games and in different aspects of music, have been developed.

Vocational and semi-vocational courses are offered each semester in engineering, business, and some in arts and sciences, such as short story writing, the writing of magazine and newspaper articles, interior decorating, music, and the like. In general courses offered in the evening fall into the main groups of arts and sciences, business, engineering and education. In the last-mentioned group are courses of special interest to men and women who are teaching in the public schools of the twin cities and of other communities near enough at hand so that the teachers can reach the campus to attend.

Downtown registration offices are maintained in both Minneapolis and St. Paul. That in Minneapolis is in the Northwestern Bank building. The St. Paul office is at 500 Robert street. The Duluth office is in the Alworth building.

well as by increasing expenditures. Such a deficit for emergency purposes, however, it points out, need not threaten our financial structure if accompanied by sound policies for increasing production and employment.

Press Publishes Three Books by Faculty Members

Higher Educational Policy, Britain's Recovery Effort and Upper River Problems Traced

Education for Democracy: By J. B. Johnson, dean of the College of Science, Literature and the Arts, University of Minnesota Press.

Nationally prominent as a student of the individual differences between college students, and a firm believer in the use of tests that will reveal those differences, so that the college may place the student where he will benefit most, Dean Johnson has made these and related themes the topic of his book. No believer in intellectual equality, Dean Johnson restates a theme he has emphasized before, namely, that society must provide one kind of education for those who are to be its leaders, its top teachers and those who extend the boundaries of knowledge and the realms of science. For others, he says, let us provide the education for which they are best suited, that which will contribute both to their happiness and to their graceful merging into an efficient citizenry.

In a brief preface he says: The author seeks to focus attention on the function of the educational system in a democracy. The purpose of public education is to realize the ideal of government by the people and for the people. This can be done by training youth to perform the services they can carry on efficiently and by helping them to understand how groups and individuals co-operate to set up conditions necessary for the welfare of all.

"The papers selected have been arranged not in chronological order but in something approaching a logical sequence. They have been supplemented by some chapters dealing with fundamental considerations regarding individual characteristics and abilities which some teachers and most of the general public do not understand.

"Such topics as individual differences, child study, guidance, differentiation of curricula, and selection have been discussed before different audiences from different points of view. It is hoped that the different modes of approach may be helpful to the reader.

"It is perhaps too much to expect that papers addressed to teachers will be read by any considerable number of the general public. However, several chapters are intended primarily for the parents of students and for all who are interested in public policies. The greatest need of higher education today is that the principles determining its character should receive understanding and support from the whole people. For the present, one of the best opportunities for the education of the public is found in the contacts that teachers have with the parents of their students. The significance for the public welfare of both public secondary and higher education should be an almost constant topic for consideration in parent-teacher associations, at Dad's Days and Mother's Days and in the gatherings of college alumni."

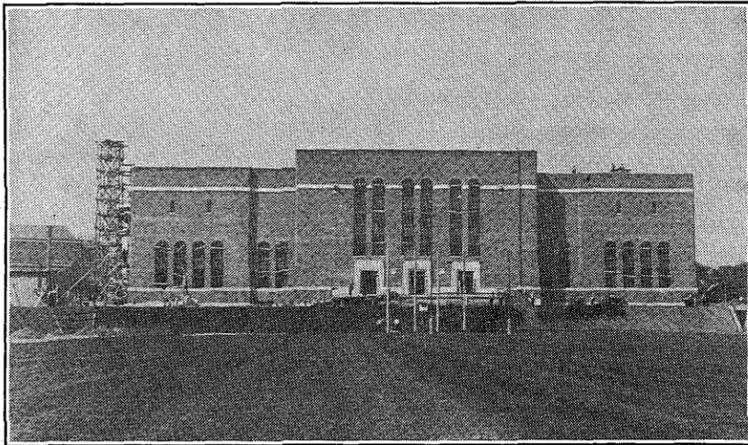
The British Way to Recovery: By Herbert Heaton, professor of History, University of Minnesota. The University of Minnesota Press.

A student of history who has written the story of some of the most important British industries from the point of view of the historian who has chosen to deal with materials of economic significance, Professor Heaton has taken time to glance briefly at the policies that have accompanied the start of recovery in Britain. These policies, and the situation to which they have led, he compares with the policies and situations to be found in the United States, in Canada, and in Australia. With all of these countries he has a first hand familiarity.

Professor Heaton's book is a little one of 178 pages, really an extended pamphlet, and in his introduction he explains that it grew to this length from a half-hour address that was asked to prepare for the Students' Forum at the University of Minnesota. Furthermore, says he, it is still growing and in the future may appear in a more extended and comprehensive form.

England, he explains, was in no

University's New Athletic Building



Swimming pools, offices for department administrators and coaches, classrooms, game rooms, and a gymnasium covering an entire floor are in this structure, which will be ready for use before spring.

position to attempt an effort to spend itself into recovery, such as the United States is trying. After a period of excessive taxation that dated back to the end of the World War she has finally been able to balance her budget, make a decent, though not large, reduction in tax levies, and restore some of the pay cuts that had been forced upon civil servants and recipients of the dole. After "going off gold" England's other principal new weapon in the battle for recovery was a sharp shift from free trade to a rather extensive policy of protection. This has worked well, although the gains of industry resulting from that move have by now about spent their force as far as they can be measured by statistics of business increase. Apparently, however, they are being held.

Professor Heaton's book makes it clear that such plans as those formulated at the Imperial Economic Conference in Ottawa during the summer of 1932 are by no means a permanent solution of the trade difficulties between the British Isles and the great self-governing dominions. Furthermore, he shows how the present-day effort to do something for the British farmer, who for more than fifty years had been "the forgotten man" is no help to such exporters of foodstuffs as Canada and Australia. Even the efforts to help the farmer fall down to some extent before long standing custom, an instance being the Englishman's preference for "Danish streaky" when it comes to his breakfast rasher. Also, farmers' hopes of higher prices have been checked by the low level of consumers' incomes.

On the other hand, agriculture seems to have held some important gains, shipbuilding is reviving, there is practically a boom in building, a better demand for steel products and some considerable gain in coal exports. The textile trades still languish, but are not as badly off as they were at the time of the first rush of Japanese invasion into Britain's Indian and Chinese market for cotton cloth.

It seems that depreciation of the currency has been a most important aid toward such recovery as has taken place in England and the two dominions. There is interest also in a footnote which says that the balancing of the budget in 1934 has been due partly to the interest savings that have followed conversion of a large part of the national debt to a lower interest basis, and in part to the receipt of eight million pounds in death duties from the estate of one very wealthy Englishman who died at a convenient time.

From Canoe to Steel Barge on the Upper Mississippi: By Mildred L. Hartsough, University of Minnesota Press.

Miss Hartsough was formerly a member of the faculty of the School of Business Administration at the university. Her present book is not only a history of the upper river but in a considerable measure is an argument and appeal for the continued development of water transport between St. Louis and the Twin Cities. An introduction has been written by C. C. Webber of Deere and Webber, Minneapolis implement dealers, who has been the leader of the group that is working for the development of the upper Mississippi and the restoration of its traffic. All this is not to deny that Miss Hartsough's history of traffic on the upper river is fascinating and accurate.

Numerals Given First Year Men

Sixty-three Members of the Freshman Football Squad Honored

Sixty-three freshman football players were awarded numerals for the fall of 1934 by the athletic department of the University of Minnesota. The complete list is as follows:

Frank J. Barle, Gilbert; Russell L. Biddinger, Billings, Mont.; James A. Butler, Minneapolis; Kenneth Carlsen, St. Paul; Luther G. Cook, Billings, Mont.; Deland J. Croze, Minneapolis; Richard W. Edwards, Minneapolis; Dan T. Elmer, Minneapolis; Timothy P. Glenn, St. Paul; Rudolph Gmitro, Minneapolis; Robert Gomsrud, Minneapolis; Gordon P. Gooch, Minneapolis; Ralph A. Gornick, Tower; Edgar R. Grabenstein, Farmington; Don C. Griffin, Minneapolis; Phil H. Hansen, St. Paul; William M. Hilkene, Minneapolis; Robert J. Hoel, Minneapolis; J. A. Murray Hoff, Minneapolis; Irving L. Hork, Minneapolis; Alfred G. Hunter, Newberry, Mich.; Harlan F. Hurd, Minneapolis; Robert L. Jensen, Minneapolis; Robert W. Johnson, Anoka; Ray W. King, Duluth; A. Merle Larsen, Iron Mountain, Mich.; Jack B. Lazauskas, Scranton, Pa.; Jack R. Loomis, Minneapolis; James B. Lund, Stillwater.

Andrew M. Lundberg, St. Paul; Charles E. Lyman, Rockford, Ill.; Lawrence W. Mammen, Minneapolis; Clarence Manders, Milbank, S. D.; William K. Matheny, Anoka; Lewis B. Midler, St. Paul; Mike C. Milosevich, South St. Paul; Ernest E. Nyman, Minneapolis; Alfred A. Paulson, Amery, Wis.; Joe E. Pazandak, Minneapolis; Windinge C. Pedersen, Minneapolis; Nick Perkins, Pine City; Samuel A. Riley, L'Anse, Mich.; William C. Robinson, Minneapolis; Arthur Q. Rosen, Minneapolis; Eldon A. Rutten, Devils Lake, N. D.; Charles W. Schultz, St. Paul; Robert M. Sebbo, Racine, Wis.; Stanley J. Sitarz, Minneapolis.

Howard R. Skyberg, Minneapolis; Victor M. Spadaccini, Keewatin; John E. Sweeney, St. Paul; J. Robert Swenson, Minneapolis; Robert E. Teitgen, Manitowoc, Wis.; Clarence Thompson, Montevideo; Lee J. Thomson, Minneapolis; John P. Tomhave, Montevideo; Andrew Uram, Minneapolis; Ray H. Wallace, Fargo, N. D.; Robert Weld, Minneapolis; Chester R. White, Minneapolis; Russell F. Wile, Minneapolis; James H. Woolley, Minneapolis; Aaron Zweig, St. Paul.

New Literary Review Now Part of Daily

After many vicissitudes the Literary Review has come to what seems to be a permanent resting place as part of The Minnesota Daily. It will appear once a quarter as a supplement to The Daily, but will have an editorial staff of its own. Miss Betsy Emmons, a senior student majoring in English, has been appointed editor in chief. Business affairs of the Literary Review will be handled by The Daily's business staff. It replaces the old Minnesota Quarterly, which was run for some years as a scion of the department of English. The Quarterly is an All-University student periodical, and as such comes under the direction of the Board in Control of Student Publications.

Living Cost in Twin Cities About Stationary, Report Says

Australians Will Seek Training on Minnesota Campus

The merits of courses in social work training at the University of Minnesota have been recognized in far-off Australia, where the state of New South Wales is sending a party of fifteen woman workers, under two supervisors, to spend a month at the university studying various social programs.

The women will be representatives of the Board of Social Training and Study at Sydney. They will be under the direction of Miss Aileen Fitzpatrick, director of the board, and Miss M. C. Davis, its secretary.

In part the visit is an outcome of the tour of Australia made three years ago by President L. D. Coffman, and it is being financed in part by the Carnegie Corporation, of which Dr. Coffman is a trustee.

Why Minnesota was selected as the place in which the party will spend half of its two months sojourn in the United States is explained in a letter from Miss Fitzpatrick to Dr. Coffman, in which she said:

"I have found that Minneapolis and the state of Minnesota were of all the places I visited, nearer in many ways to our picture here, and a place where Australian students would be able to get their perspective more quickly than anywhere else. Then, too, you have achieved what I may call both an international and a national outlook, and I feel that this would be extremely helpful to us."

According to Professor F. Stuart Chapin, head of the department of sociology, who will direct their training at Minnesota, these women represent the first group in a new movement to consolidate social training in Australia and make it more up-to-date and efficient. Subjects to be studied at Minnesota will include psychiatric social work, child guidance, hospital social service, family welfare work, social service exchanges, care of delinquent children and children's library and recreation projects. One will study labor exchanges and employment services.

How to Buy Farm Told in Bulletin

Buying a farm is a momentous transaction in the life of the average farmer, and as an aid to prospective purchasers of farms, W. L. Cavert and G. A. Pond, of the division of agricultural economics, University Farm, have just issued a bulletin, "Suggestions to Purchasers of Farms."

In forming an opinion as to the value of a particular farm, purchasers are urged to consider soil maps, the condition of growing crops, the kind of crops raised, the financial success of previous operators, the amount of livestock that has been carried, the opinion of neighboring farmers, the nature of the buildings, the location of the farm, and the amount of unimproved land. Crops that look well are a favorable indication, but one should see a farm in both wet and dry seasons.

In general, a large acreage of barley, corn, wheat and alfalfa in good condition, suggests a productive soil. The amount of livestock that has been fed from the crop is a guide to productivity.

Unless one is getting an unusual bargain, the bulletin concludes, he should not buy without being able to make a cash payment of one-third to one-half the purchase price. He should not buy on "a shoestring."

This bulletin may be had free by writing the Bulletin Office, University Farm, and requesting Bulletin 309.

Lectures on Practical Art
"Visual aids in salesmanship" was the subject of a lecture at the University of Minnesota Nov. 12 by Egmont Arens of New York, whose field is industrial styling. He told how industrial packaging of an artistic sort could aid business. On Nov. 26 Mrs. Ethel Holland Little, fashion editor of The Woman's Home Companion, spoke. Both lectures were presented by the Owatonna Art Education project, which is functioning under the College of Education.

Considerable Rise Noted Over Year, But Little in Last Six Months

Cost of living in Minneapolis and St. Paul, computed on the basis of a workingman's budget, has made only a negligible change during the past six months, namely, May 15 to November 15, 1934, it was announced by the School of Business Administration, University of Minnesota. The index is computed twice a year by E. A. Gaumnitz, and announced by Dean R. A. Stevenson.

Over the term of a year, on the other hand, the index, with 1929 as 100, has risen from 84. to 87.7 in Minneapolis and from 84. to 87.8 in St. Paul. During the most recent six months period the rise has been only seven-tenths of one percent in the former city and eight-tenths of one percent in the latter.

The index was at its lowest in the spring of 1933, when it stood at 72.8 in Minneapolis and at 74.5 in St. Paul.

Items included in the calculation of the index are food, clothing, divided into men's, boys, women's and girls', furniture, house furnishings, houseware and appliances, fuel and utilities, transportation, drugs, rent, and miscellaneous items.

The index of residential rents shows a slight change that is important because it is a change in trend. This shows a slight upturn in Minneapolis and a slightly smaller one in St. Paul. In Minneapolis the index of low priced houses (rents) went from 78.3 last spring to 80.7 this fall and low priced apartments from 79.2 to 80.5. Medium priced houses went from 73. to 73.9 and apartments remained stationary at 79.9. In St. Paul low priced house rents rose two-tenths of one percent to 82.7; low priced apartment rents declined one-tenth of one percent to 84.6; medium priced houses remained stationary at 80. and medium priced apartments went up only from 69.7 to 70.

The changes in all items of the group, taking last spring's prices as 100 and reflecting movements in percentages, are as follows:

Items	Mpls.	St. Paul
Food	102.1	101.3
Clothing—		
Men	130.2	100.
Boys	100.	100.
Women	99.8	99.8
Girls	99.9	100.
Total	100.	99.9
Furniture	101.	103.5
House Furnishings	100.	99.9
Housewares and appliances	100.2	100.8
Fuel and utilities	100.2	100.2
Transportation	100.	100.
Drugs, etc.	100.	100.
Rent	101.2	100.
Miscellaneous	100.1	100.1
Weighted total	100.7	100.8

Dean Stevenson pointed out that although the gain in food prices is small it is the one of greatest significance to the consumer. While food prices show a gain of nine percent over a year ago, and smaller gains, shown in the table for the past six months, they have registered a very small decline since September, he said.

Because the price changes of some items is seasonal as well as cyclical, comparisons covering a year would be more accurate than those of six months periods, but more service is performed by putting out the figures every six months, Dean Stevenson said.

Dr. Homer J. Smith, professor of industrial education of the University of Minnesota, spoke before the Industrial Arts, Secondary School Principals and Vocational Education section of the Missouri State Teachers Association held in Kansas City November 8 and 9. He also gave an address before the general session of the Negro State Teachers' Association.

A national conference of 10 leaders in vocational education called by the United States Office of Education met in Washington, D. C., November 19, 20 and 21. Dr. Homer J. Smith, professor of industrial education at the University of Minnesota, was one of those selected for the conference under the chairmanship of M. M. Proffitt, Specialist in Industrial Education in the U. S. Office of Education. It is a probability that a report on Vocational Education will be issued soon.

Dr. Fred Engelhardt of the College of Education, University of Minnesota, spoke at a public meeting on public school support at Wells, Minnesota, October 23rd.

MINNESOTA CHATS

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T. E. Steward, Editor, 217 Administration Building
University of Minnesota, Minneapolis

(Continued from Page 1, Column 1)

But yielded, with shame and
griefe adawed,
That of a weede he was ouer-
crawed.

IT CHAUNCED after upon a day,
The husbandmans selfe to come
that way,
Of customs for to furueuw his
ground,
And his trees of state in compasse
round.
Him when the spitefull Breere had
espied,
Causelesse complained, and lowdly
cried
Unto his Lord, stirring up sterne
strife:
O my liege Lord, the God of my
life,
Pleaseth you ponder your suppli-
ants plaint,
Caused of wrong and cruel con-
straint,
Which I your poore Vassall dayly
endure:
And/but your goodnesse the same
recure,
Am like for desperate dole to die,
Through felonous force of mine
emie.

Greatly aghast with this pite-
ous plea,
Him rested the good-man on the
lea
And bad the breere in his plaint
proceede.
With painted wordes the gan this
proude weede,
(As most usen ambitious folke:)
His coloured crime with craft to
cloke.

Ah my soveraigne, Lorde of
Creatures all,
Thou placer of plants both humble
and tall,
Was not I planted of thine owne
hand,
To be the Primrose of all thy land.
With flowring blossoms to furnish
the prime,
and Skarlit berries in Sommer
time?
How falles it then, that this faded
Oake,
Whose bodie is sere, whose
braunches broke,
Whose naked armes stretch unto
the fire,
Unto such tyrannie doth aspire?
Hindering with his shade my love-
ly light,
And robbing me of the sweete
sunnes sight?

So beate his olde boughes my
tender side,
That oft the blood springeth from
wounds wide:
Untimely my flowres forced to
fall,
That bene the honour of your
Coronall.
And oft he lets his canker wormes
light
Upon my branches to worke me
more spight:
And of his hoarie lockes downe
doth cast
Wherewith my fresh Florets bene
defast.
For this and many more such out-
rage,
Craving your goodly head to as-
swage
The rancorous rigour of his might.
Nought aske I, but onely to hold
my right:
Submitting me to your good suf-
ferance,
And praying to be guarded from
greevance.

TO THIS, this Oake cast him to
replie
Well as he couth: but hisemie
Had kindled such coles of dis-
pleasure,
That the good-man noulde stay his
leasure,
But home him hasted with furious
heate,
Encresing his wrath with many a
threat.
His harmefull Hatchet he hent in
hand,
(Alas that it so readie should
stand)
And to the field alone he speed-
eth.
(Aye little help to harm there
needeth)
Anger nould let him speake to the
tree,

Enaunter his rage mought cooled
bee:
But to the roote bent his sturdie
stroake,
And made many wounds in the
waste Oake.
The axes edge did oft turne
again,
As halfe unwilling to cut the
graine:
Seemed the senselesse iron did
feare.
Or to wrong holy eld did forbear.
For it had bene an auncient tree,
Sacred with many a mysterie.
And often crosst with the priests,
too,
And often hallowed with holy wa-
ter dewe.
But nought mought they quitten
him from decay:
For fiercely the good man at him
did lay.
The blocke oft groned under the
blow,
And sighed to see his neare ouer-
throw.
In fine the steele had pierced his
pith,
Tho downe to the earth he fell
forthwith:
His wonderous weight made the
ground to quake
Th' earth shrunke under him, and
seemed to shake.
There lieth the Oake, pitied of
none.

Now stands the Breere like a
Lord alone,
Puffed up with pride and vaine
pleasance:
But all this glee had no continu-
ance.
For eftsoones Winter gan to ap-
proch
The blustering Boreas did encroch,
And beat upon the solitaire Breere:
And now no succour was seene
him neere.
Now gan he repent his pride too
late,
For naked left and disconsolate,
The byting frost nipt his stalke
dead,
The watrie wet weighed down his
head,
And heaped snow burdened him so
sore,
That/now upright he can stand no
more:
And being downe is trod in the
durt,
Of cattell, and brouzed, and sorely
hurt.
Such was the end of this ambitious
Breere,
For scorning Eld.

* * *
Now I pray thee, Shepheard, tell it not
forth:
Here is a long tale, and little worth.
So long have I listened to thy speech,
That graffed to the ground is my
breech:
My heart blood is well nigh frome I
jeele,
And my galage² grown jaste to my
heelee,
But little ease of thy lewde tale I
tasted,
Hie thee home shepheard, the day is
nigh wasted.

Editor's note: This tale of the Oake
and the Breere, he telleth as learned of
Chaucer, but it is cleane in another
kind, and rather like to Aesops fables.
It is verie excellent for pleasant descrip-
tions, being altogether a certaine Icon
or Hypotyposis¹ of disdainfull yonkers.

¹Galage: Soft, pointed shoe (galosh).
²Here the poet swallowed his gum.

New Radio Program Planned by Paulu

Radio listeners who have dif-
ficulty in listening out what is to be
broadcast will be served by a new
weekly program that is to be given
over WLB, the University of Min-
nesota station. Burton Paulu, pro-
gram director, has begun a series
entitled, "What's on the Air?" In
this he will describe for radio au-
diences the programs they will
have a chance to hear over many
stations during the week ahead.
The most notable programs will
be mentioned by Mr. Paulu. He
will broadcast his program each
Wednesday, at 1 p. m., on 1250
kilocycles.

Plants and Man as Seen by a Biochemist

This lecture, by Ross Aiken Gortner, Professor of Agricultural Biochemistry in the University of Minnesota, was one in a series being given over WCCO under the auspices of the Minnesota section, American Chemical Society.



Dr. R. A. Gortner

Today I am speaking as a bio-
chemist—as a chemist whose work
it is to study the chemical phenom-
ena which are characteristic of
living organisms. We do not know
what life is, perhaps we shall never
be able to explain life in its en-
tirety. But we do know something
of certain of the more important
chemical reactions which take
place in living organisms. I have
chosen to speak of "Plants and
Man" because I have become con-
vinced that, in many respects,
plant chemistry presents a great-
er complexity of chemical reac-
tions than does animal chemistry.
Plants could exist, and probably
did once exist, without animals or
man. Animals and man could not
exist without plants.

In the scheme of nature plants
apparently have two functions.
The more important function from
our standpoint is their ability to
transform the light energy which
is radiated from the sun into a
fixed form which is held in the
plant cells and thus make this sun-
light energy available to succeed-
ing generations of plants unless
man or other animals rob the
storehouse and appropriate to
their own use the stores which the
plants have accumulated.

We welcome the first appear-
ance of green in the grass and on
the trees as a sign that winter is
past. The verdant landscapes have
been painted by artists and
praised by poets. But the chemist
sees in this green color more than
the artist's picture or a poet's
song. The chemist sees that nature
is again starting the greatest of
all chemical factories, one that
manufactures products which are
essential for the maintenance of
life upon the earth.

This green pigment in the leaf
cells of plants we call "chloro-
phyll." Through some as yet not
wholly understood reaction, chloro-
phyll, in the presence of sun-
light, causes water to combine
with carbonic acid gas to form
sugar. The chlorophyll does not
appear to be appreciably altered
by this reaction but remains es-
sentially unchanged in the leaf
cells and continues, day after day
throughout the season, to bring
about the combination of water
with carbon dioxide.

Plants Store Sun's Energy

When we burn sugar heat is
evolved. Just as much heat, in the
form of radiation from the sun,
must be fixed in the sugar,
through the agency of the green
chlorophyll, as is later liberated
when the sugar is burned. There-
fore we have here, in the green
leaf cells, a mechanism for stor-
ing up of the sun's energy in a
form which may be kept almost
indefinitely. This is the most im-
portant chemical reaction known
to man. The biochemist calls it
"photosynthesis," the formation
of chemical compounds, through
the agency of chlorophyll and
light.

The second most important bio-
chemical reaction is exactly the
reverse of the first. A living or-
ganism takes these compounds
which the plant has built up by
photosynthesis and tears them
down again to produce water, car-
bonic acid gas, and energy. The
same sort of a process of tearing
down goes on inside of the body
cells that goes on when sugar is
burned in a flame, excepting that
in general the living organisms are
able to so regulate the rate of
burning that the heat which is
evolved is the energy which they
use in their life processes.

The plant both builds up chemi-
cal compounds with a high ener-
gy content through photosynthe-
sis and later tears down a part
of them again to provide energy
for its own life process. Animals
do only the tearing down, and
are dependent on plant sources
for their energy supply. The
animal may be likened to a flash-
light, the bulb of which functions
only because a source of electric
energy has been stored in a "dry
cell" produced in another factory.
When the dry cell is exhausted the
light no longer burns. If sources
of energy provided by the plant
kingdom should fail, the animal
kingdom would perish from the
earth.

I have said that the most im-

seeds of cereal grains to nourish
the young plant as it begins its
growth has been utilized by man
for untold ages as a source of en-
ergy for himself and his domestic
animals. Man has taken certain
wild grasses and through selection
and, lately, intelligent plant
breeding, has made them provide
him an abundance of high-energy
containing food.

Cereal Growing Older Than History

The cultivation of the cereals
by man for a food supply ante-
dates written history. Not so with
the sugar-producing plants—the
sugar cane and the sugar beet.
Here in the sugar beet we have
the record of the triumph of the
chemist and the plant breeder. The
sugar beet as a possible source of
sugar dates only from the Na-
poleonic wars. England was mas-
ter of the seas and her blockade
cut off the sugar supply of
France. Napoleon offered a large
sum as a prize for a source of
sugar which could be grown in
France, and encouraged experi-
ments with the sugar beet. The
sugar beet at that time was only
a slightly sweet root containing
about seven per cent of sugar.
The suggestion that it be utilized
as a sugar source provoked ridi-
cule. An old cartoon of the time
shows Napoleon's son, the infant
Prince of Rome, using a sugar
beet as a pacifier with the cap-
tain "Suck, baby, suck—your dad-
dy says it's sweet." But from that
lowly seven per cent of sugar in
the original sugar beet, the chem-
ists and the plant breeders work-
ing together have evolved a type of
sugar beet which may contain un-
der favorable conditions as much
as 24 per cent of sugar, and which
has now become an important
source of the world's sugar sup-
ply.

A small fraction of the prod-
ucts which the plant forms by pho-
tosynthesis are eventually trans-
formed by the plant into those
substances which we call vitamins.
These vitamins are generally pres-
ent in extremely small amounts,
but the traces which are present
appear to be of the utmost impor-
tance in maintaining life among
the animals. If one or more of
these vitamins is absent from the
diet serious nutritional distur-
bances, specific disease and even-
tual death of the animal is likely
to ensue.

Our present knowledge indi-
cates that all of the known vita-
mins necessary for the well be-
ing of man are of plant origin.

Vitamin A is derived from a
yellow pigment, carotene, found
in the green leaves of plants, in
carrots and other yellow colored
roots, in the natural yellow color-
ing matter of butter, etc. In the
animal body this yellow pigment is
transformed into the colorless
vitamin A which is essential for
the maintenance of life.

The old vitamin B fraction is
probably composed of a mixture
of several vitamins. These again
must be obtained by man from
plant sources. Serious nerve dis-
orders develop if at least one of
the components of the vitamin B
fraction is absent.

The absence of vitamin C causes
scurvy to develop. The teeth be-
come loosened and fall out, the
gums bleed and the individual
eventually dies. Scurvy was the
dread of the whalers and the arctic
explorers of a generation ago.
We now know that it may be
prevented and cured by a sup-
ply of fresh vegetable foods.

And so one might continue with
a list of the other known vita-
mins pointing out that they origi-
nate almost without exception in
the cells of plants. As yet we have
no knowledge as to what function
they may serve in the plant cells
but we do know that man is al-
most wholly dependent upon plant
sources for his vitamin supply.

I have said that carbon dioxide
and water in the plant cells in
the presence of chlorophyll and
sunlight are fixed in the form of
sugars. All of the carbon in coal,
all of the carbon in oil, all of the
carbon in peat, all of the carbon
in plants and in animals and in
our own bodies has been obtained
either directly or indirectly from
this basic reaction of photosynthe-
sis which takes place in the leaves
of the green plants.

"The Emergency Nursery School
as an Opportunity" was the sub-
ject of an address delivered be-
fore the Emergency Nursery Edu-
cation Section of the M. E. A. by
Josephine C. Foster, University of
Minnesota, on November 2nd.

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Would Cut Down Government Units By Nine - Tenths

Study by William Anderson Says United States Now Has 175,418

WEAK IN MANY PLACES

Range in Size, Type and Efficiency Makes System Hard to Gauge

What is called the first accurate report on the number of governmental units in the United States has been compiled by Professor William Anderson, head of the department of political science in the University of Minnesota. Published by the Public Administration Service of Chicago, it has attracted nation-wide attention, as have Professor Anderson's conclusions, urging a drastic reduction in governmental units by consolidation and elimination.

A unit in the sense in which he has used it is one that has autonomy, insofar as local units within a state may be called autonomous, and which has the power to raise revenue by taxation, by special assessment, or by fixing rates for service rendered. Thus a highway department or a conservation commission, both dependent on other bodies for income, would not be a local governmental unit, whereas a township or village is one.

Counting the nation as one and the states as 48, together with the counties, which number 3,053, Dr. Anderson found that there were 175,418 governmental units in the United States. Of these 16,366 were incorporated places, such as cities and villages, 20,262 were townships, 127,108 were school districts, and 8,580 were units which have miscellaneous functions.

Contain Fascinating Material

On almost every page of Dr. Anderson's fascinating pamphlet there are stories that should be retold, both of a feature nature and serious statistical statements. It would be a mine for the artist of a "Believe It or Not" series. It shows, for example, that the largest county in the country, San Bernardino county, California, is larger than any New England state except Maine and larger than the combined areas of New Jersey, Delaware and Maryland. The smallest is Arlington county, Virginia, covering 25 square miles. But there are also areas in Virginia called counties but not actually performing the functions of a county, that are still smaller. Clifton Forge, Hampton, Williamsburg and Fredericksburg cover but one square mile each. Yellowstone Park, says this writer, is the only area in the country that is not in some county, its 3,260 square miles being a special jurisdiction. All the other federal lands are in some county, at least with respect to some of the county's functions.

In what he calls "a rationalized scheme of local government units for the United States," Dr. Anderson proposes a new plan which would reduce the total number to 17,850, or about one-tenth of the present number. These would be divided into, of course, the present states, and into 350 city-counties, each having a central city of at least 25,000 population; 2,000 counties; 15,000 incorporated places, including the larger towns in New England, where the term "town" has a special significance, and about 500 miscellaneous units.

"The relative importance of the different proposed units would be about as follows," says the report. "The 350 city-counties would include about 45 percent of the total population and more than that percent of the wealth. The other 2,000 counties, including incorporated places within their limits, would have the remaining 55 percent of the population. This would be subdivided thus: The incorporated places other than city-counties would embrace about twenty percent of the population, and this

A Winter View of the Auditorium at Minnesota



This somewhat unusual view of Northrop Memorial Auditorium was taken from the roof of the nearby Physics building.

Physicist's Machine Records Sun's Radiations and Shining Periods

Equipment Developed by L. F. Miller Called More Accurate Than That Now Used

More accurate records of the percentage of sunshine on any given day, useful both for the United States weather bureau and for other scientific purposes, will be possible through use of a new instrument to record radiated heat from the sun recently completely developed by Professor L. F. Miller, University of Minnesota physicist. Dr. Miller's recorder warms faster than do present instruments when a few rays of the sun filter through the clouds and cools faster when radiation is shut off. These, among other factors, make it give a more complete and accurate record.

Weather bureau reports that certain days have 100 percent sunshine and other days no sunshine at all are both probably wrong, Dr. Miller believes. His recorder shows that on days reported as having no sunshine there was from 0.46 of one percent up to as high as 15 percent and more of sunshine. On three days recorded by the weather bureau as showing 100 percent sunshine, his instrument reported 79.4 percent, 76.5 percent, and 86 percent.

Dr. Miller will endeavor to study the effects on the sun's radiated heat of sunspots and he also will be able to determine how much loss of radiation takes place at times of eclipse. One of his interesting charts shows that the heat radiated by the sun was approximately uniform on two days when the outside temperatures were as different as three degrees below zero and 33 degrees above zero. He expects by means of his instrument to be able to set up a standard for "days of full sunshine," the new standard being necessarily less than 100 percent.

The instrument is inclined toward the sun at such an angle that it need not be moved as the sun swings from east to west, and is equipped to receive and measure every bit of sunshine that falls upon it. It includes also, a photographic recorder that draws the chart of variations.

The instrument that is kept outdoors, at a point where the sun

strikes it throughout the day, consists of two bulbs connected by a thermocouple. The filament in one bulb is bare, that in the other passing through a metal ball that has been blackened with lamp black. This is a quartz bulb, admitting rays of every type. The bulb with the blackened surface absorbs all the rays that strike it and warms rapidly, the difference in temperature setting up a current between the two that is recorded by a sensitive galvanometer in a box inside the building. This galvanometer governs a light beam, which by photographic means traces a record of fluctuations on a sheet of photostatic paper.

One can tell exactly what kind of a day it was when any given record was taken by looking at the sheet from the recorder. A day with cirrus clouds makes one type of record, because the sun continually breaks through for short intervals. A day with clouds of the nimbus type makes another sort of recognizable record.

Professor Miller is especially interested in the minor fluctuations of the line recorded by his machine. It is given a fuzzy appearance by constant small variations but also gets a sinuous contour that is apparently unrelated to the presence or absence of obscuring clouds. He believes this change in the graph may be due either to conditions in the stratosphere or actually to minor fluctuations in the amount of heat given off by the sun itself.

"If I were able to establish a series of observation stations on the same parallel of longitude, say in Chile, Florida, and in Washington, and this sinuous effect was still evident, I should know that it was due to a condition of the sun, for it is unlikely that the stratosphere would be the same at places so widely separated," he said. "Knowledge that there was such a fluctuation in the heat given off by the sun would be a point of departure for many interesting researches."

He also plans to develop a type of bulb that would give a control to those who are sunbathing or using the sun's rays for therapeutic purposes. Use of the recorder would show the strength of the natural light.

Sigma Xi Plans Public Lectures On Science Topics

To Deal With "Natural Heritage and Public Welfare"

BOSS HEADS GROUP New Series Expected to Repeat Drawing Power of Previous Talks

The annual series of popular scientific lectures given in Northrop Auditorium on the University of Minnesota campus by Sigma Xi, honorary scientific society, will have as its general theme this year, "Our natural heritage in relation to public welfare." Four lectures will be given, beginning January 25 and continuing through February 15, it was announced today by Professor Andrew Boss, vice-director of the Agricultural Experiment Station. Dr. Boss is president of Sigma Xi this year.

The four speakers and their topics will be as follows:

January 25: "The relation of human activities to depletion of our water resources," by Dr. George A. Thiel, department of geology, Arts college.

February 1: "Forests and human welfare," by Dr. Henry Schmitz, head of the division of Forestry, College of Agriculture, Forestry and Home Economics.

February 8: "The soils," by Dr. F. J. Alway, head of the division of soils, College of Agriculture, Forestry and Home Economics.

February 15: "People as a factor in our natural heritage," by Dr. Richard E. Scammon, dean of the medical sciences.

The Minnesota series of scientific lectures has the reputation of being one of the best attended enterprises of its kind according to Dr. Henry Hartig of the department of electrical engineering, secretary of Sigma Xi. Officers of such organizations as the American Association for the Advancement of Science have inquired about the series and the wide interest it arouses. These lectures have been given each year on the present scale since Northrop Auditorium was completed. No charge is made. The talks probably will be broadcast over WLB, the university station.

Regents Announce Budget Request Of Legislature

Believe Appropriations Should Be Restored to Level of 1931-'33

LOWEST IN 14 YEARS

With Maintenance Restored Income Would Still Be Well Down

Because costs of operation are mounting steadily with a rising price level which is also carrying upwards the prices of all supplies and equipment, and because student enrollment has increased this year to a point that brings it back almost to the pre-depression peak, the University of Minnesota is asking the legislature to restore the maintenance appropriation figures of 1931-'33. In that biennium the annual appropriation was \$3,275,000, which was reduced for 1934-'35 to \$2,800,000. Total income from the state now is less than it was in 1921, fourteen years ago.

Two new buildings also are proposed, but are to be brought into the picture only in case the legislature changes its policy of two years ago and again considers doing some institutional construction.

Although income from the 23/100 mill tax has declined sharply with contraction of the tax base, no offsetting appropriation is asked on that account.

Should the university have returned to it the \$475,000 of maintenance for which it asks its funds would still be well below those of '31-'33, for two reasons. One is that in the biennium '31-'33 it accumulated a surplus of \$200,000 which the legislature permitted it to keep and use, at the rate of \$100,000 a year in the past biennium. This is now used up. The other is that the total loss of income from all sources is about twice as great as the amount the legislature is now asked to restore, the figure being \$803,069.

The board of regents asks the legislature again to consider the pressing needs of two departments for new buildings, namely, the School of Business Administration and the School of Forestry. Both have large enrollments, forestry having registered last fall the largest freshman class in its history, and business enrollment rising sharply.

Would Increase Special Funds

The university also asks that some of the appropriations for specially designated purposes, particularly county agents and agricultural extension, be restored, and it suggests appropriations for three additional special activities.

New special activities for which support is requested are experimentation with cast iron pavements, support of the Institute of Child Welfare, and creation of a School of Social Welfare. The pavement experiment has been begun in a small way. Money from the Spelman Fund on which the Institute of Child Welfare has been run since 1925 are about exhausted, and President Coffman believes the work is so valuable that the state should continue it. The years of depression, he says, also have shown the pressing need for training social workers, of whom a rather small proportion now have professional training.

Tax Rise Not Because of 'U'

"Registration of students has increased approximately 58.3 percent since 1921," the report says. "Yet appropriations for the maintenance of the university are today \$337,000 less than they were in 1921. In the last eighteen years there has been a marked increase in the cost per pupil for all children enrolled in the public schools of the state, whereas for the students of the university there has been a decrease of 24.7 percent per student. If there has been an increase in taxation for the state government, it cannot be claimed

(Continued on page 2, column 1)

(Continued on page 2, column 4)

Regents Announce Budget Request Of Legislature

(Continued from page 1, column 5) that the university is responsible for it."

It is pointed out that direct appropriations for the university were \$1,059,000 less for the biennium now closing than they had been for the two years before.

"It seems needless to say," the statement goes on, "that the university will co-operate with the state in any program that may be necessary to maintain financial security and integrity in this state. At the same time, the university respectfully calls attention to the fact that the youth of this generation pass this way only once; they have but one opportunity, just one chance to qualify and equip themselves for the consideration of the problems of their day. Those nations which will emerge most quickly and most securely from the present disaster are those which do not count their gains only in a material way. Rather, true recovery will be for those which lay enduring foundations on which the things of the mind and the spirit are built."

Table Shows Requests

The following table shows university appropriations as of 1931, as of 1933, following the legislative reductions of that session, and the sums asked for the biennium that will begin July 1, 1935:

The cost of the buildings requested would be \$400,000 for the School of Business Administration and \$250,000 for the forestry building. This would add \$650,000 of building funds to the cost of the first year of the biennium, compared with \$661,500 that was spent on buildings in the biennium 1931-'33. Two years ago the university voluntarily relinquished the annual building appropriation of \$300,000 a year that had been voted in 1929.

Adult Education Proposed

Although it is not included in the tabulated budget requests, a building for the continuing education of graduates and for use as a center of adult education is described in the report as desirable. With such a building, says President Coffman, "a state university would be in a position to undertake something quite significant and genuinely worth-while in providing education for various adult groups." He then repeats the desire expressed in his biennial report that a center be created to which members of various professions, including physicians, lawyers, teachers, and clergymen, might be brought for brief and intensive courses of lectures by which they would become posted on the latest developments in their own professions and in world movements and world thought. This, he says, "would lead to the spread of new information and new scientific developments and would improve the quality of professional service received by the people of Minnesota."

Of the present School of Business Administration building the report says, "There are thirty-seven teachers and seven classrooms," and again, "There are only fourteen offices in which to house 37 instructors." Of the forestry building, it says:

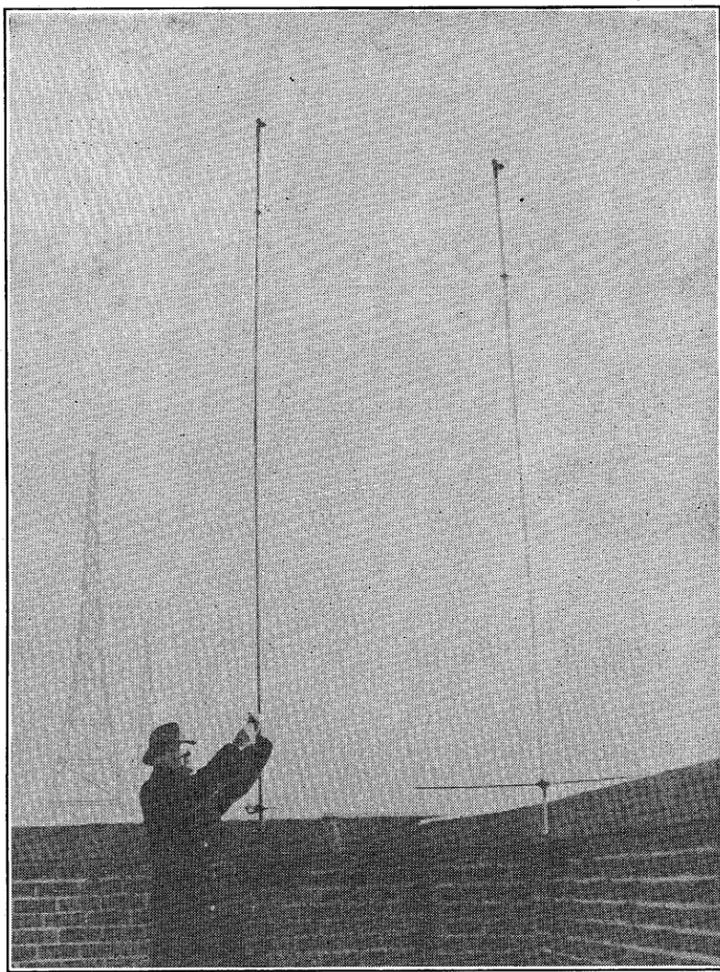
"The future progress made in the solution of the forestry problem of Minnesota will be determined in large measure by the attention given to forestry by the university, and by the social vision and technical training of our forestry graduates. A building for forest education—will help attract some of the ablest young manhood of the state into a field of public service, and thus contribute directly and indirectly to the solution of one of our major economic and social problems."

Urges Child Welfare Institute

That the Institute of Child Welfare is one of the few organizations of its kind, and that it has contributed enormously to knowledge of childhood, child development, physical and mental, and sensible management of childhood's problems, are facts pointed out with respect to the request for the state to undertake the financing of that venture. Nearly three-quarters of a million dollars have been spent on it by the Spelman Fund since it was begun in 1925.

"If the needs of the coming generation are to be met, basic research in human development is necessary in order to secure the scientific knowledge that will lead to a better program of home training for both normal and

Bulbs Record Radiations of Sun



Professor L. F. Miller is shown here with the outdoors part of the equipment he has developed to record accurately the daily hours of sunshine and the radiations of the sun. A description appears on page 1.

Appropriation Per Year for University

	Was '31	Is—'33-'35	Asked—'35-'37
Maintenance	\$3,275,000	\$2,800,000	\$3,275,000
23/100 mill tax*	416,327	319,941	300,000*
Total	\$3,691,327	\$3,119,941	\$3,575,000
*Mill tax is recurrent, not voted.			
Special Appropriations—			
Agricultural Extension	50,000	25,000	45,000
County Agents	86,000	54,000	94,000
Soil Exper.	15,000	5,000	5,000
Soil Survey	8,000	8,000	8,000
Dairy Mfg.	4,000	2,000	5,000
Livestock San. Board..	15,000	15,000	15,000
do Bangs Disease work			7,500
Crop Breed. and Test.	4,000	2,500	4,000
Crookston (repairs)	25,000	10,000	
Manganese ore exper....	15,000	4,000	10,000
Low grade ore exper....	18,000	4,000	10,000
Range field work	7,000		
Medical Research	23,000	25,000	25,000
Iron Pavements			10,000
Inst. Child Welfare.....			5,000—20,000
Social Welfare Trng....			35,000
General Hospital			
(care of indigents)...	165,000	165,000	165,000
	437,000	\$319,000	\$443,000+

problem children," Dr. Coffman says of it.

Since July 1, 1933, the University of Minnesota has been operating on \$803,069 less per year than it had had before, although student enrollment has again increased sharply this year, it is pointed out. Fortunately, says the report, the federal government has not reduced its appropriations, and has made it possible for a large number of students to meet bare expenses through relief contributions. For the housing and board of these students the federal contribution in 1933-'34 was more than \$57,000, to which the state added \$28,190 of relief funds. None of this money, however, helps pay cost of instruction. It goes for maintenance of the students, while the institution has to instruct the 1,000 with the faculty it maintains on its reduced funds.

"We feel that we have already contracted, curtailed, and limited the effectiveness of the institution as far as we can without inviting the loss of morale, and defeat," Dr. Coffman states. "We do not now desire to expand, but we do desire to restore the line, in so far as it can be done, in the interest of public welfare and the leadership of tomorrow."

Relative to the university's finances, President Coffman made this statement in his annual report:

"The University of Minnesota suffered along with other universities during the past biennium. Its revenues declined \$803,069 during the year 1933-'34 under the year 1931-'32. It reduced salaries \$251,164; it eliminated or

Would Cut Down Government Units By Nine - Tenths

(Continued from page 1, column 1)

part of the people would be under two layers of government, namely, a county and an incorporated place. The other 35 percent of the people in the ordinary counties would be in strictly rural territory, and would have but one local government, the county.

"It will be noted that there would be normally about a single level or layer of local government for four-fifths of the people. The other one-fifth would have normally a two-layer system. Some special units, such as metropolitan districts, port districts and the like, would add another layer in a few places.

How the Changes Would Be Made

"To achieve the total reductions indicated in a complete reorganization of local units a few states would have to make very little if any change. The principal changes would have to come in the states from New York to Montana (where the vast number of townships and small cities are found), and south to Oklahoma, Kansas, Missouri and the states bordering on the north side of the Ohio river and the Mason and Dixon line. New England, the South, and the far West would have much less pruning and reorganizing to do.

"The difficulties involved in bringing about such sweeping changes in local government as are here suggested should not be forgotten. Forty-eight different constitutions would have to be amended and forty-eight legislatures be induced to act. It is not the purpose of this chapter to advocate such action, or to suggest ways and means. Its main purpose is to set a goal—a goal which will not appeal to all as worthy, and one which may never be reached."

"School of Self-Government"

Elsewhere Dr. Anderson points out that the traditional "school of self-government" supposed to exist in the American system is a poor school because so many units are so small and ineffectual that the training received by the office holder is very poor training indeed. Here he says:

"If local governments exist as a school for self-government, it is time that someone seriously considered a revision of the school organization and curriculum. What subjects are today worthy of a place in such a school? Anyone familiar with the matter would immediately say: Budget making, accounting, reporting, debt control, property assessment, financial management, personnel administration, city and regional planning, welfare and relief work, modern school administration, modern police administration, health protection, and many others. These are subjects which, if one learns them locally, will be valuable not only there but also in state and even national government. The very small local unit, the petty school district, the town or township, or the small village, is wholly incapable of teaching any of them. It is, in fact, a denial of the need of such studies, and it lacks a teacher. If it is a school at all it tends to be one alternately in parsimony and extravagance, but always in parochialism.

"In fine, the American school of self-government needs a new teacher and a new curriculum. The new teacher must be the specialist, the expert, who knows the modern principles of public administration. He can teach fairly large classes whether he is an expert employed in the public service, or a teacher in a university, or a worker in a governmental research bureau. With the shortening of the ballot, and the increase in the size of governmental agencies, fewer men will reach office by the elective process, and thus gain access to the classes conducted by the expert, but many will be employed following examination, and them the expert can teach while they are in the service. These men, elected officers and appointed employees, will be learning something worth while, and through them the voters also will receive the instruction they need.

"But this is possible only in large units. In other words, only the large unit offers that opportunity for specialization which makes it possible for local government to gain the advantages of modern knowledge and methods. If then, democracy takes care to keep open the roads from the hum-

Mayo Lecture Series Begins

Annual Medical Addresses by Foundation Men Scheduled

A series of eight Mayo Foundation lectures on medical subjects before the medical faculty and students of the Medical School at the University of Minnesota began January 12 when Dr. Harold E. Robertson spoke on "Pathogenesis and pathology of duodenal ulcer." The series of lectures will be given in Todd Amphitheater of the University of Minnesota Hospitals and will be open to all members of the medical profession as well as to university people.

Others in the series will be the following:

January 26th, Dr. Willis S. Lemon, "Clinical and experimental tuberculous pleurisy with effusion."

February 9th, Dr. T. B. Magath, "Amebiasis."

February 23d, Dr. Byrd R. Kirklín, "Roentgenologic study of the stomach after operation."

March 9th, Dr. Hiram E. Essex, "Insect and snake venoms."

March 21st, Dr. Gordon B. New, "Reconstructive surgery of the face and neck."

April 4th, Dr. Edgar V. Allen, "Peripheral vascular disease."

April 18th, Dr. Andrew B. Rivers, "Pain in peptic ulcer."

This is an annual group of lectures delivered by doctors from the Mayo clinic in Rochester.

bles homes to all the offices and employments of the government, by providing for the selection of ability wherever it appears, and by equalizing educational opportunities, all who need training for government service will surely get it, without any sacrifice of efficiency in administrative services. Given proper conditions and organization, both of which are possible, the large city with only a few elective officers, may be a far better school in self government than the petty school district, township, or village in a rural area.

Officers 'Under the Thumb'

"In a democracy the need to keep the government responsible to the voters is more or less axiomatic. A corollary of this proposition widely accepted in the United States of the Nineteenth century was that units of government should be small, so that all voters might know their offices intimately. The stress was not on competence in officials, but on having them 'of the people,' men just like their neighbors, and on having them under the thumb. To elect men living at some distance to manage one's local affairs seemed like inviting carpet-bag government, or turning one's purse over to a stranger. From this point of view the parish in England and the town or township in the United States were better than the county, and the little school district with the one-room, one-teacher school was even closer to the ideal.

"It need hardly be mentioned that this attitude was incompatible with the rising demand for more effective and more extensive services, or that in cities it rapidly became an absurd ideal. Police service, for example, by wards or precincts was obviously futile. The small-unit idea simply ran counter to the standards of administrative service which were rising with an improving standard of living. It was inconsistent, also, with the demand for state aid and other forms of central support.

"The attitude still persists, however, in most rural areas. Whatever one can say against it, the rural taxpayer can point out that the township and the petty school district are under thumb. When the depression became severe, and the demand for tax reduction most insistent, the township and the rural school district were most quickly responsive to pressure. Already underpaid rural school teachers were still further reduced, township roads were neglected, and poor relief was in many cases kept below a decent minimum. Villages and the smaller cities were not far behind in their reduction of services and taxes, whereas counties, the larger cities, and the states were most resistant to the axe of economy.

"Those who favor tax reduction should not argue that there are too many local units. To those who favor the maintenance and improvement of public services, the argument for larger and more competent units is very cogent."

Farmers Warned Not to Sow Weeds

This year, when seed grain is very scarce in some sections of the state, supplies must be brought in from elsewhere to meet the needs. Great care should be exercised in purchase of seed grain to avoid the spread of all weeds, but particularly field bindweed (creeping jenny), and leafy spurge, says A. C. Army, agronomist, University Farm, St. Paul.

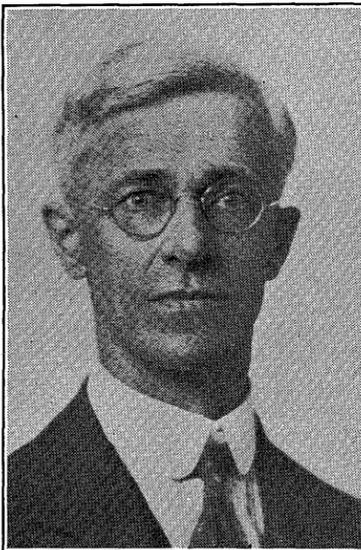
Both of these weeds have become fairly well established, particularly in the southwestern part of the state, although not limited to that section entirely, and it costs from \$20 to \$30 an acre to eradicate them.

Farmers in the drouth counties who truck seed out of the counties, who have a surplus of seed grain should be very careful to avoid buying seed coming from any farm infested with leafy spurge or field bindweed. Up to as high as 60 seeds of field bindweed per pound of grain have been found in grain taken from bins on farms in the areas infested with this weed. Leafy spurge seed has been found in the grain on all farms infested with this weed, that have been checked.

failed to fill positions costing \$342,407; it used \$132,000 of its reserve, in accordance with the program submitted to the legislature in 1933, and it reduced current allotments for supplies, expense, and equipment sufficiently to balance outgo with its reduced income."



Dean Richard E. Scammon



Professor F. J. Alway



Professor Andrew Boss



Professor George A. Thiel



Professor Henry Schmitz

Journalism Teacher Asks That Press See World Through More Liberal Eyes

K. E. Olson Speaks at Chicago as President of American Association

This is a time of critical evaluation in which our people are doing serious thinking about established institutions and social instrumentalities of the past. And not the least of the institutions they are evaluating is the press, said Kenneth E. Olson, professor of journalism at Minnesota, in his address at Chicago as president of the American Association of Teachers of Journalism.

"The newspaper has become a household necessity in this country. Our people have come to depend upon it for the news of the day, for instruction and entertainment, for interpretation of local, state, national, and world affairs. So completely has the newspaper become a part of our American life that few homes are without one. One of the stereotypes of the past generation was the concept of the newspaper as the palladium of our liberties, the guardian of our rights, the moulder and leader of public opinion.

"Today there is growing doubt among the great mass of our citizens whether the press is any longer a champion of their rights. There is a growing dissatisfaction with an agency that tries to lull them with comic strips, serial stories, movie gossip and advice to the lovelorn while they are desperately groping for the answers to these bewildering new questions that have come upon them.

"Our press in the last half century has been swept along with the economic currents of the machine era with its amazing technological advances, its mass production, its standardization, its mergers and consolidations. More and more capital has been needed for improved presses, linotypes, stereotyping equipment, bigger buildings, more expensive news and feature services. The newspaper has become the voice of an institution representing stockholders interested in profits. More and more, as it has demonstrated its effectiveness as an advertising medium, the newspaper has become the aide of business until today it is one of the foremost agencies in our American scheme of distribution. That much is all to the good, and as a teacher of newspaper advertising I glory in the ability of my medium to perform this function better than any other; but as a student of journalism I cannot help but realize the social significance of this development. As the newspaper has become more and more dependent upon advertising for its revenues it has become less and less dependent upon its readers and less concerned with their welfare.

Must Not Forget Readers

"To a certain extent, of course, it is still dependent upon readers, for they represent so much buying power to whom we can sell advertised products. But we have come to look upon them as mere 'sales prospects' with morose minds, to be kept interested with comic strips and other superficialities.

"Trust Companies, a periodical devoted to fiduciary interests, in its September issue published the results of a six months survey of editorial comment on banking institutions. This survey covered newspapers representing 81.2 per cent of the total daily newspaper circulation of the United States and serving 95.7 per cent of our

entire population. Editor Glen B. Winship in explaining his approach to this survey explained:

"As a general rule if a man is distinctly hostile toward banking institutions as a group you can safely classify him as a radical politically and socially; if he objects to hasty criticism of banking institutions and yet points out their shortcomings looking with favor on proposals of reform you can safely class him as a liberal in his political leanings; if he is an outspoken champion of banking institutions the chances are he is a conservative in his political alliances and is strongly opposed to socialistic tendencies."

"On that basis editorials were scored from 100 for those outstanding in defense of banking institutions as a group to 0 for editorials distinctly hostile.

"The average rating of all newspapers was 65.4 and charts accompanying the survey showed that 73.4 per cent of the total population of the United States is served by newspapers rated at more than 50, classed broadly as conservative, while only 22.3 per cent of the population is served by papers rated less than 50, classed broadly as radical.

"Our American people today are exceedingly critical of that large section of our American press which has not recognized the rebirth of democracy in this country. And that old cliché 'You can't believe anything you read in the newspapers' is being heard with increasing frequency. There is a danger that our newspapers may lose their influence with their readers unless they awake to the fact that their cherished freedom of the press carries with it certain very definite responsibilities and duties.

"No one is more jealous of this right of a free press than I. It is to my mind the keystone upon which our democratic institutions have been built. It is the last bulwark of defense against all onslaughts on the rights we, as Americans, hold most dear.

Theory of Press Freedom

"But that freedom is like a franchise granted a public utility. In return for its franchise a utility guarantees to provide its city continuous service at fair rates. In return for its freedom to print the truth without fear or prejudice our press accepts the responsibility of printing the news of the day—the food of public opinion—fairly and accurately, without suppressing or coloring that news, to protect or advance the interests of particular groups.

"One of the greatest compensations in our work as teachers is in seeing the young men and young women with whom we have had contact go out and help build better newspapers. If we can develop in the minds of these young people a greater social consciousness we shall have done something toward re-establishing the waning influence of the press for we shall have implanted in the minds of these coming editors and publishers the idea of a newspaper that shall always seek to promote the general welfare instead of merely protecting and advancing person, party or class interests.

Need Broad Type of Courses

"As a student I used to rail, in my youthful desire for brass tacks technical courses, against the impracticability of courses in the ethics of journalism, but I think today we have need of a new emphasis on the ethics of our pro-

Above are shown five of the men who will have a prominent part in this year's series of Sigma Xi lectures in Northrop Memorial Auditorium. A story on page 1 tells of the lecture subjects and the speakers. Left to right above are shown Dean Scammon, Dr. Alway, Professor Boss, president of Sigma Xi, Professor Thiel and Professor Schmitz. The general subject of the series is, "Our Natural Heritage in Relation to the Public Welfare." The lectures will be given on four Friday evenings beginning January 25th, while the Minneapolis Symphony Orchestra is away on tour.

Five Hundred Too Many by Two And Two Too Many

Five hundred people are five hundred; are people, are people, five hundred are.

Gertrude Stein would not speak at the University of Minnesota last quarter because she has refused to address any audience of more than 500, according to Dr. Malcolm Willey, university dean. Minnesota had an option on one of Miss Stein's American appearances, taken through a booking agency. Her price was high, however, and when a calculation was made of the cost per person of having her address 500 people it was decided not to engage her.

Too, too many; too many by two; five hundred two are too many.

Boss to Head FCA

Appointment of Andrew Boss, professor at University farm, as director at large of the St. Paul district of the Farm Credit administration, has been made. Mr. Boss is vice director of the agricultural experiment station at University farm and professor of agriculture and farm management. The St. Paul district embraces Minnesota, North Dakota, Wisconsin and Michigan. The administration includes the Federal Land bank, Federal Intermediate Credit bank, Bank for Co-operatives and Production Credit bank.

fession, on the functions of the press and the relationships between press and public opinion.

"In this difficult period of readjustment in our social, political and economic life it is more than ever important that our students be given a thorough understanding of the complex problems our American people are facing today. We are living in history-making days. It is not sufficient that our students learn the elements of political science, or economics or sociology, or the background of history. We need thorough courses in contemporary affairs, or editorial writing courses made practical, to correlate these background materials and focus them upon current problems.

"We are entering a day when we have need of a new kind of reporting and editing by mature, competent, well-educated reporters and correspondents with a sufficient background of knowledge to deal intelligently with the complex social and economic developments they must report. Events have moved swiftly in the past two years. There is a wider general interest than ever before in public affairs.

"And in these new needs that have arisen out of the social changes of the last few years lies a challenge both to the press and to us. There never was a day when it was more worth while teaching journalism."

Blakey Describes Sales Tax to U. S. Economists at Chicago

Emergencies May Force One But It Is a Poor Tax He Tells Them

Speaking before the American Economic Association at Chicago, Dr. Roy G. Blakey, professor of economics at the University of Minnesota, declared himself lukewarm with respect to the general sales tax and said he thought that income tax laws could be changed so as to provide adequate revenues and at the same time reach all class of citizens.

"I cannot wholeheartedly recommend general sales taxes unless political or other contingencies render such an alternative preferable to others that now seem bad," he said. "It is possible to conceive of income taxes with higher rates, lower exemptions, and sufficiently good administration to collect almost as much revenue from all income classes and do this more equitably than can be done with any general sales tax."

His discussion covered both the proposals for a federal sales tax and for sales taxes applied by individual states, seventeen of which now have them, most of the laws having been passed since 1932.

Retail Type Called Better

"If the tax is to be administered by the states, retail sales taxes are more feasible than manufacturers' sales taxes," he said, "though prime necessities should be exempted if possible. Generally speaking, a two or three percent rate appears more justifiable than much lower rates if the emergency is such as to require such taxation at all. Costs and difficulties of administration are usually much less than twice as great for a two percent sales tax than for one of half that amount. If an unduly high rate is necessary to carry on essential public services, a state may be forced to adopt a still more general base with lower rates despite the serious inequities and social consequences involved."

Dr. Blakey declared he was unwilling to concede that all real estate and other existing taxes should now be established on the basis of present incomes and values as if the present depression values would last forever.

"Past history should be remembered," he said, "and selfish interests should not be allowed to stamper us into giving them perpetual bonuses, though we should always take cognizance of significant economic and social changes and adapt our tax systems accordingly. For example, we probably should shift perceptibly from so much dependence upon property taxes and to more reliance upon income taxes. On the other hand, now might be a good time to think about bases for socially created taxable values in the future, particularly in our cities.

Shall We Try Panaceas?

"In times of prolonged depression like the present, when thousands of hard-pressed taxpayers and others have reached the stage of desperation, when they are willing to try anything, any patent medicine or panacea, then they are in a mood which makes them easy victims, not only of their own self deceptions but also of the alluring promises of others, always eager to find opportunities to shove their tax burden off their own shoulders regardless of those upon whom it may fall."

No recent American sales tax has survived a popular referendum, he said.

"Sales taxes," he said, "are less important in themselves than as symptoms of a distraught world and as warnings of more serious dangers. Advancing communications and transportation necessities ever closer and firmer world integration, despite any temporary explosions and reversals. The passing from pioneer to mature urban and state development spells the slow but inevitable doom of the loose financial methods of pioneer days.

"If the states and their local units turn from dependence upon property taxes to more dependence upon income, inheritance, sales or other taxes with very fluctuating bases, much more attention will have to be paid in the future to the building up and maintaining of reserves and to the paying off of debts in times of prosperity so that more borrowing will be possible in times of depression.

"Progress must be made in all jurisdictions, also, with respect to the reorganization of the units of government; with respect to the selection, training, and tenure of personnel; with respect to the coordination of federal, state and local functions, expenditures, taxes and debts. The states and their administrative units, as well as the federal government, have a long way to go yet before they reach reasonable standards."

Dr. Blakey said mention should be made of the role that can be played by certain types of sales taxes which can be collected monthly or daily in great volume during a period of rapidly rising prices, though it is said that control of inflation in France required the raising of income and other taxes as well as the employment of sales taxes.

Yield Bigger in Cities

Sales tax collections were shown to be much greater in thickly settled urban areas than in rural districts. For example, in Illinois, Cook county (Chicago) with 52.19 percent of the state's population produced 64.18 percent of sales tax revenue. Per capita collection for the state was \$4.80. Twenty-seven counties in which there was no city of over 2,500 people yielded \$2.18 per capita, while Cook county, which is 98 percent urban, had a per capita collection of \$5.19. In part this is because the farmer raises a greater proportion of the things he consumes, and so buys relatively less.

An advantage of the general sales tax is that it is rather easy to administer, the Minnesota economist said.

"The simplest sales taxes, with low rates, are probably easier to administer than the usual income and property taxes," he said, "if adequate supervision is provided. Generally speaking, in sales taxes, the most universal and the simplest are easiest of administration. Exemptions and exceptions made for the sake of equity commonly complicate administration and frequently increase evasion."

A Post-War Phenomenon

He called the rapid spread of general sales taxes one of the most striking developments of the post-war era in public finance, but, he said, rather than being a new tax, the sales tax is one that is very old but has been out of use for a great many years except in the case of what we call excise taxes, namely levies on special commodities, such as playing cards, tobacco, and perfumes.

MINNESOTA CHATS

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T. E. Steward, Editor, 217 Administration Building
University of Minnesota, Minneapolis

A READABLE REPORT

The editor of Minnesota Chats feels that it would scarcely be an exaggeration to say that Dr. William Anderson's report on, "The Units of Government in the United States" is the best statement of results from a scholarly research he has ever read. It meets to the full the three main requirements of good writing, which are that the material be interesting and worth while, that it be gathered fully and comprehended or organized completely, and that it be stated lucidly and interestingly.

Who would suppose that a research on units of government could be made to read like a novel? If Dr. Anderson fears that this statement will damage his professional standing as a political scientist, this reviewer will take the full blame, and, if necessary, deny that he ever said such a thing.

One would have supposed it would be difficult to take the complex melange of counties, townships, towns, cities and special governmental units in this country and make them sound interesting. In fact, one still supposes it difficult, but it has been done to the queen's taste, or perhaps, the alderman's distaste.

It may be that to those who know a great deal about such subjects the Anderson report seems less startling, but surely the purpose of studies like this is to let the rest of us in on the facts. Minnesota Chats recommends for the reading of every person who wants to know more about effective government, "The Units of Government in the United States," published by the Public Administration Service, Chicago, Ill.

CONCERNING AN IDEALIST

As Minnesota Chats was going to press word came of the death of Dr. Alfred Owre, who built up the College of Dentistry in the University of Minnesota and who for some years after 1927 was dean of dentistry in the Columbia Medical Center, New York. Less perhaps for the fact that he took the dental college at Minnesota to a position of acknowledged leadership in this country than for his lifelong battle for ideals and ethics in his profession will Dr. Owre be remembered. He was the sort of person who liked to take complete technical competence for granted, as a sine qua non, and then start from there to build up the individual and the professional group. This tells pretty much the whole story. Dean Owre will be mourned by a very great many people who worked with and under him and who saw that he had long since passed through the alphabet and was striving to transform "etc" into a new and more significant symbol in life.

Pamphlets Ready On Farm Outlook

Farm folks who want to get the best information available on the outlook for 1935 may obtain copies of University Farm pamphlet 35, just out. In addition to the outlook for agricultural prices, the pamphlet contains a most interesting section on the outlook for farm family living in 1935, prepared under the direction of Miss Julia O. Newton, state home demonstration leader, University Farm.

The agricultural section of the outlook statement has been prepared by representatives of the Department of Agriculture, University of Minnesota, following a conference with members of the U. S. Bureau of Agricultural Economics and the Agricultural Adjustment Administration. It deals with the general business and agricultural outlook, indicates important changes in the principal farm enterprises in Minnesota, and reflects probable tendencies in agriculture. It is intended to guide farmers in shaping their farm plans for 1935.

Anyone interested may have a copy of this pamphlet free from a county agent or from the Bulletin Office, University Farm, St. Paul.

Weekly Medical Broadcasts

Dr. William A. O'Brien, health broadcaster for the Minnesota State Medical Association will give four radio talks on health during January, New Year's day being excepted. The day of the broadcast has been changed from Wednesday to Tuesday, but the hour will remain as 10:30 a. m. On January 8 he will discuss insomnia; 15th, appendicitis; 22d, problems of the blind, and 29th, cancer research.

Bibliography of Special Plants

A bibliography, the compilation of which has been in progress for more than twenty years, is about to be issued by Dr. R. B. Harvey and his associates of the division of plant pathology and botany, University Farm, St. Paul. The bibliography is a compilation of references on "low temperature relations of plants." It contains more than 3,300 references and covers all known articles of value on the subject which have appeared in any language in any country in the last one hundred years. For the last five years most of the work on this bibliography has been devoted to the checking of citations by obtaining the original articles, translating when necessary and correcting the forms of citations. Assistance in the preparation of the work has been given by Dr. A. J. Pieters, principal agronomist of the Office of Forage Investigations, United States Department of Agriculture, and other members of the staff of that department; the Institute of Applied Botany, Leningrad, Russia; Cambridge University, England; Dr. E. Schaffnit and Dr. Hans Fitting of the Institut für Pflanzenkrankheiten, University at Bonn, Germany; Dr. N. A. Maximov, Leningrad; F. R. Gevorkiantz and Mrs. E. Wilde of the Lake States Forest Experiment Station, St. Paul, Minn., and the many students who have worked on this problem at the University of Minnesota. The work is expected to be ready for distribution late this fall or in the early winter.

The Elementary Teachers Section at the Minnesota Educational Association was addressed by Dr. Josephine Foster, College of Education, University of Minnesota, on the subject "The Kindergarten Point of View."

Chemical Research and Its Industrial Importance

A lecture by Professor Lloyd H. Reyerson in the series that is being given over WCCO by members of the Minnesota Chapter of the American Chemical Society.

CHEMISTRY as we understand it today, may be said to have had its beginnings at the time this country started its career as an independent nation. Oxygen was first isolated as a chemical element in 1774 by the Englishman Priestley and independently by the Swedish apothecary Scheele. Because of the incorrect beliefs of these two men concerning the nature of combustion, they were unable to reap the rewards of their revolutionary discovery.

At about this same time the French chemist, Lavoisier, proved that the products of combustion were heavier than the substances before combustion. He also showed that a portion of the air, equal to the increase in weight, had been absorbed from the surrounding atmosphere. Learning of Priestley's discovery, Lavoisier immediately recognized its importance in the theory of combustion. Twelve years of intensive experimental work followed until finally Lavoisier boldly proposed a theory of combustion, explaining the phenomenon as being due to combination with oxygen. This theory, which we at present still believe to be the correct one, was based on quantitative measurements instead of speculation as had been the theories preceding it. When finally accepted, its results were far reaching and chemists in many lands sought to find new elementary substances and study their behavior in a quantitative way.

For more than seventy-five years following the discovery of oxygen, chemists were busy with the discovery of new elements and the study of the chemical behavior of the already discovered elements and their compounds. This period was not marked by any great industrial development based on these discoveries. It should rather be considered as the time during which the ground was being prepared for the remarkable growth and harvest which was to follow. Industry had not yet awakened to the realization of the value of chemistry to its well being. However, the researches of Davy, Berzelius, Wohler, Liebig, Faraday, Pasteur, Kekule and others developed chemistry to a point where succeeding generations of chemists could build with confidence.

Found Chemical Dyes

In 1856 the young Englishman Perkin, while working in the laboratory of Professor Hofmann in London, accidentally found, among the oxidation products of aniline, a compound which had the property of imparting color to fabrics. It was the first synthetic dyestuff and was named mauve. Within a year a small industry was established to make this dye. Up to that time dyes had been obtained almost exclusively from natural products or cultivated crops. Large areas of land had been devoted to the cultivation of plants which would yield dyestuffs. From the discovery of Perkin down to the present we have seen a continual displacement of natural dyes by the products of the laboratory. Not only are these cheaper but in most cases they are superior to the natural product. One example from many will suffice to make this clear. In 1878 von Vaeyer succeeded in making indigo in the laboratory. A rapidly growing chemical industry in Germany then stepped in and spent millions of dollars before a pound of the product was produced on a commercial scale. In 1897 synthetic indigo was first placed on the market. At this time, about 1,600,000 acres of land were devoted to indigo cultivation and the product had a value of about \$20,000,000. In 1913 synthetic indigo production had risen to 13 million pounds and it was selling at about half of the price of the natural product. Meanwhile the area devoted to indigo cultivation had fallen to 200,000 acres. Today the world demands more than seventy-five million pounds of 20 percent indigo paste and the price is considerably less than half of what it was when the product of the laboratory first came on the market.

These early discoveries of synthetic dyes laid the basis for an ever expanding chemical industry in this field. As in the case of indigo a long time usually elapsed between the successful laboratory experiment and the achievement of commercial production. The dye industry soon recognized the

importance of research, and large laboratories manned by excellent investigators began to bring out many new and varied dyes. Today, hundreds of dyes, which were literally unknown at the beginning of this century, are on the market and the industries bringing them out are absolutely dependent upon the research laboratory for their very existence.

Then Silk from Cellulose

The second really great achievement of the organic chemist was probably the introduction of a synthetic silk-like fiber made from cellulose. First prepared in the laboratory in 1889 it was not until 1905 that artificial silk, commonly called rayon, was made available to the public.

In 1909 Dr. Leo Baekeland brought about the condensation of formaldehyde and phenol or carbolic acid. This product, known as Bakelite, was the first of a number of synthetic resins to be discovered in chemical laboratories. Within a year it was being manufactured in a small commercial plant. By 1931 more than 34 million pounds of all classes of synthetic plastics were produced in the United States alone. These resins or plastics have made important contributions to the development of the automobile of today and in some instances have completely revolutionized established industries.

Less than fifty years ago Sir William Crookes, the famous English physicist, predicted that famine would be the lot of man before many generations had passed unless new sources of fertilizer could be found. The chemists accepted the challenge. During the decade preceding 1913, Fritz Haber and his co-workers in Germany attacked the problem of obtaining nitrogen fertilizer from the air, first in the laboratory and later on a plant scale. Making use of tremendous financial and scientific assistance the problem was successfully solved and the first synthetic ammonia was prepared on a commercial scale at Oppau in Germany during September, 1913. Industrial expansion based on these researches has indeed been rapid.

Search for Catalytic Agents

The method of fixing nitrogen as ammonia requires that nitrogen and hydrogen be brought together under extremely high pressures in the presence of catalytic agents. The demand for high pressure equipment stimulated researches looking to the production of strong metals in the form of alloys. Engineers were called upon to design the new types of apparatus needed in this rapidly developing field of industrial chemistry. The success achieved by the use of catalysts in the fixation of nitrogen and similar chemical processes led chemists, the world over, to seek for new and improved catalytic agents to be used in new as well as old chemical operations. Thus this one discovery has modified a great many operations and caused a great deal of existing equipment to become obsolete.

Other nations soon recognized the importance of the fixation of the nitrogen of the air. In peace time the compounds which may be made from nitrogen find their principal outlet as fertilizers. Crop fields are thus maintained or increased. In war time this fixed nitrogen becomes the country's source of nitric acid which is absolutely essential for the making of explosives. Only by producing their own nitric acid from the synthetic ammonia of the Haber process, were the Central powers able to fight as long as they did in the World War. The first plant in Germany produced about 7,000 tons of fixed nitrogen during the year. Because of war demands this plant increased its capacity nearly ten fold. Another plant was built at Leuna in Germany during 1917. By 1928 German production exceeded 400,000 tons of fixed nitrogen annually. This is more than the equivalent of nitrogen in the total annual export of sodium nitrate from Chile.

Closely parallel to the development of synthetic nitrogen products has been the progress in the hydrogenation of carbon compounds. Paul Sabatier and his co-workers in France discovered many catalysts as well as methods for adding hydrogen to unsaturated carbon compounds. The hydrogenation of oil to produce solid fats is one example of a large scale industrial application of these chemical discoveries. However, this was only a beginning. In 1921 Georges Patart

learned how to add hydrogen to carbon monoxide, thereby producing methanol, commonly called wood alcohol. The process involves high pressures and specific catalysts for its commercial success. Experience in the fixation of nitrogen was invaluable in putting this process on an industrial scale. In fact much of the synthetic methanol at present is made in the same plants that produce synthetic ammonia. Methanol plants of the world are turning out thousands of tons of this important alcohol every month. Previously methanol was obtained as one of the products of the distillation of wood. The synthetic product can be made cheaper and purer than from wood so that the death knell of the wood distillation industry was sounded when the synthetic product was first produced.

Petroleum Process Improvements

Before the automobile was as widely used as it is today, crude petroleum was distilled and a certain fraction became the gasoline of commerce. Crude oil yielded about 25 percent of its volume as gasoline. The great expansion in the use of motor cars stepped up the demand for gasoline. Chemists developed the cracking process and thereby increased the yield of gasoline to forty and then fifty percent of the original crude oil. Changes in motor design made it necessary to develop gasolines with specific properties as far as behavior in the cylinder of the motor was concerned. Anti-knock compounds were developed and the hydrogenation of the cracked gasolines was begun. Today crude oil is yielding as much as seventy percent of its volume as gasoline and the blended products perform much better than the straight run gas of twenty-five years ago. The chemists of the petroleum industry have progressed so far that they are now able to take a thousand barrels of crude oil and crack it in alloy tube furnaces. This is followed by hydrogenation, then further cracking, followed by hydrogenation again, until finally there comes from the plant more than a thousand barrels of gasoline. Present practice does not go this far but it is a possibility for the future. Valuable by-products, known as cracked gases, are formed at present, and these are being used to synthesize many important substances by making use of high pressure hydrogenation and related operations.

As to the future, should our petroleum be exhausted we shall not be greatly concerned. It is now possible to successfully prepare liquid fuel and from it gasoline by the high pressure hydrogenation of coals. This same plant at Leuna, Germany, which makes so much methanol and fixed nitrogen is producing during the current year one hundred thousand tons of gasoline from brown coal.

Time does not permit the discussion of other important developments that have come as the result of chemical research. Synthetic rubber is a reality and Russia alone made some 200,000 tires during the past year from synthetic materials. Recently we have seen new emulsifying agents appear on the market and they bid fair to displace soap in many instances. The advantage of this new material lies in the fact that it acts as well in hard water as in soft water. One of the largest chemical companies in this country is producing grain alcohol by synthesis from ethylene. The alcohol so produced is identical with that produced by fermentation. This same company is making an increasing number of important chemicals from acetylene as well as ethylene. Many of these products are causing revolutionary changes in established practices.

Thus we see that chemical research is playing an ever increasing role in the industrial life of the world. Research laboratories place the companies maintaining them at least two years ahead of competitors who do not maintain such laboratories. New discoveries in the laboratory find their way into the channels of commerce in a surprisingly short time as compared to twenty-five years ago. The chemical industries of this country have announced the discovery and successful development of some three hundred new materials since the beginning of the depression. Since everything we deal with is chemical, our hope lies in ever greater expansion of research and an ever larger use of the materials which the laboratory makes available to us.

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Civil Service Urged in Report Of Research Body

Commission on Personnel, Headed by Dr. Coffman, Asks Broad Advances

CAREER MEN NEEDED

Findings of Group from Social Science Research Council Stated as Study Ends

The establishment of a career system in federal, state and local civil service, under which persons of high caliber, entering government work in youth may be assured of a "worthwhile life work," with opportunity to advance to posts of distinction and honor, is advocated by the commission of inquiry on public service personnel. Its report of a year's study was made public by the chairman, L. D. Coffman, president of the University of Minnesota.

As contrasted to the career system, the committee found the spoils system now occupies a dominant plane in American governmental service "by a corruption of democracy."

"The spoils system, the use of the public payroll for charity, indiscriminating criticism of public employees and the failure to adjust our ideas, our governmental institutions and our public personnel policies to the social and economic changes since the Civil war," the commission asserted, have made the government unable to compete with private business, industry and the professions in attracting a fair share of the nation's best manpower.

Seven-Point Program Offered

A seven-point program for immediate action to improve governmental service was advocated, together with numerous general recommendations. Measures urged for immediate action follows:

1—Extension of the federal civil service system to include all postmasterships, deputy collectors of internal revenue and deputy marshals, such professional and skilled services of the regular departments as are now exempted and the personnel of federal emergency administrations, boards and agencies.

2—Repeal of all general legislation, prescribing residence requirements or geographic apportionment of appointments; repeal of all national, state and local measures setting a definite term for appointive officials; repeal of Section 213 of the economy act of 1932, which required the discharge of one member of a married couple employed in the federal service.

3—Amendment of the veterans preference laws so that they will adequately recognize the war service of veterans without conflicting with merit principles or the efficiency of the public service.

4—Establishment or designation of a personnel officer in every department or agency of adequate size in federal, state and local governments.

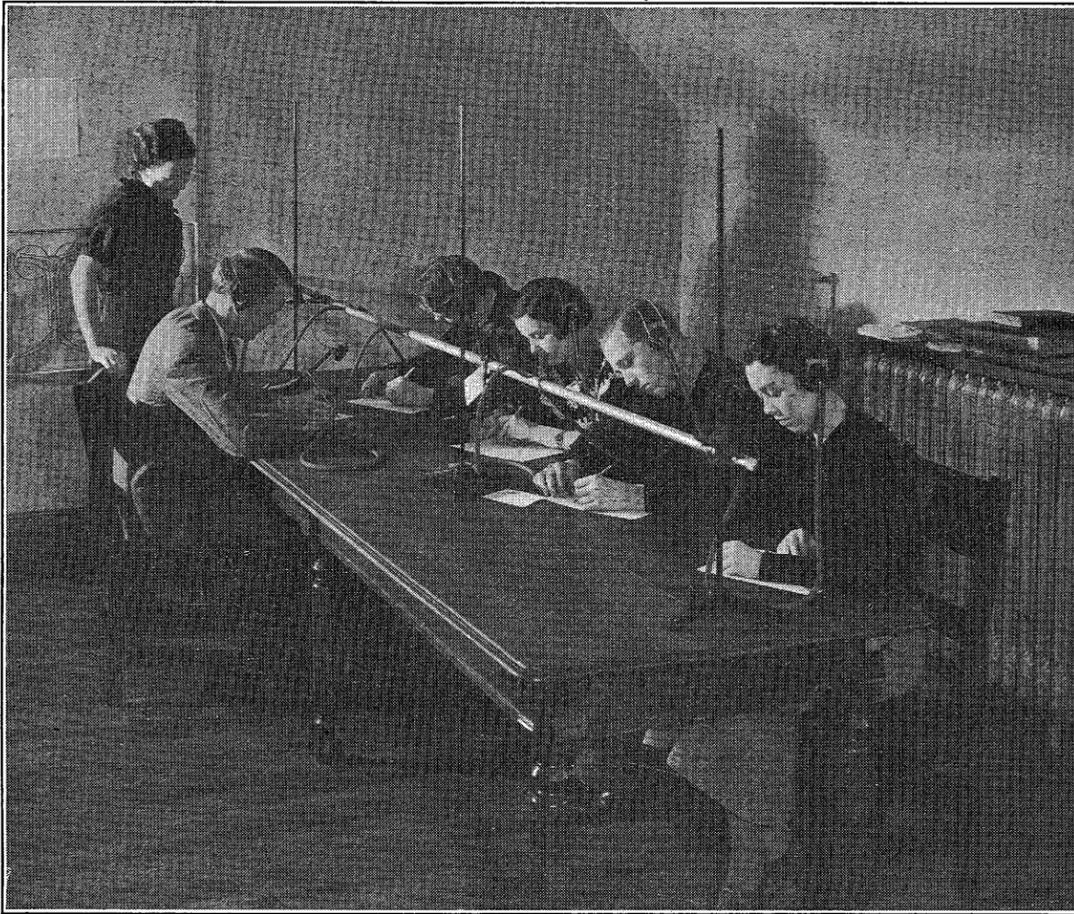
5—Increase in the appropriations for personal administration and for the civil service commission in the federal government and others where necessary to maintain the merit system.

6—Extension of classification and salary standardization to the federal services outside the District of Columbia.

7—Extension of the merit system to the personnel of state and local governmental agencies spending federal funds, under standards supervised by the United States civil service commission.

This commission, appointed by the Social Science Research Council and financed by the Spelman (Continued on Page 4, Column 1)

Write Left Handed to Help Stammering



Strangest Movie Has as Actors University Students Who Stammer

Speech Clinic and Visual Education Bodies Make Talkie in New Field

One of the strangest motion pictures ever made has recently been on exhibition at the University of Minnesota. It is not for general public purposes, but made chiefly for the actors. These, at each showing, gather to watch themselves and each other, to laugh loudly at the performances of the other fellow, and even more loudly at their own.

One who did not know the purpose of making a sound picture of the worst stammerers in the University of Minnesota might think that such a picture was heartless and uncalled for. Not only is this far from the truth, but the picture is entirely wholesome, useful, and helpful, the purposes for which it was filmed being granted.

On the top floor of Folwell Hall is a department called the speech clinic. It is under the direction of Dr. Bryngelson, whose special concern is the treatment, and if possible the cure, of stammerers. To this end the speech clinic devotes a comprehensive program of classes, conferences, and, possibly most important of all, laboratory procedures.

The theory at the bottom of Dr. Bryngelson's work is that stammering results when neither side of the brain is dominant. That is to say, the right side of the brain governs the acts of the left side of the body, the left, those of the body's right side. Take, then, the case of a child born left-handed. His parents think this must be some sort of a curse, and they start training him to make him right-handed. As a matter of fact, says Dr. Bryngelson, while the child was left-handed, there was a dominance of the right side of the brain, and all was well. But when the child was trained to be right-handed, the dominance of the right side of the brain was interfered with and, unless dominance of the other side was built up at once, neither side was dominant. This results, in many instances, in a failure of the nerve impulses to govern certain acts, notably speech. He believes that it is from

such situations that stammering results.

Most of the activities of the speech clinic are directed toward two ends. One is to get the patient over whatever self-consciousness or feeling of inferiority may have resulted from stammering. The other is to train the patient so that one side of the brain becomes dominant. In those who have been "trained out" of left-handedness the effort is usually to re-establish that peculiarity, and with it give back dominance to the right side of the brain.

When Dr. Bryngelson heard that Minnesota had a department of visual education which was making motion pictures of certain educational procedures, he at once got in touch with Robert Kissack, director of visual education, to see about a "stammering film." One was taken. There are the stammerers, in all their glory. They twist their faces, they turn their eyes toward heaven, tears even roll down the cheeks of some. Is that sad? Is that awful? Is that discouraging? Not by any means. The actors and their comrades in stammering sit in the darkness as the picture is shown and roar with laughter. They discuss each other's difficulties and accomplishments. All suggestion of embarrassment or unwillingness to discuss their troubles has vanished.

Films showing persons in the act of stammering have been made before, but the new Minnesota picture is the only one that has employed sound as well as sight. Both Dr. Bryngelson and Mr. Kissack consider it a success.

Apart from the film, many other devices are used in the speech clinic laboratories. Students write with their left hands to re-establish dominance of the right half of the brain. They talk to themselves in mirrors. They make speeches before one another. One of the most useful of the laboratory procedures is the one shown in the accompanying picture. Here a person on the other side of the wall reads an article, and the students, hearing through ear phones, copy the words, using their left hands. This is practice and actual exercise toward the re-establishment of brain dominance on one side or the other.

How and Why of Water in Nature Told by Lecturer

First Sigma Xi Address Discusses Water's Relation to Human Race

VAGARIES DESCRIBED

There Are 300,000,000 Cubic Miles of It in World; Much Underground

The sources of water, its distribution over the face of the earth, and under the earth's surface, its movements and shifts, and the things man does that reduce water supplies and may do to replenish them were discussed by Dr. George A. Thiel of the geology department in the first of four Sigma Xi lectures on science in Northrop Memorial Auditorium. He spoke Friday night, January 25th. The general theme of the series this year is, "Our Natural Heritage in Relation to Public Welfare." Dr. Thiel's subject was, "The Relation of Human Activities to Depletion of Our Water Resources."

Other lectures are being given in the series as follows: February 1, "The Forests and Human Welfare," by Dr. Henry Schmidt, head of the division of forestry; Feb. 8, "The Soils," by Dr. F. J. Alway, chief of the division of soils; and February 15, "People as a Factor in Our Natural Heritage," by Richard E. Scammon, dean of the medical sciences.

Every farmer considers his land more valuable if it slopes gently down toward the shore of a deep clear lake, and every village considers its location ideal when it lies along a beautiful lake shore. The records of our earliest civilization indicate that man then also appreciated the value of streams and valleys. The fame of the Valley of the Nile spread at an early date. People flocked to Egypt from the interior of Africa, from the desert of Arabia and from the western part of Asia, to claim their share of the fertile valley land. The Nile river did the work of a million men by spreading a fresh layer of soil over the fields and pastures. The valley attracted people because it offered them food upon fairly easy terms.

From Egypt civilization spread to another valley, this time in Asia to the land which the Greeks called Mesopotamia, the "country between the rivers." These rivers, the Tigris and Euphrates, had built up fertile plains with sediments carried from the mountains of Armenia.

Prior to these stages in human history man used water not only as a means of transportation but also as a barrier for protection. He built his home on stilts over a lake or a bay or he constructed artificial islands on which to build his villages.

Origin and Occurrence of Water

The most stupendous body of water on the face of the earth is the ocean. This great basin which contains over 300,000,000 cubic miles of water covers nearly three-fourths of the earth's surface. All of this vast submerged territory is lost to us as a place of residence, unless as stated by Van Loon we are able to redevelop those gills which our ancestors of a few million years ago possessed. If the oceans did not cover such a high percentage of the earth, it is extremely doubtful whether we could exist at all. For the sea is a vast reservoir of heat. Geologic history shows us conclusively that there have been times when there was more land and less water than today, but invariably these were periods of intense cold. The present balance between land and water is what determines our climatic zones, and we shall continue to be much better off if that balance is not seriously disturbed.

The water of the seas is sufficient to form a universal ocean on (Continued on Page 2, Column 1)

Adults May Join Evening Classes Through This Week

Registration in evening classes for the second semester of the General Extension Division will still be possible throughout the present week, ending February 9. First semester examinations were concluded last week. For the second semester, which will run until the end of May, an unusually attractive group of courses has been arranged, including courses in engineering, business subjects, arts and sciences, and a group of special offerings, such as gardening, extempore speaking, railway air conditioning, and current problems in the light of American history. There will also be a large group of courses in literature, languages, and composition, including beginning composition, business writing, short story writing and the writing of newspaper and magazine articles. In the full semester, evening class enrollment was up about 30 percent from last year and this ratio is expected to hold for the second semester of the college year.

Chats Readers Asked to Report

After they have received this issue several hundred readers of Minnesota Chats outside the state of Minnesota, most of whom have been receiving the publication for a number of years, will be removed from the mailing list. Regular readers from points outside Minnesota who find that they do not receive the next number after this one, will know that their names have been removed. This does not, of course, cover all readers outside the state, nor libraries. Those who find that their subscriptions have been terminated but who wish to continue receiving Minnesota Chats are asked to write in to that effect, stating why they wish to remain on the list. These letters should be addressed to: The Editor of Minnesota Chats, 217 Administration Building, University of Minnesota."

National Bodies Heap Honors on 'U' Faculty Men

At the University of Minnesota they are "pointing with pride" in old-fashioned newspaper style to the number of faculty members who have been elected to leading offices in the world of scholarship. These honors show the standing of those elected among their fellow scientists and teachers from all institutions in the country.

Important, among the offices won by Minnesota faculty members at the Christmas holiday meetings were the election of Professor Colbert Searles to the presidency of the Modern Language Association of America, an outstanding recognition, and the election of Dean Guy Stanton Ford as second vice-president of the American Historical Association. This means that he will be president of the association two years hence, as progression is automatic.

Bernard Bierman was elected president of the National Coaches Association; Professor F. Stuart Chapin was made president of the American Sociological Society, one of the leading national learned societies, and Kenneth E. Olson, professor of journalism, became president of the American Association of Teachers of Journalism, re-elected for a second term. Edgar B. Wesley was chosen for the presidency of the Council for Social Studies. Dean W. F. Lasby of the College of Dentistry became vice-president of the American College of Dentists.

Other honors that came to Minnesotans were election of Roland S. Vaile, professor of marketing, as vice-president of the American Statistical Society, election of Professor Andrew Boss as head of the Experiment Station section of the Association of Land Grant Colleges and Universities; re-election of Dean Walter C. Coffey to the board of directors of the International Livestock Show, and choice of Dr. Ralph Casey as editor of the journalism teachers bulletin.

Others holding offices are Professor Roy C. Jones, who is president of the American Association of Collegiate Schools of Architecture; Dr. John E. Anderson, vice-president of section I, psychology, in the American Association for the Advancement of Science; Professor Donald Paterson, secretary of the American Psychological Association, and Professor John T. Tate, vice-president of the physics section of the American Association for the Advancement of Science and editor of publications for the American Physical Society.

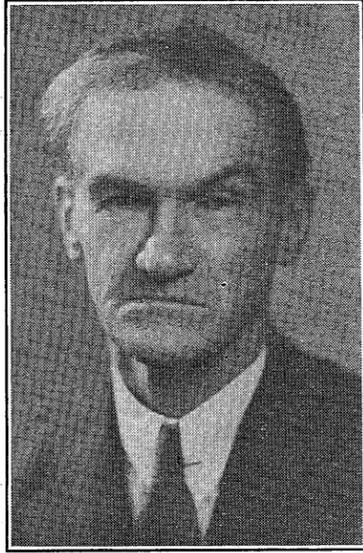
How and Why of Water in Nature

(Continued from Page 1, Column 5)

a smooth earth about two miles deep. These oceanic waters have had a marked influence on the development and shaping of the continents of the earth and on the development of the life that inhabits its surface. The source of such a tremendous volume of liquid matter is not yet thoroughly understood. Advocates of the Nebular Hypothesis of the earth's origin maintain that the waters condensed from a heavy and hot atmosphere that encircled a vast molten globe. If this hypothesis is correct, water could not exist in the liquid state on the early earth's surface. Eventually, when the surface crust had cooled to below the boiling point of water, the water vapor in the atmosphere condensed in a never ceasing deluge until an ocean, probably universal in its extent, had gathered to a depth of several thousand feet.

Chamberlin's more recent theory of the earth's origin, commonly referred to as the Planetesimal Hypothesis, pictures the earth as growing from a modest beginning chiefly by gathering in particles of scattered matter near it by mass action or gravitative attraction. The early earth had no atmosphere and no ocean. The atmosphere began to gather when the earth was approximately one-half its present size, and waters began to gather somewhat later. The early oceans were small and contained fresh water. Their present salinity is an acquired character derived from the soluble constituents in the rocks of the land area. Instead of the hot, murky darkness of the early ages as postulated by the Nebular Theory, the Planetesimal

Are Presidents of Learned Bodies



Professor Colbert Searles



Professor F. Stuart Chapin

The Modern Language Association of America, of which Professor Searles is president, has a membership of more than 5,000, made up of teachers of English and of the modern foreign languages, French, German, Spanish, Italian, Scandinavian and those of lesser importance. Dr. Chapin, head of the department of Sociology at Minnesota for a number of years, heads the American Sociological Society, the central organization of the various groups that specialize in the study of that subject.

Hypothesis pictures the early atmosphere as cool and bright.

Many geologists are of the opinion that the constitution of the earth's crust harmonizes with the theory of the accumulation of matter in the presence of water in a liquid state and most scientists believe that the development of living organisms on a planet can take place only when liquid water can exist.

It is evident from these brief statements regarding the origin of our planet that we cannot hope to explain the origin of the waters of the earth until the problems of the earth's origin are more clearly understood.

Geologically the earth may be subdivided into three spheres—the outer, gaseous atmosphere, the watery hydrosphere, and the rigid and rocky lithosphere. Water is present in varying amounts everywhere in the lower portion of the atmosphere and nearly everywhere in the outer crust of the lithosphere.

In order to more fully appreciate the variations in the distribution of water in the land areas of the earth, a few words regarding the role of the atmosphere in transporting water from the ocean to the land may not be amiss.

Function of the Atmosphere

The earth's atmosphere constitutes slightly less than a millionth part of the earth's whole mass. But the rain which falls from the atmosphere every century weighs seven times as much as the air itself. Three-fourths of this rain falls back into the ocean. Even so, the work of the atmosphere amounts to pouring all the water of the oceans over the land once in twelve thousand years. Nearly three-fourths of this rainfall again vaporizes. What remains flows back to the sea in rivers. An amount of water equivalent to the whole volume of the ocean has done this at least thirty thousand times during the known duration of geologic history. However, an analysis of evaporation and precipitation figures discloses the fact that one-fifth of the entire evaporation on the earth's surface comes from evaporation on the land. Only seven per cent of all the water evaporated from the oceans enters into the precipitation over land. Thus we see that the water supply for the land areas of the earth, receives but slight addition from oceanic waters.

The total annual fall of meteoric water on the earth's land areas is about 26,600 cubic miles. This precipitation varies greatly both with respect to geographic location and time. Furthermore it may be in the form of rain or snow. In polar regions the snowfall represents from eight to fifteen inches of water, whereas on certain southern slopes of the Himalayas the rainfall may be as much as five hundred inches a year. In dry regions such as the vast desert areas of northern Africa, central Asia, Australia, and along the coast of Peru, only a few inches of water is precipitated annually. Among the Canary Islands surrounded by water, are localities that have very little rainfall for periods as long as three

years in duration. Such great variations in rainfall raise important problems in agriculture, forestry and water supply engineering.

The average rainfall for the United States varies from 70 inches for the Gulf Coast and Northwest Pacific Coast region to 15 inches over the Great Plains and less than 10 inches in the American Desert of Nevada, Arizona and S. E. California.

Minnesota receives on an average about 10 inches more precipitation in the eastern part of the state than in the northwestern counties. For the Twin City area there are a few marked variations but the general average is uniform. The greatest fluctuation occurred from the extreme low of 11.59 inches in 1910 to the abnormally high of 40 inches in 1911. The average rainfall in this region for the crop-growing season from May to August inclusive for the past 97 years is 14.32 inches. The average for the last five summers has been only 11.55 inches.

Precipitation Statistics

A comprehensive study has been made of precipitations for each state east of the Rocky Mountains, showing the annual average precipitation for each state for the 40 years up to 1933, on the basis of 10 year moving averages. These disclose a well marked tendency during the past quarter of a century to descending trends in much of the North, especially the Northwest, and to rising trends in the South.

In Minnesota, for example, the average for the 10 years ending in 1908 is approximately 29.5 inches, and for the decade ending with 1933 the average is just a little more than 25 inches. In other words, the former 10 year period had nearly 30 per cent more rainfall than the latter. A falling off in precipitation of such magnitude is especially noticeable in a region like this where the amount normally is rather small. The Northwestern decline in precipitation centers in Minnesota but covers the northern Plains to the west, especially the Dakotas, and extends eastward to the Great Lakes.

An examination of the long time record for the Twin City area shows that conditions similar to those now being experienced have occurred twice before in the last 100 years. Plotted as a trend line, it would show three minima: For the 10 years ending with 1848, 1894 and 1933. The averages for these were practically the same. In other words, our present droughts are no more severe than those of 40 and 80 years ago.

What Happens to Water

Of the water that is precipitated upon the earth, part is carried by the streams and rivers to the sea, another part is evaporated, and still another part soaks into the ground and is stored in the openings in the rocks. Much of the precipitation that penetrates the ground surface is again taken from the earth to the atmosphere through evaporation and transpiration. Some of the precipitated water is added to the "ground storage." Stream flow, however,

University Instructor in Boxing "Saw Life" as New York Student

drains from this storage as well as from the immediate run-off.

While precipitation is responsible for the amount of water in the streams, the relation between precipitation and the river stages during the year is not direct or immediate. It has been shown that a rainfall of three or more inches per month during the early portions of the year gives rise to flows of considerable magnitude whereas even greater rainfalls during the summer months have little or no effect upon the flow of the streams. During the period between December and May the winter snow and spring rains saturate the ground. This is the storage period. During June, July and August the rainfall is rarely sufficient to take care of evaporation and plant life. Stream flows therefore are usually dependent entirely upon the ground water. Often the ground water begins to furnish most of the stream flow as early as the month of May.

The "Water Table"

The zone for the storage of this ground water is limited to a layer a few thousand feet thick in the outer part of the earth's crust. The upper surface of this zone is known as the "water table" or ground water level. In general it follows the contour of the ground but with more gentle slopes. In arid regions its upper limit is some distance beneath the land surface, but in humid areas it is comparatively near the surface; and in lake basins it is actually above the surface of the land. In the zone between the water-table and the surface there is a nearly continuous circulation of water downward during rainy weather under the impulse of gravity and upward during dry periods as the result of capillarity.

Water is present everywhere below the ground water level. It does not occur in veins, channels, lakes or pools, excepting in regions of limestone rocks where underground waters have locally dissolved the rocks. The amount of ground water available at any one point is dependent primarily upon the porosity of the rocks, and not upon the behavior of a willow twig or divining rod.

The origin of the divining rod or witch willow is lost in antiquity. Students of the subject have discovered in ancient literature many references to the use of rods, wands, and other objects of magic. Divining rods have been used for forecasting events, for locating buried treasures, or lost landmarks; for locating ores, minerals, oil and water, for analyzing personal character, for curing disease, for locating strayed or stolen cattle, for determining the heights of trees, for tracing criminals, for detecting murderers in church, and the like. The sphere of usefulness of the divining rod has shrunk with its authority. In one realm after another it has been found useless.

The depth of the lower limit of the ground water zone has been a subject of much discussion. Since the water must be held in the pores between the grains of the rock, it can exist only where there are such pores. Van Hise estimated that pores can exist only to a depth of six miles, but more recent experiments at the Geophysical laboratory in Washington show that pores may exist in some rocks at pressures that are equivalent to a depth of eleven miles. However, at depths greater than a few thousand feet the openings are so minute that water will not flow. Therefore, the walls in many deep mines appear to be dry even though water is present in tiny capillary pores.

The total amount of water in storage within the outer part of the earth is enormous. Dr. Slichter, consulting engineer of the United States Geological Survey in charge of the investigations of movements of underground water for the United States Reclamation Service, computed the water in the earth of both the land and ocean areas to be nearly one-third the amount of the oceanic waters.

The quantity of water within the first 100 feet from the ground surface in the United States has been estimated as sufficient to fill a reservoir as large as the U. S. and about 17 feet deep. That is, an amount equivalent to six or seven years' rainfall or some 20 years' discharge of all the rivers of this country.

How Lakes Are Formed

A glacier forms lake basins in

Former Central High Athlete Now a Member of Physical Education Department

Edwin B. Haislet of Minneapolis, boxing instructor and assistant in the intramural department at the University of Minnesota, has had his share of exciting experiences in preparing for the work which he now carries on. A graduate of the department of physical education at Minnesota, he received his master's degree from New York University in 1932. While pursuing advance work there and at the National Recreation School in New York he coached basketball and boxing and directed game-room work at God's Providence House in the heart of the Bowery district.

The House, located on Bowery and Broome streets in New York, is the center of the famous "melting pot" district and Haislet's classes were filled with boys of recent immigrant families of many types.

"The first night I took over the classes," said Mr. Haislet, "I was warned that unless I could show myself the physical master of the boys in my classes I might as well quit.

"When I took charge of the first class, the boys, ranging from small lads to fellows considerably larger than myself, stood around, sullen and resentful. The 'show me' attitude pervaded the room so I started out by boxing every boy there. Starting with the little fellows I boxed one round with each boy. As the boys got larger the situation simply resolved itself into a 'survival of the fittest'."

A race riot in Harlem, the result of calling a foul against a favorite in a boys' boxing tournament, was another trying experience for Haislet. Knives and blackjacks were wielded freely and officials had to barricade themselves in a dressing room against the mob.

"Just when things began to look serious for us," says Haislet, "an old Negro minister entered the place. He stood on a chair and began talking to the crowd. I don't know what he said but that crowd stopped fighting and filed out of the building as if by magic."

Several other times after officiating at basketball games or boxing matches in this district Haislet and other officials faced mobs that were waiting at the dressing room doors.

"These are every day occurrences for students who work in these settlement houses," he said. "The district is the home of many gangsters but we felt that we were doing some good by encouraging boys to spend their spare time in athletics and so teaching them something about the right way of living," concluded Haislet.

Haislet entered Minnesota from Central high school, Minneapolis. He played football on the Central team of 1926 that won the city championship and engaged in amateur boxing both in high school and at the university. His father, Sam Haislet, was at one time secretary of the Minnesota Editorial Association.

Student Library Contest Planned

The University of Minnesota Press has announced that it will conduct a student library contest on the campus during the winter quarter, with prizes of \$50, \$25, \$15, and \$10 worth of books to be awarded to the students submitting the four best libraries. Lists of books comprised in the students' libraries will be received by the judges until March 15, when an elimination judging will be made, and those surviving the elimination will be asked to exhibit their libraries at some central place on the campus, probably the library. F. K. Walter, director of the university library, is chairman of the judging committee, the other members being Miss Gratia Countryman, head of the Minneapolis Public Library; Dean Malcolm MacLean, Dean E. M. Freeman, and James Gray, St. Paul critic. Judging will take place April 15. The prizes are being donated by campus and downtown bookstores.

How and Why of Water in Nature

(Continued from Page 2, Column 4)

a number of different ways. Some basins are gouged out of solid rock by the abrasive and plucking action of the ice.

Glacial deposition, however, is responsible for the formation of more lake basins than glacial erosion. As a glacier melts and recedes the rock debris in the ice is deposited in such an irregular manner that numerous depressions without outlets remain in the topography. If the floors of such depressions are lower than the regional ground-water level the basins are filled with water and lakes are formed. Such basins are most numerous in the terminal moraine zones where the greatest quantities of rock debris or drift were deposited. A study of the glacial history of the lake region in west central Minnesota indicates that a typical terminal moraine extends southeastward from Detroit Lakes through the region of Alexandria, Glenwood, Spicer and Hutchinson. Throughout the entire zone lake basins are very abundant. Lake Minnetonka and numerous smaller lakes in Hennepin and Carver counties are in a similar morainic belt.

Whatever the origin of lakes, there are processes laboring perpetually for their destruction. As soon as the lake is formed there is a constant struggle for existence against atmospheric influences that work by drawing water from its surface by evaporation.

The amount of loss through evaporation is commonly overlooked in discussions of the lowering of lake levels. Observations at Lake Minnetonka during the summer of 1933 showed an evaporation loss of 1.9 inches in three days. Calculated to the entire area of the lake, this means a loss of about 500,000,000 gallons into the atmosphere in three days, or 166,000,000 gallons per day. This is approximately three times the amount consumed by the entire city of Minneapolis for an equal period of time.

Lakes are also destroyed by streams and wave action. Each tributary stream bears its load of sand and mud into the lake, building its delta of coarser material farther and farther out from the original shore. Downcutting of the outlet eventually drains the lake and allows the streams to trench the delta deposits, leaving them as terraces.

Vegetation too plays an important part in the filling of lakes. This is especially noticeable in the smaller, shallow lakes. Sedges, rushes, and other marsh plants catch and hold the sediment along the shore, thus building shores slowly out into the lake. This continues until the strip becomes dry grassy land, and if the lake is sufficiently shallow the filling may progress from all sides until the lake is completely choked and destroyed. In some lakes a bed of marl is deposited in the shallow bays. Peat then grows over the marl and completely fills the bay.

Fluctuations of Water Levels

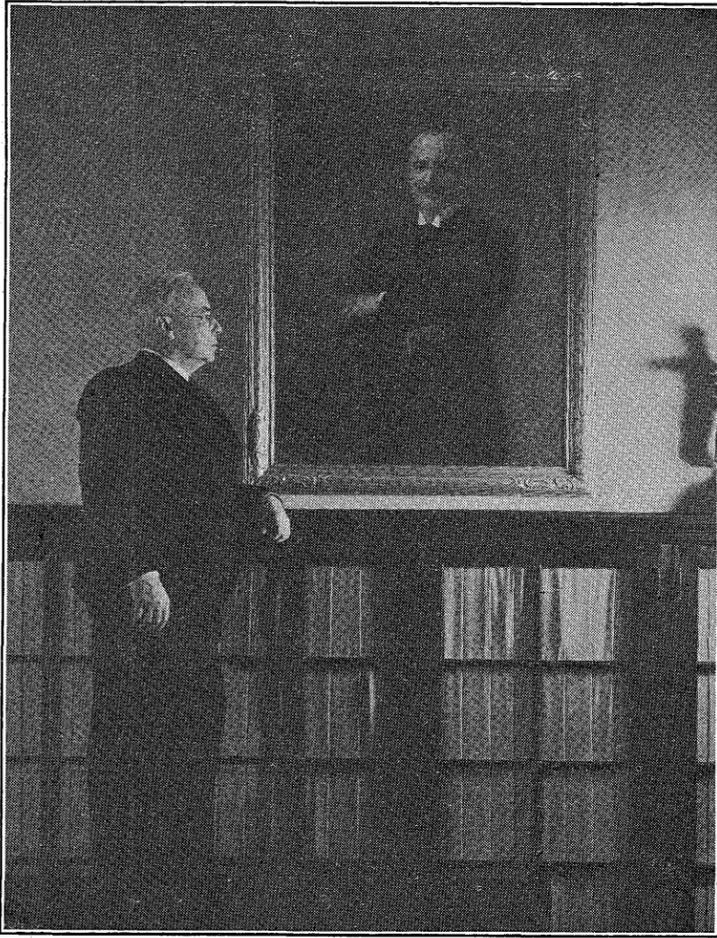
The water table at any one point marks the balance between supply from rainfall and inflow, and escape through drainage, evaporation, and plant transpiration. The position or depth below the surface, therefore, fluctuates under the influence of the above factors.

The loss through plant transpiration is far greater than is generally realized. Under favorable conditions an acre of land may produce about seven tons of dry vegetable matter. It has been found that corn evaporates 233 pounds and turnips 910 pounds of water for every pound of dry substance produced. If the evaporation of water is 500 times more than the amount of dry substance produced, then an acre will evaporate during the vegetative period about 3,500 tons of water.

Observations for a period of years have shown that one acre of oak forest 115 years old absorbed in one day from 2,000 to 2,600 gallons of water per acre. This corresponds to a rainfall of about 0.1 inch per day, or nearly three inches per month. Taking the period of vegetation as five months, the absorption of water would be about 160,000 cubic feet, which represents a rainfall for this period of about 17 inches.

Much rainwater is also lost by interception by tree crowns. Under average conditions a spruce forest will intercept about 39 per cent of the precipitation if it falls in the form of a slow rain. A broad-

'U' Gets Portrait of Oberhoffer



leaf forest intercepts about 13 per cent.

These figures give an idea of the enormous quantities of water given off through transpiration by forests into the air. Experiments have shown that a forest consumes more moisture, all other conditions being equal, than the same area bare of vegetation or covered with some herbaceous growth. Furthermore, a soil with a living vegetable cover loses moisture both through direct evaporation and absorption by its vegetation much faster than bare moist soil.

However, we must not condemn the forest for these transpiration losses, for trees increase both the abundance and frequency of local precipitation over the areas they occupy. The excess of precipitation as compared with that over adjoining unforested areas amounts in some cases to more than 25 per cent. Forests in broad continental valleys enrich with moisture prevailing air currents that pass over them and thus enable larger quantities of moisture to penetrate into the interior of the continent, and thereby increase rainfall. Furthermore, under ordinary conditions of rainfall, there is practically no surface run-off from forest covered slopes that have an abundant leaf litter. The saving of precipitation effected in this way by the forest is more than sufficient to offset whatever loss may have been sustained through transpiration or interception of the tree crowns. The ability of a forest to check surface run-off is greatest when the ground beneath is covered with an unbroken leaf litter. A forest without leaf litter on moderate slopes has little effect in checking run-off. Hence for a forest to exercise its most beneficial effect upon run-off and in turn upon rainfall it must not be burned over, grazed, or otherwise interfered with in its normal functions.

Retarding Decline of Lakes

Our increasing interest in lakes and lake levels may ultimately lead to a greater recharge or replenishment of underground water—for the lowering of lake levels may be retarded and that in turn will retard the discharge from underground storage.

The lowering of lake levels may be retarded:

- 1st. By the construction of dams across the outlet streams.
- 2nd. By the diversion of additional streams into the lake basin.
- 3rd. By the deepening of inlet streams that drain marshes and bog areas.
- 4th. By the addition of ground water that might otherwise be wasted from subsurface storage.

During recent years many attempts have been made to raise lake levels by pumping from underground water. In some regions the projects have been successful and in other localities continued pumping has produced

Many had forgotten that the late Emil Oberhoffer was the first head of the music department at the University of Minnesota until Mrs. Oberhoffer recently presented a handsome portrait of the late orchestra leader to the department of music. Mr. Oberhoffer is well remembered as the conductor for many years of the Minneapolis Symphony orchestra, in which capacity he preceded Henri Verbrugghen. The portrait of Mr. Oberhoffer was painted at Mrs. Oberhoffer's request by Chauncey Brewer of St. Paul. Mr. Brewer has painted many notables. He was the painter of the portrait of James Paige that was presented to the law school a year ago by the law alumni. Mr. Oberhoffer served as head of the department of music from 1902 until 1905, at which time Professor Carlyle Scott took over the principal teaching duties at Minnesota. Mr. Scott recalls that Mr. Oberhoffer, the late Professor Karl Schlenker and George B. Frankforter, former head of the department of chemistry, were members of the committee that asked him to come to Minnesota. The photograph shows Professor Scott admiring the picture of the famous orchestra conductor, which hangs in the library of the Music building.

slight, if any, change in the lake level.

A thorough study of many geological factors should be considered before such a project is undertaken.

We may take a diagram of a lake basin in sandy glacial drift—a lake similar to many of the glacial lakes in this state. Immediately below the drift under the lake are shales and limestones, both impervious strata. The well shown in the diagram penetrates the impervious strata and taps a porous sandstone filled with water at greater depth. This sandstone outcrops at some distance from the lake where it is saturated with water—for the upper surface of the water table is above it in the drift. Water pumped from the well is drawn from the drift in the area where it overlies the sandstone. That pumped into the lake will not percolate downward through the impervious strata, and thus the lake level may be maintained.

Now let us examine another diagram. Here again we see a glacial lake in a depression in glacial drift. Again sedimentary rocks are present below the drift. But in this case the porous sandstone is immediately below the lake basin and the impervious strata are at some distance to the right (or left). The well near the lake is again getting its supply of water from the sandstone. However, as the well is pumped the water level in the sandstone is lowered and the lake basin loses water into the earth to replenish the supply in the sandstone. Thus the water simply passes through a cycle from

Canadian Will Lecture on Zoology

A series of three lectures on entomology will be delivered at the University of Minnesota this month by Dr. Robert A. Wardle, head of the department of zoology at the University of Manitoba. On February 11 he will discuss, "The status of applied entomology in western Canada," speaking at University Farm. February 13 he will speak on "Some problems of parasitology in western Canada," the lecture to be in 313 Zoology building, Main campus. His third lecture, "Parasitology and medicine," also will be given in 313 Zoology building, on February 15. Dr. Wardle is being brought to the campus by the division of entomology and economic zoology, with the help of the graduate school, arrangements having been made by Dr. William A. Riley.

Minneapolis Big Dairy Food User

What quantity of dairy products does a large city use a year? Warren C. Waite and Rex W. Cox, division of agricultural economics, University Farm, St. Paul, have been making investigations in Minneapolis that give a clue to the total consumption of dairy products in that city.

Minneapolisians drink 16,000,000 gallons of milk a year and use 1,500,000 gallons of cream. They eat about 15,000,000 pounds of butter a year, and about six pounds of cheese per person, or about 3,000,000 pounds.

In making their study, the two agricultural economists chose 228 areas in Minneapolis in various parts of the city which, together, represented conditions in the city as a whole. Then, information was obtained from 2,187 families, which included 8,783 persons. It was discovered that less than one-third of the people covered by the survey use as much milk as the National Dairy Council has recommended for people on relief. One quart a day for each child and one pint for each adult is the recommendation.

In relation to other cities, especially eastern cities, the consumption of dairy products in Minneapolis is high. This is probably because of its location in the heart of an important dairy region, where the importance of dairy products as an item of food is generally recognized and their retail prices are relatively low.

lake to sandstone and from sandstone through well to lake. Under such geological conditions a lowering of lake level may be retarded by restoring evaporation losses, but the raising of the level is very problematic.

This illustrates in a general way the problems involved in the maintenance of lake levels in the area of the Twin Cities. The lakes north of St. Paul in Ramsey County have their basins over the more impervious dolomites, limestones and shales of early Ordovician age. In that region artesian wells are successfully retarding the lowering of lake levels. Lake Minnetonka, however, is in a glacial basin that is located over the more porous sandstones of Cambrian age. The pumping of artesian water from those sandstone formations may have little influence on the general lake level. Any addition by pumping will retard lowering to some extent, for it will replenish evaporation losses.

Suggested Conservation Measures

Benjamin Franklin once said, "When the well goes dry, we know the worth of water." In 1865 water was selling at \$1 per bucket in San Francisco. Last summer we were reminded that such conditions can recur even today—for whole communities in the Middle West were dependent upon water shipped in railroad tank cars. The people in a number of towns in Minnesota did not have sufficient water in reserve to put out a fire if one had broken out in their city.

Such conditions in large areas of the United States during the last few years have served to focus attention on the necessity of conserving our supplies of water. While it is believed that there is no occasion for undue alarm with regard to depletion, it is imperative that precautionary measures be taken to safeguard present supplies and guard against future depletion. Under present conditions the water in a natural subsurface reservoir is depleted seriously be-

Tariff Expert, Journalist, Heard

Robert Lincoln O'Brien Describes Import Duty Problems

Robert Lincoln O'Brien, who was personal secretary to Grover Cleveland during his second term as president of the United States and who today is chairman of the United States Tariff Commission, delivered a public lecture on "The World's Tariff Problem" in Northrop Memorial Auditorium Monday, January 28.

Mr. O'Brien's lecture was the first in a series of economic talks that will be given on the campus by speakers of national prominence. This is the third year that such a group of speakers has been brought to Minnesota by President L. D. Coffman. It has been announced that on February 26th, Fred I. Kent, former president of the American Bankers association, will speak.

Mr. O'Brien has been a newspaperman for most of his life. When Cleveland left the White House, O'Brien became Washington correspondent of the Boston Transcript, in which position he continued until 1905. He then became managing director of the Boston Herald and Boston Traveler, morning and evening newspapers. It was in 1931 that he was made chairman of the tariff commission. He is a trustee of the Pulitzer School of Journalism. Professor Roy G. Blakey is chairman of the committee that is arranging the economic lecture series.

fore the need for conservation is seen.

Hydrologists and geologists have suggested a number of methods for maintaining water levels. These methods apply to both surface and subsurface storage:

- 1st. Rehabilitation of vegetation—both forests and grasses to retard the run-off during rainfall.
- 2nd. Artificial control of run-off by means of dams and reservoirs.
- 3rd. Artificially increasing the recharge due to percolation, by spreading and other methods.
- 4th. Artificially decreasing the discharge of underground reservoirs.
- 5th. The capping and control of flowing wells to conserve hydrostatic pressure in artesian basins.
- 6th. An educational program to bring before the consumers of water, the details of occurrence and means of utilization.

In large areas of the Great Plains region the rehabilitation of vegetation, especially sod-forming grasses on the grazing lands, is a problem of first magnitude. It is a matter of common record that before the area was settled, the grass in many of the grazing areas was, in terms of the stock men, "high enough to hide a calf," whereas now it is seldom over a few inches high. Such depletion of vegetation results in rapid run-off and erosion, and rapid run-off is unfavorable for percolation of water into the ground. The depletion of vegetation has been brought about by the over-grazing of cattle and sheep ranges and the cultivation of semi-arid, non-irrigatable, marginal land. Such a practice has proven disastrous in many places, not only to the settler but also to the land. Due to over-grazing and to cultivation, soil erosion has set in over extensive areas, and if this condition is not remedied within a short time, many square miles of lands now suitable for grazing will be lost, and I might add that we in this region will then continue to have dust storms similar to those we experienced a year ago.

The artificial control of run-off by means of dams and reservoirs is now common practice in many localities. The Minnesota State Planning Board has recommended the construction of a number of check dams along the valley of the Minnesota River and the tributaries of the Red River of the north. Small dams across small lines of drainage result in a twofold benefit. They conserve the surface supply and they allow the reservoir water to escape slowly down a stream channel where it can percolate into the alluvium and thus maintain the subsurface flow. Some reservoirs have been constructed over areas of outcrop of permeable strata so that surface waters may be diverted to underground storage.

MINNESOTA CHATS

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WHAT? NO INCOME TAX?

One of the bits of public misinformation that keeps popping up most persistently is the statement that state employees are exempt from income taxes. This usually comes up when state finances are being discussed, and the implication is that state employees should contribute their share in income taxes, particularly when the state is being forced to seek new tax sources. State employees with taxable incomes are not exempt from the state income tax, never were, and no statement to that effect was ever correct. They are liable for the state income tax, they have to pay it, and they do. It is the federal income tax that state employees need not pay. And why? This is an interesting story. A decision by the famous Chief Justice of the United States, John Marshall, more than 100 years ago, established the principle that the power to tax is the power to destroy. But the federal government can not destroy the states, hence it can not tax them. Hence, also, it does not tax their employees. This may be too simple a statement of it to please chief justices and such, but it carries the gist of the idea. Blame John Marshall, not the state employees or those of the university.

Report Urges Civil Service

(Continued from Page 1, Column 1)
fund, conducted hearings in several American cities and in London; had experts prepare monographs on the British, French and German civil services, and used a research staff under Dr. Luther Gulick, director of the Institute of Public Administration at Columbia university to gather and correlate other relevant data.

Seeking the type of civil service whereby each recruit might carry a marshal's baton in his knapsack, the commission recommended the establishment of five broad career services, an administrative service, the professional or technical service, clerical service, skilled and trades service and an unskilled service.

There should be provision in each of these services, they said, for recruiting from the educational system; competitive examinations for entry to all positions; certification by professional associations for all technical and professional positions; establishment of a probationary period before an appointment become permanent; advancement on the basis of merit to the highest non-political posts; adequate provision for transfer from one of the five career services into another; higher salaries for the top positions and adequate retirement and pension provisions.

The commission asked that these be security against dismissal or demotion for trivial, personal, religious, racial, political or other arbitrary reasons. It asked a greater co-operation between federal, state and local administrations and the modernization of unwieldy small units of government through consolidation of boundaries and positions, the establishment of joint services and the use of central technical assistance.

The practical results of a career service, the commission said, will benefit the public through lowered costs, efficient and impartial service and benefit the government worker by offering him "an esteemed and honorable career with adequate remuneration and retirement pension, and free him from the necessity of political contributions and partisan work."

Members of the commission besides Dr. Coffman were Louis Brownlow, director of the Public Administration Clearing House, Chicago; Ralph Budd, president of the Chicago, Burlington & Quincy railroad; Arthur L. Day, vice president of the Corning Glass works, and Dr. Charles E. Merriam, chairman of the department of political science, University of Chicago.

Sociologists Elect Chapin

Dr. F. Stuart Chapin, professor of sociology and head of the department at the University of Minnesota, will head the American Sociological Society for the coming year.

Lectures to Cover Bills Proposing Economic Policies

"To present an impartial analysis of legislation involving economic problems" is the stated purpose of a series of ten lectures that are being given by members of the School of Business Administration faculty, University of Minnesota, over WLB, the university station. WLB is on the same wave length as WTCN, the St. Paul Dispatch-Minneapolis Tribune station. The talks are being given at 7:30 p. m. each Tuesday evening. The series began Tuesday, January 22, when Dean Russell A. Stevenson discussed, "Unemployment Insurance."

"During the national and state law making sessions there will be heated discussion of a large number of vital economic problems," Dean Stevenson said in announcing the series. "One can hardly expect that either the ardent proponents or the warm opponents of any bill will give a truly unbiased picture of the measure in speeches he may make regarding it. Members of the university staff, however, are neither for nor against any bill. This series is meant to help the citizen in determining what the issues are, so that he may form an independent judgment of the measures discussed."

Following Dean Stevenson's address, these subjects are slated: January 29, "The national industrial recovery act," Professor George Filippetti; February 5, "The Sales tax," Professor R. G. Blakey; February 12, "Recent securities legislation," Professor J. W. Stehman; February 19, "Agricultural legislation," Professor O. B. Jesness; 26th, "The Tennessee Valley Authority," Professor E. P. Schmidt; March 5, "The thirty hour week," Professor F. B. Garver; 12th, "The national labor relations board," Professor Dale Yoder; 19th, "Bank Legislation," Professor W. R. Meyers; 26th, "Conservation policies," Professor Roland S. Vaile.

WLB operates on a wave length of 1250 kilocycles.

Medical Broadcasts to Continue
Weekly broadcasts on behalf of the Minnesota State Medical Association will be continued this month by Dr. W. A. O'Brien, associate professor of pathology in the Medical School. His subjects will be: February 5, "Some heart facts;" 12th, "Pernicious anemia;" 19th, "Hives;" 26th, "Mouth Health and General Health." Dr. O'Brien speaks Tuesday mornings at 10:30 o'clock.

Dr. R. A. Gortner, chief of the Division of Agricultural Biochemistry, Department of Agriculture, University of Minnesota, has been re-elected councillor-at-large for the American Chemical Society for the three year period beginning January 1, 1935, and ending December 31, 1937.

This address was made over WCCO by Dr. Leroy S. Palmer of the division of agricultural biochemistry at University Farm. It is one in a series delivered by members of the Minnesota section of the American Chemical Society.

LAST year over 24 million cattle were kept in the United States for producing milk. Nearly two million of these were in Minnesota. Only Wisconsin exceeded us in this respect. The milk cow population in the entire country was valued last year at considerably over one-half billion dollars. These cows produced nearly 13 billion gallons of milk and we, as consumers, paid almost two and one-half billion dollars for it and its various products. It is thus evident that the dairy industry is big business even in these times of depression.

It will be possible in this short talk to present only a birds-eye view of the chemical aspects of this great industry. No claim will be made that chemistry is alone responsible for its technological development. The great and varied contributions to this aspect of its progress made by other branches of science, especially bacteriology and engineering, are freely acknowledged. In this connection it is interesting that of the ten men who were recently judged by the leaders in dairying in the United States to be "The Ten Master Minds of Dairying," three were trained as chemists, two as bacteriologists and two as engineers. Incidentally I may remind my hearers that two of these men, namely the late Dr. C. H. Eckles and Prof. T. L. Haecker, who is still living at the age of 88 years, occupied the chair of Dairy Husbandry in the University of Minnesota.

When considered from a chemical standpoint it is desirable to view the dairy industry both in retrospect and in prospect. On looking back we note that it was the ingenuity and tireless effort of a chemist—Dr. S. M. Babcock—who laid the first firm foundations upon which the dairy industry was to be built in this country as well as in many other parts of the world. His great contribution was the successful development of a simple, accurate method for determining the butter fat content of milk and cream. This was in 1890. Babcock's invention made it possible for the first time to select accurately the profitable dairy cows and thereby bring about improvement of dairy breeds and dairy herds. It also became possible to standardize the marketing of milk and to pay dairy farmers for their milk and cream on an equitable basis. Within ten years after its perfection, the Babcock test for butter fat had revolutionized many practices in the dairy industry. This test or some modification of it is still the most universal chemical control employed in nearly every branch of the dairy industry in the United States and in many other countries. It is little wonder that Dr. Babcock was placed first among "The Ten Master Minds of Dairying."

So commonly employed is the fat test in the dairy industry that many who perform it have no doubt lost sight of the fact, if it was ever appreciated by them, that it is based on chemical principles and upon certain chemical properties of the ingredients of milk. I am sure it is seldom regarded as a chemical control measure, which it is, in reality.

Other Chemical Contributions

Although the dairy industry employs other chemical control tests, the fat analysis is essentially the only one used in the marketing of fluid milk for household purposes. Milk is a very perishable product. Very few other practical chemical tests have been devised which may be applied with equal rapidity to milk that is to be consumed in the liquid state. However, many large milk plants now have apparatus for determining in a few minutes the total dry matter in milk and also whether water has been added to it. Thus they are equipped to insure that the chemical composition of the milk to be delivered to consumers is normal in other respects as well as in fat content.

In our large milk distributing centers more attention is paid to the sanitary condition of the milk than to minor chemical defects. Rapid tests for undesirable sediment, bacteria, and the like, render this type of control very practical. However, the perishable na-

The Dairy Industry from a Chemical Standpoint

ture of milk is not due entirely to bacteria and other microorganisms. Milk may possess both chemical and biochemical agents which cause changes of an undesired nature, although not necessarily harmful to its healthfulness. These changes are usually characterized by peculiar off-flavors known by various terms, depending upon the imagination and taste senses of consumers. A typical term for certain of these is cardboard flavor. Other terms are bitter, talloxy, etc. Most of these flavors are in reality types of rancidity inasmuch as they arise chiefly from the fatty materials of milk. Pasteurized milk is more prone to develop these defects than raw milk but the problem as a whole has been only partly solved. Sometimes other fat-rich dairy products develop similar off-flavor, particularly cream, ice-cream and milk powder made from whole milk. When this problem is entirely solved the dairy industry will welcome quick chemical tests for detecting in advance the agents causing such defects. Obviously the possibility exists of even greater chemical control in the market milk phase of the dairy industry.

Chemistry and Feeding

Chemistry plays no direct role in the production of milk on the farm. Indirectly, however, the advances made in the chemistry of nutrition have potentially placed the feeding of cows on a sufficiently high scientific plane that the full milk producing capacity they have inherited becomes realizable. One would indeed be bold to assert that the last word has been said in the science of feeding dairy cows or even that present knowledge regarding these matters is universally applied. It is possible to claim, however, that advances along these lines have been very great during recent years, especially in determining the mineral and vitamin requirements of cattle and other farm animals. Chemical studies have shown the occurrence of natural deficiencies of these essential food units for milk cows and the extent of such occurrences. For the past ten years the Minnesota Agricultural Experiment Station has been a leader in studying phosphorus deficiency among dairy cows in Minnesota and neighboring states. More recently it has been studying the widespread occurrence of calcium and vitamin D deficiency among calves. These studies will be especially useful during the coming winter in this region where cows probably will be offered many unusual and heretofore unheard of combinations of plants and other foods in lieu of their normal rations.

Chemical knowledge and chemical control have found their greatest direct application in the manufacture of dairy products, although the extent to which these are employed varies from very slight to relatively great in different branches of the industry. Certain products whose production requires little if any direct chemical testing, nevertheless are greatly modified by chemical reactions which go on during their manufacture. For example, in the case of the dried skim milk which goes into bread and other baked goods, it has been found that a certain heat treatment of the milk before being dried greatly increases its useful chemical properties as a constituent of dough. Another example is ice cream in which the most desirable textures have been found to be controlled by the chemical properties of the ingredients and in which certain defects in flavor and palatability are now known to be the result of definite chemical reactions or processes. For instance so-called sandy ice cream is due merely to the crystallization of milk sugar when the concentration of milk constituents other than fat in the mix is too great for the amount of water present.

Controlling Sweet Cream Butter

One of the most outstanding examples of what direct chemical control has accomplished in the dairy industry is in the development of sweet cream butter. In recent years we have seen a marked trend away from the sharp, clean-flavored sour cream type of butter, the control of which was chiefly bacteriological, towards a non-acid, mild flavored product. To accomplish this has required not only careful sanitary control of the milk and the cream made from it but also a definite limitation on the maximum acidity per-

missible in the cream before it is pasteurized, cooled and churned into butter. Today certain large, well organized creameries are able to market their product at a premium price in large part because of this chemical control.

Butter is the most important of the various dairy products in this country. It still presents some of the most interesting and intricate chemical problems that engage the attention of research workers. The synthesis and secretion of butter fat by the cow and its chemical structure are still imperfectly understood and the actual formation of butter from cream is explained differently by different schools of thought, although the mechanics of making good butter is now almost a fine art. The question of keeping quality is still one of the big problems, calling for thoroughly trained chemists. Nevertheless advances in the butter industry based upon chemical studies occur frequently. A revolutionary advance in the construction of a commercial butter churn was announced recently. This churn is constructed of an aluminum alloy and is the result of painstaking research on the relation between the chemical composition and physical condition of metal surfaces and their ability to resist the adhesion of butter. Butter must not stick to the inside surface of a successful all-metal churn. Before the final choice of material was made fifty-one metals and alloys were tested for adhesion to butter, for corrosion and for their effect on butter flavor.

Cheese Making and Chemistry

The cheese industry also presents important examples of chemical control. In the case of the various natural cheeses the manufacturer exercises a conscious chemical control only in the early stages up to setting aside the so-called green cheese to ripen. The clotting of the milk is a physical-chemical process caused by the addition of rennet and the contraction of the clot with the expelling of the whey is controlled largely by the amount of acidity which is permitted to develop.

The ripening of cheese is mostly chemical but the reactions are believed to be controlled chiefly by the activity of bacteria and molds which are more or less characteristic of each kind of cheese. The most favorable conditions for ripening have been established in many cases through chemical studies. Very definite chemical control is practiced in the production of processed cheese and cheese spreads in order to produce the desired smooth plastic mass. This is brought about by the addition of certain chemical salts which exert a dispersing action upon the rather tough or crumbly particles of cheese during the heating and mechanical operations employed.

Time will not permit a discussion of other very interesting chemical controls exercised in other branches of the dairy industry, such as in the manufacture of evaporated milk or in the production of casein from which numerous industrial products are made, such as paper sizing, paints, glues and many substitutes for ivory, horn, pearl, and the like. New and useful products are constantly being developed from milk as the result of fundamental chemical research. Mention may be made of a new, more soluble and sweeter form of milk sugar and of a highly nutritious protein food from milk whey, which will no doubt find wide use in infant feeding.

I cannot close this talk without calling attention to the debt which the dairy industry owes to biochemistry for discovering the reasons for the high nutritive value of milk and dairy products and thus demonstrating the importance of the industry for the health and well-being of mankind. Experiments have shown how cows should be fed to maintain the highest possible nutritive value of the milk. Other researches have shown the manufacturer of dairy products the best way to preserve the inherent nutritive value of these foods. At present research is demonstrating how the dairy cow herself may be surpassed through the addition to milk of certain food elements which she has only a limited capacity for imparting to it. In my opinion the future success of the dairy industry will depend in part upon its ability to realize to the fullest extent the opportunities pointed out by these various fundamental studies.

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Critic Defends The Ideal World Seen by Shelley

In line with its policy of publishing from time to time striking passages from the works of great thinkers and writers, *Minnesota Chats* in this issue is reprinting the following excerpt from the writings of the late George Santayana, the internationally known philosopher and teacher. The passage is taken from his critical essay, "Shelley," in his book, "Winds of Doctrine."

IF YOU are seriously interested only in what belongs to earth you will not be seriously interested in Shelley. Literature, according to Matthew Arnold, should be criticism of life, and Shelley did not criticize life; so that his poetry had no solidity. But is life, we may ask, the same thing as the circumstances of life on earth? Is the spirit of life, that marks and judges those circumstances, itself nothing? Music is surely no description of the circumstances of life; yet it is relevant to life unmistakably, for it stimulates by means of a torrent of abstract movements and images the formal and emotional possibilities of living which lie in the spirit. By so doing music becomes a part of life, a congruous addition, a parallel life, as it were, to the vulgar one. I see no reason, in the analogies of the natural world, for supposing that the circumstances of human life are the only circumstances in which the spirit of life can disport itself.

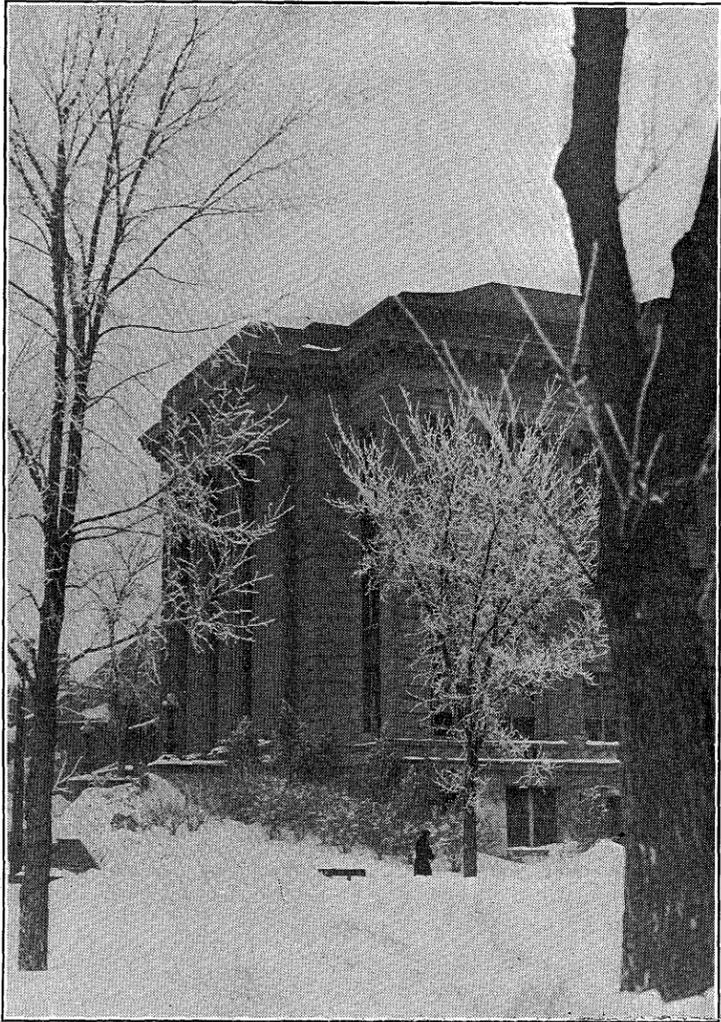
Even on this planet, there are sea-animals and air-animals, ephemeral beings and self-centered beings, as well as persons who can grow as old as Matthew Arnold, and be as fond as he was of classifying other people. And beyond this planet, and in the interstices of what our limited senses can perceive, there are probably many forms of life not criticized in any of the books which Matthew Arnold said we should read in order to know the best that has been thought and said in the world. The future, too, even among men, may contain, as Shelley puts it, many "arts, though unimagined, yet to be."

The divination of poets cannot, of course, be expected to reveal any of these hidden regions as they actually exist or will exist; but what would be the advantage of revealing them? It could only be what the advantage of criticizing human life would be also, to improve subsequent life indirectly by turning it towards attainable goods, and is it not as important a thing to improve life directly and in the present, if one has the gift, by enriching rather than criticizing it? Besides, there is need of fixing the ideal by which criticism is to be guided. If you have no image of happiness or beauty or perfect goodness before you, how are you to judge what portions of life are important, and what rendering of them is appropriate?

Being a singer inwardly inspired, Shelley could picture the ideal goals of life, the ultimate joys of experience, better than a discursive critic or observer could have done. The circumstances of life are only the bases or instruments of life: the fruition of life is not in retrospect, not in description of the instruments, but in expression of the spirit itself, to which those instruments may prove useful; as music is not a criticism of violins, but a playing upon them. This expression need not resemble its ground. Experience is diversified by colors that are not produced by colors, sounds that are not conditioned by sounds, names that are not symbols for other names, fixed ideal objects that stand for ever-changing material processes. The mind is fundamentally lyrical, inventive, redundant. Its visions are its own offspring, hatched in the warmth of some favorable cosmic gale. The ambient weather may

(Continued on page 2, column 4)

Winter Etches Campus Scenes



The fortuitous beauty of Nature is etched in this picture against man's artistic re-creation of classical design in the entrance to the Administration Building at the University of Minnesota. 'Rime' is the special name the weather scientists have for the peculiarly beautiful frost formations that were to be seen on February 1. (Photo by T. E. Steward).

Recapitulation of Body's History Shows Evolution's Course in Man

Embryo Stage Suggests Relations to Early Life Forms Otherwise Quite Untraceable

How the human, in passing from embryo to adult "recapitulates" or traces again the evolutionary stages through which science assumes man to have passed in his progression from the simple life forms of incalculable ages ago is told in an article in "The Scientific Monthly," by Professor Wilson D. Wallis of the department of anthropology. With his permission, *Minnesota Chats* hereby reproduces a part of Dr. Wallis's paper:

"The course of embryological development suggests, in broad outline, the ancestry of the individual. The tendency on the part of the individual organism to pass through ancestral evolutionary stages is called recapitulation. The individual rapidly climbs the tree of ascent, repeating in his development the stages through which his ancestors have passed. Several traits of unsophisticated prenatal development suggest brief adherence to ancestral type.

"The early embryonic structure of man is as undifferentiated as the structure of the amoeba. Later the individual exhibits the bilateral symmetry that characterizes the vertebrates, but for some time is a non-vertebrate animal, little differentiated in structure, with no complexity of parts. After the appearance of the vertebral column or of cartilaginous centers which will develop into the vertebral column, there is a further differentiation of parts. Gradually the prenatal structure takes on the characteristics of a vertebrate mammal. There develop the so-called gill-slits, which are interpreted as corresponding with the gill-slits in fishes. These appear not merely

in man but in the embryonic stages of reptiles, birds and all mammals. One pair of them develops into the Eustachian tubes, so that later they actually do perform a function.

"The so-called milk lines along the chest of the embryo suggest a record of a time when man's ancestors, or at least ancestresses, had more than the single pair of nipples which characterizes our contemporaries. During prenatal life the nipple is much higher than it is on the contemporary adult; though a comparably high nipple is found normally on adult apes and other Primates. In the wrist of the embryo there appears a carpal element known as the 'os centrale'; this disappears before birth, but in some of the anthropoid apes (the orang and the gibbon) and in many of the lower vertebrates it persists through life. The young embryo has from 7 to 9 vertebrae in the caudal (tail) region, whereas adult man, tailless, has only 3, 4 or 5 coccygeal vertebrae. In a human embryo of 7.5 mm. crown-rump length, the percentage of length of tail is 16 per cent of this dimension, whereas in adult man the length of these vertebrae is only about 3.5 per cent of this dimension (sitting-height). The orang-utan, however, has only 2 or 3 coccygeal vertebrae—less than the average in man.

"The position of the phrenic nerve, which innervates the diaphragm, is interpreted as a survival from early ancestral stages. This nerve, as in the fishes, rises high in the neck. In the fishes the gills and heart are close together, under the mouth. As the gills changed to lungs, and an airtight compartment was provided for them, they moved downward, the diaphragm preceding them. But, as a matter of the most exquisite

(Continued on page 3, column 5)

'U' Enrollment Stays Far Over 1934 Figures

Collegiate enrollment at the University of Minnesota is more than 1,000 higher than it was a year ago at this time, and an enumeration of those being served in classes of every type, including the extension division and the schools of agriculture, shows an increase of 2,624 according to figures reported to President Coffman by R. M. West, the registrar.

Collegiate enrollment on January 26th was 11,873, as against 10,855 on January 26th, 1934. The total number of students being served was given as 19,784, compared with 17,142 a year ago.

President Coffman said that enrollment in the College of Science, Literature and the Arts is up about 500 and that in the General College up 225. This year there has also been a lower than normal decline of registration between the fall peak of attendance and midwinter. The fall peak was 12,062 in collegiate enrollment, which has fallen only to 11,873.

Machine Age Art Has Individuality, League Declares

The modern machine age is developing a form of art all its own, a form based on streamline and simplicity that is far more beautiful than many of our former concepts of art, Walter Dorman Teague, famous industrial designer, told a student audience at the University of Minnesota recently. "We are living in a thrilling age of streamline and simplicity," Mr. Teague told his audience, "and we are slowly emerging from a 150 year period of extraordinarily bad taste and artistic turmoil."

Although people usually think of art in terms of painting, architecture, music, drama, poetry and sculpture it is unhealthy to restrict one's conception of art, Mr. Teague believes. Anything that is made is a work of art and the difference lies in whether it is good or bad art, according to his definition.

"We are now in the primitive stage of a new modern art, comparable to the fifth century of Grecian art. From now on we can expect a growth of graciousness, sophistication and charm in our art," he said.

"Standards of art never change—we must compare our art with that of the Romans, the Greeks and the ancients. The aims of the designer never change, either. A good designer never seeks to create anything beautiful but merely to find the right form for the thing he is composing."

Mr. Teague traced the evolution of the automobile from the days when it was truly a "horseless carriage." Illustrating his lecture with slides he traced its evolution down to the modern streamline affairs. Many of the models for the present streamline car were designed by him at least two years before they appeared.

The modern airplane, the skyscraper, the present day styles of interior decorating and even clothing are examples of the modern art. The keynote in all these things is a simplification touching almost on severity.

Speaking of modern standards of feminine beauty, Mr. Teague said, "I have never seen a truly beautiful motion picture actress in Hollywood. All of them have some salient feature which is emphasized such as eyes, nose, or mouth. Present day actresses are striking rather than beautiful judging by the accepted standard of feminine beauty."

After 18 years of outstanding work as an advertising artist, Mr. Teague shifted, in 1926 to the field of industrial designing. He and Norman Bel Geddes have since pioneered in that work.

Story of Early Forestry Told By Dr. Schmitz

Denuding of Forest Areas
Was a Problem as Long
Ago as Biblical Times

KEY TO WOODEN SHIPS

Early American Colonists
Drew Much Income from
Forest Industries

Much interesting light was cast on the importance of forestry down through the long ages of mankind's civilizations in the second lecture of this winter's Sigma Xi series in Northrop Auditorium when Dr. Henry Schmitz, head of the division of forestry, spoke on "Forests and Human Welfare."

There is an old story, he said, that the great poet Karl von Schiller while on a holiday in the forests of Thuringia chanced upon several foresters. The work of these men was new to him and he engaged them in conversation, at the end of which he said: "I had considered you foresters as common people whose deeds did not extend beyond the deathly stillness of the forest. But you are unusual: you work unknown, uncompensated, free from the tyranny of egotism; and the fruits of your quiet work ripens for late posterity."

My purpose in quoting this brief passage from Schiller is not to attempt to dignify the profession in which I have the good fortune to be engaged, but only because it illustrates the rather general lack-of-knowledge which exists even today concerning the influence of the forest and other natural resources on the social and economic development of all of the more important nations of the earth.

The statement is often made that the forest was undoubtedly the earliest home of mankind. Plausible though this statement may seem, and despite its frequent repetition by many early writers, it appears to be based upon false biological and historical premises.

The deep virgin forest, as every experienced woodsman knows, furnishes little animal or vegetable food, except upon the margin of the forest where grasses and shrubs occur. Furthermore, historical evidence indicates that primeval man did not live in, although perhaps near, forests.

Although there appears to be considerable diversity of opinion among anthropologists, man did not make his home in the forest until about 15,000 years ago. This period in human progress has been called the forest or transition period, and it followed the so-called steppe period and preceded the age of cultivation or modern period.

Man Always Used Wood
Before leaving the subject of primitive man's relation to the forest, I should like to say just a word concerning the probable use of wood by early man. We have fallen into the habit of thinking that stone was the principal material used by man during the Neolithic Age, bronze during the Bronze Age and iron during the Iron Age. Although no one recognizes more fully than I my lack of qualifications for expressing an opinion on this subject, such a concept appears both irrational and unreasonable. Wood is, and probably always has been, the most available and useful of structural materials. Even in the hands of primitive man, with the crude implements at his disposal, wood could be converted into useful artifacts with comparative ease. Exposed to ordinary conditions, however, wooden artifacts quickly disintegrate; consequently no clear record is left concerning how extensively wood was used by primitive man.

It is definitely known, however, that wood was extensively used (Continued on page 3, column 1)

Garver Speaks on the New Deal And the Teaching of Economics

Believes Teachers Will Have to Wait to See What Emerges Before Amending Lectures

"The term 'New Deal' may be interpreted in a number of ways. To some it means the attempts of the national government to hasten recovery by stimulating industrial activity. This aspect of the present policy in Washington does not, I think, concern the teaching of economics at the present time," said Dr. F. B. Garver in a paper read to the American Economic Association. "It is frankly experimental and tentative. Its results have not yet fully appeared. Some of the partial or immediate effects are held by critics to be undesirable. The purely investigatory phases of these temporary measures are doubtless excellent topics for trained researchers to rack their brains about but they are not topics which lend themselves to classroom exposition as yet.

"The 'New Deal' is also said to include a long-time program, the objects of which are, among other things, the prevention or amelioration of depressions, the prevention of undue expansion of certain industries, and the encouragement of others, the protection of the investor, the regulation of competition in businesses where it is said to have a tendency to become destructive, and a different allotment of the national income among different economic groups and among different income classes. It is this aspect—the long-time or fundamental change side of the 'New Deal' that may have an effect on the teaching of economics in colleges and universities.

"The question is, therefore, 'How will the more fundamental 'New Deal' affect the teaching of economics in universities?' Obviously if the present policy in Washington shall be overthrown in 1936 or 1940, or if the party now in power modifies its position before going very far with its proposed policy, then the 'New Deal' will pass into the limbo of earlier slogans such as free-silver, anti-imperialism, and greenbackism that have enlivened otherwise issueless political campaigns. If one inclines to the view, therefore, that when a modicum of prosperity returns, proposals for the redress of present economic grievances will be forgotten, he will properly conclude that the college teacher had better use the proposals presumably embodied in the New Deal solely for the purpose of adding some spice to otherwise rather flat recitations on the concept of an equilibrium price and the like.

"If, on the other hand, one forecasts a continuation or an enlargement of the scope of governmental activity, if he believes that in the future, force is to modify the working—or muddling if you prefer—of limited individualism which we have had in the past, then he must consider the effect that such a social system should have on the teaching of economics.

Beware of Propaganda
"One type of effect should be guarded against: the use of the classroom for purposes of propaganda in favor of any particular social order. That way lies the decay of scientific study.

"Let it be supposed, however, that the teacher of economics does what he is commonly supposed to do, namely, tries to acquaint his students with the important facts of economic life and with the relationships that exist between those facts. How will a policy of state interventionism affect teaching? Obviously, only those relationships between facts that have already been discovered can be taught, and there is nothing in a governmental policy, or change of policy, that of itself brings to light new relationships. Such relationships can only emerge from reflective thinking. Lest I be misunderstood, let me hasten to say that new principles can be and are formulated by research workers in government service. In economics this has sometimes happened. But the teachable principle never emerges from the governmental policy. One need only cite the tortuous history of tariff legislation to illustrate the point. The activities of government that may in the future grow out of the 'New Deal' will provide many facts. But it remains to be seen whether any new principles can be

discovered by putting the new facts together.

An Illustrative Example
"An illustration will make the point clear. There are certain economic principles applicable to the management of the electric light and power industry. On the production side the phenomenon of overhead cost and economy of distribution are very important. Now one particular 'hand' in the New Deal is the multiplication of government-owned electric plants. The reason for this movement is clear. Regulation under the fair value rule has proved a weak thing. It has been an inadequate safeguard against the exercise of monopoly power by the privately owned and managed corporations. Now regulation is to be supplemented by the comparison of rates charged by public and private plants.

"But suppose that we should come to a situation such as existed a few years ago in several foreign countries. There, about half or a little more of the current was sold by public concerns and the remainder by private concerns. Just what would we learn from such a situation? Some new facts would probably emerge. It would doubtless be partially demonstrated whether in the United States publicly owned plants can be kept free from political interference when they are operated on a large scale. We should also learn whether they will become a means of taxation as they have become in certain parts of Europe. But unless our experience is different from that of Europe no new principles, no new relationships between economic facts will emerge.

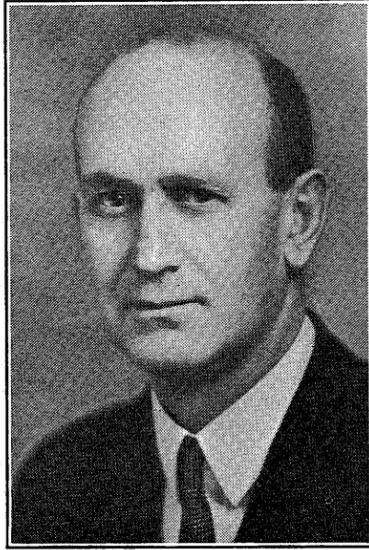
"An overhead cost is an overhead cost no matter who owns the plant or what the sales policy of the manager. Public ownership in England and Switzerland has not brought out any new principles, so far as one can discover from the reports of the authorities, or from conversation with engineers and statisticians in those countries. Neither, I judge, will government interference with the prices of agricultural products necessarily give rise to the discovery of any new relationships between demand and supply, cost and price, or rent and price. In other types of interference new principles may be discovered. Time alone will tell.

"It may be argued that when the government has greatly expanded its functions the teacher of economics will have to see that his students learn how the authorities operate. This is in line with democratic ideals. The student should be trained to be a good citizen, to understand what the government is doing, to consider its acts dispassionately and without regard for his private interest, to arrive at an objective conclusion and to vote accordingly. A fairly long experience in the classroom leads me to believe that this ideal is not possible of realization. The average intelligent layman has, so far as I can discover, never interested himself sufficiently in government and probably never will. In times of prosperity he regards with mild hostility anyone who proposes change and in times of adversity he strikes blindly anyone or everyone against whom his emotions have been aroused. The hope of an intelligent policy of interventionism seems to inhere in a well-trained, highly disinterested bureaucracy, supported either by skillful politicians in a democracy or by a powerful autocracy.

Need Better Civil Service
"There is still another phase of relationship of the 'New Deal' to the teaching of economics. If state interventionism is to increase we shall have to have a better civil service than we now have. Without any doubt we find today in that service many men of high competence who serve the public with disinterested zeal. But, on the whole, the service is not on a par with the best private research and executive staffs. It is said to be inferior to that of England and that of pre-war Germany. We usually elect public utility commissioners, and even if they are appointed, they come too frequently to their responsible positions with almost no experience in the administration of utility regulation.

"Here again is a task for the university, namely, to train the men and women who shall administer the activities of the state. In many phases of interventionism economics will play a role and the

Seeks Physical "I Q" Test Data



Professor L. F. Keller

administrators should be well grounded in statistics, accounting, economic history, and not least, in economic theory.

Do We Know What to Do?
"Finally, it will be admitted, I believe, that we do not as yet know enough about economic mass action to carry state interventionism very far. Suppose we wish to modify the distribution of incomes. What data have we to go upon? The answer is a few estimates made by foundations and recently by the national government. Very few would contend that these estimates are as accurate as they should be. Again, by what method can redistribution be attempted so as to cause the most direct economical results? Principles, laws or relationships on which such a policy should rest are very meagre. So too in production. What is actually known about the relationship of price changes to production changes? Something in general and a great deal in respect to some agricultural products considered in isolation. But after all, the principles of production as we now have them, are feeble weapons with which to attack the huge problem of operating a planned economy. We need more facts and more reflective thinking about those facts. This is not perhaps obviously related to the teaching of economics. But actually it is very closely related. If we are to have interventionism the teaching of economics which the expert, the potential administrator will need is a more elaborate 'principles of economics'."

Dr. Dora V. Smith, associate professor of education at the University of Minnesota, has been granted a leave of absence from the University for the spring quarter of this year.

N. W. Said to Know Its Economics

That residents of the northwest appear to be more interested in economics than those in most sections was stated in Minneapolis recently by Neil Carothers, dean of the School of Business at Lehigh University. He said that letters he received from people in this district commenting on his writings gave him this impression.

"This is probably due to the impetus given this though by men in your university, like Alvin H. Hansen and Roy Blakey," Dean Carothers said.

He spoke in Minneapolis before the Woman's club.

Critic Defends Ideal World

(Continued from page 1, column 1)
vary, and these visions be scattered; but the ideal world they pictured may some day be revealed again to some other poet similarly inspired; the possibility of restoring it, or something like it, is perpetual. It is precisely because Shelley's sense for things is so fluid, so illusive, that it opens to us emotionally what is a serious scientific probability; namely, that human life is not all life, nor the landscape of earth the only admired landscape in the universe; that the ancients who believed in gods and spirits were nearer the virtual truth (however anthropomorphically they may have expressed themselves) than any philosophy or religion that makes human affairs the center and aim of the world. Such moral imagination is to be gained by sinking into oneself, rather than by observing remote happenings, because it is at its heart, not at its finger-tips, that the human soul touches matter, and is akin to whatever other centers of life may people the infinite.

For this reason the masters of spontaneity, the prophets, the inspired poets, the saints, the mystics, the musicians are welcome and most appealing companions. In their simplicity and abstraction from the world they come very near the heart. They say little and help much. They do not picture life, but have life, and give it. So we may say, I think, of Shelley's magic universe what he said of Greece: if it

"Must be
A wreck, yet shall its fragments re-assemble,
And build themselves again impregnable
In a diviner clime,
To Amphion music, on some cape sublime
Which frowns above the idle foam of time."

S. I. Aronovsky, who since 1927 has held the Cloquet Wood Products fellowship in the division of agricultural biochemistry, left recently for Appleton, Wis.

Keller Seeks Tests to Reveal Athletic "I. Q.'s"

Hopes Soon to Finish Work Begun During Year's Leave for Study

Physical tests which he hopes will show a student's ability in athletics and games as clearly as the so-called intelligence tests show "college ability" are being devised at the University of Minnesota by L. F. Keller, associate professor of physical education.

Mr. Keller, who spent a year's leave pursuing research studies at New York University in 1933-34, is at present conducting experiments to determine the best methods of testing for this classification.

He did some research in this field while on leave and now is doing further work on it with the help of J. E. Curtis of University high school and seniors in the department of physical education. A room has been set aside for this project in the new athletic building recently opened at Minnesota. Mr. Curtis is conducting experiments with boys in University junior and senior high school.

These tests would be distinct, of course, from the physical examinations given by the student health service. The aim of the experiment is to work out a series of "battery" tests that will enable the department of physical education to find out the physical status of an entering freshman and to prescribe the amount and kind of physical training he should have.

Further tests to measure the degree of advancement from the prescribed training also are being sought. These comprehensive tests will include knowledge of sports, technique in sports, and physical ability plus a complete physical examination.

After the series of tests the students would be classified, according to Mr. Keller as to their ability and then grouped in such a way that in various sports and games only boys of like ability will be competing against each other.

Under the ideal setup students whose tests showed them to possess marked physical ability would not be required to take as much physical education work as others less gifted or might even be excused. The amount and kind of physical education taken would be prescribed according to the examination given at the time of the student's entrance to Minnesota.

This step is in keeping with the general trend in physical education throughout the country in an effort to keep in stride with the advancement in general education, according to Mr. Keller.

Another innovation that is being considered by the department of physical education at Minnesota is a "sports appreciation" class, or, a class in athletic orientation.

This course would be open to any students who wished to take it and would consist of lectures and demonstrations on the theory and practise of sports in season with lectures by members of the coaching staff. While such sports as football, basketball, baseball and other intercollegiate games would be taken up, the emphasis would be placed on the type of "carry over" sport of recreational value in after life.

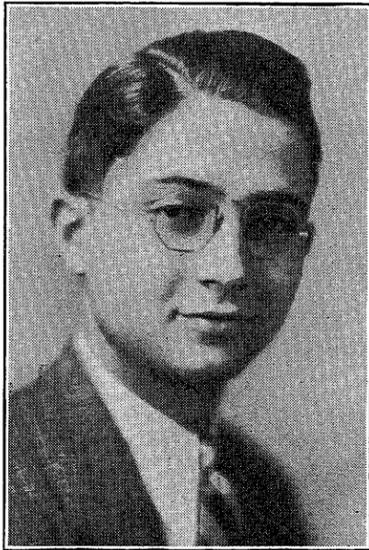
In football, for instance, lectures by Bernie Bierman, or other members of the football staff, would be given, moving pictures shown and the various points of technique explained. In golf, tennis, and sports of a more recreational nature the same procedure would be followed, all with the general idea of creating a desire for an appreciation of healthful activity.

State Medical Talks for March

Dr. W. A. O'Brien of the University of Minnesota will continue in March his weekly broadcasts on behalf of the Minnesota State Medical Association, speaking at 10:30 a. m. Tuesdays over WCCO. His topics will be: March 5, Neurocirculatory asthenia; 12th, electric shock; 19th, agranulocytosis; 26th, children's dentistry.

"Scholarship in Guidance" was the title of an article by Dr. Earl R. Douglass of the College of Education, University of Minnesota, appearing in a recent issue of "School and Society."

Yearbook Honors Minnesota Debaters



Arnold Baron

A debate prepared by University of Minnesota debaters under the direction of Franklin H. Knower, director of debating, has been published in the current volume of "The Yearbook of College Debating." Manuscripts are sought from all parts of the country and are judged competitively. The Minnesota debate that has been selected was on the subject, "Resolved that the essential features of the Agricultural Adjustment



Jerome Kaufman

Act should be made permanent." Minnesota debated this proposition with a team from Iowa State College, at Ames. The debate was prepared by Arnold Baron, a freshman law student, and Jerome Kaufman, who will be graduated from the College of Science, Literature and the Arts in June, having completed the course in three years. Baron comes from Sioux City, Iowa, while Kaufman's home is in Minneapolis.

Story of Early Forestry Told

By Dr. Schmitz

(Continued from page 1, column 5) at a very early state in man's development. The Swiss Lake Dwellers not only built their homes on wooden platforms set on wooden piles, but also used wood extensively in their implements, utensils and ornaments. Furthermore, is there not more wood used in making a spear or an arrow than there is stone or bronze, and who can say whether it requires greater skill to shape from wood the shaft of an arrow or a spear, that it may fly straight to the mark, than it does to chip a point of flint or hammer one of bronze or copper? Is it not possible that the use and importance of wood by primeval man was more extensive than is commonly supposed, because of its relative lack of durability under conditions of exposure?

Coming down to more recent times, the record becomes clearer. The fact that the forest played an important part in the general economy of civilized peoples and races is recorded even in the earliest writings. The early Roman writers, as well as the early Greek writers, discussed tree culture in considerable detail in connection with agriculture.

It is of interest to consider for a moment the characteristics of some of the forest problems confronting the ancients. Even a cursory survey of these problems suffices to show the similarity of these problems to those we are struggling with in America today.

Ancients Visited Forests
It now seems fairly well established that by the 11th century B. C. the forests, especially in the neighborhood of large cities, in Palestine, Asia Minor and Greece, had been largely destroyed, and it was necessary to transport timber for the temples of Tyre and Sidon from Mount Lebanon, thus greatly increasing the cost and difficulty of erecting these structures.

Several centuries later the forests on Mount Lebanon were largely destroyed. This is indicated by the fact that in about the year 465 B. C. Artaxerxes I attempted to regulate the cutting of timber in that region. Nevertheless forest destruction undoubtedly continued, because Alexander the Great found the south slope at least almost woodless in 333 B. C.

The Bible, too, alludes to the serious consequences of forest exploitation and fire. The Prophet Isaiah deprecates the destruction by axe and fire of the celebrated forests of Sharon, Carmel and Bashan, and as a result of the destruction he tells us that "The Beasts of the fields cry also unto Thee because fire hath destroyed the green pastures of the wilderness." This is one of the earliest allusions to the consequences of forest fires, and if the beasts of the fields can actually "cry," they still have sufficient cause to do so.

There are a few other early references made to extensive forest fires. One of the most interesting of these is recorded by Hanno, a Carthaginian navigator, who in about 520 B. C. sailed along the African Coast as far south as what is now Liberia. South of the Gambia River Hanno's crew became panic stricken because the sky was red with flames of forest fires. For days Hanno sailed on and the coast country was one blaze of fire from the burning forest. It appears fairly probable that extensive forest fires have occurred ever since, if not before, man learned the art of making fire.

Wood for Ships an Influence
Since remote antiquity, ships have profoundly affected the course and progress of civilization. Until comparatively recent times, ships were built largely, if not entirely, of wood. It does not seem strange, therefore, that early Egyptians, the Cretans, Carthaginians, Phoenicians and Romans, all gave no small consideration to the question of an adequate and available supply of timber for ship building purposes. Much later in England, and later still in America, an adequate supply of ship building timbers first stimulated an interest in forest planting and conservation.

Historians tell us that boats were made by riverside and lake-side peoples very early in the Neolithic Age of culture. These boats, to be sure, may not have been much more than the unworked trunks of trees. Later on men devised ways of hollowing out these logs by means of fire and

tools, and thus the canoe was developed. Still later, perhaps as early as 7000 B. C., man learned how to cut logs into boards, and how to fashion such boards into ships. By 1000 B. C., the Egyptians, the Phoenicians, and the Cretans built ships of considerable size, and because of these ships and the trade they made possible the great commercial cities Tyre, Sidon, Carthage, Utica, Troy and others grew and flourished, and largely because of these ships and the warfare they made possible, these cities were destroyed.

The Romans seem to have had an adequate supply of ship timber in the third and second centuries B. C., because they burned with utter abandon the Carthaginian fleet in 203 B. C. and the Syrian fleet in 189 B. C. Nevertheless there are some indications that ship building timber was becoming somewhat scarcer, because when Macedonia became part of the Roman Empire in 167 B. C. the Romans restricted the cutting of ship timber in the then still extensive forests of that country.

England's Early Forests
Many years later England, too, felt the threat to its national security because of an inadequate supply of timber for the maintenance of its navy. Even at the time of the Roman invasion of Britain, the British Isles were for the most part covered with a great stretch of primeval forests. Due to uncontrolled cutting and fire, the great forests of pine and hardwoods were swept away, leaving the mountains bare and denuded much as they are today in Wales and the Scottish Highlands.

From early times, after the departure of the Romans, the forests of England were utilized by the king and his nobles for sport and the chase and by the peasants for grazing. Large tracts of the country were reserved as royal hunting grounds. At first there were forests and land for all; but after the Norman Conquest the area of land available for agriculture was so limited as to cause real hardship on the rural population. William the Conqueror, and several of his descendants, were passionately fond of the chase, and they became so alarmed at the rate forest lands were being deforested that they extended the hunting areas and called them Royal Forests. Henry I, Stephen and Henry II all increased the size and extent of the Royal Forests, until an unbearable situation arose for the rural population. It was during the regency, while Henry III was a boy, that the famous forest charter of 1217 was obtained by the people. This charter was revised and modified in 1225. A clause in this, one of the most famous charters of these times, ran as follows: "No man from henceforth shall lose either life nor members for killing a deer." The penalty instead was imprisonment for one year and a day, or a fine. Edward I liberalized the forest laws still further. Large areas of royal forests were opened up for use by the rural population. There being a demand for agricultural land, the forest was greatly reduced.

Just prior to 1482, the government became very uneasy at the rapid rate at which the forests of the country were disappearing, and consequently in that year passed an act known as the Statute of Enclosure, designed to perpetuate the existing forests. This statute was considerably strengthened in 1543. The watchful care of the parliaments of this period, and their enactments to insure the proper management and protection of British woods were solely due to a recognition that the upkeep of the country's fleet was dependent on the maintenance of a sufficient area of British woods managed on the lines most suitable for the production of the national requirements. In fact, the government realized that the national safety depended upon this margin. A critical period arose during the reign of Henry VIII, who seized upon the church lands in the year 1535. These lands contained fine woods, many of which were cut down by the nobles to whom they were granted by the king.

Destruction in Civil War
A far greater devastation of woods took place during the Civil War. From 1642 onward to the Restoration, fellings were carried out on an enormous scale, whole forests being completely razed to the ground while other large areas were laid waste by fire and wanton destruction. So serious was the damage and so grave the position with reference to timber supplies that within four years after

English Students Win Fellowships



Miss Margaret Boddy (left); Miss Ruth Normann

Mayo Praises Eye as Learning Instrument

Because the brain is built around the eye, more studying should be done with the eye and less with the ear, Dr. Mayo declared at a recent meeting of the Board of Regents.

"We are eye people. We have some chance of really learning by eye, whereas, by the ear method, about all we do is try to remember what we have heard," he said.

Increased laboratory work and trips to view processes discussed in the theory were recommended by Dr. Mayo as the means of increasing actual learning.

"We only learn what we retain," he declared. "And we retain best what we see with our eyes."

Dr. Mayo urged extension of laboratory work and use of visual education in the General College. By visual education, actual processes of nature and industry and the development of experiments, can be shown to the eye, he pointed out.

"If you hear something told, it's too easy to be thinking of something else and pay little or no attention to the matter at hand," Dr. Mayo explained.

Painted Oberhoffer Picture
Minnesota Chats regrets an error in reporting the initials of Nicholas R. Brewer of St. Paul, who painted the picture of the late Emil Oberhoffer given to the Department of Music by Mrs. Oberhoffer. In the last issue the wrong first name was used for that of the artist, who is Nicholas R. Brewer.

the Restoration the matter was brought to public notice by the Council of the newly founded Royal Society, which commissioned one of the charter members of the society to deal with the matter in a memorandum. This member happened to be John Evelyn, an historian of note, a famous diarist, and a forester extraordinary.

In 1674, Evelyn published his still famous book "Sylva" or a "Discourse of Forest Trees and the Propagation of Timber in His Majesty's Dominion." This book, which incidentally was the first official publication of the Royal Society, had a profound direct influence on English forestry and indirect influence on world history.

The action of the Royal Society and its member, Evelyn, aroused the nation and a large amount of planting was undertaken during the next decade. Even in 1678, four years after the publication of "Sylva," Evelyn was able to report to his king that millions of trees had been planted. The results of this crusade were even more interesting. A hundred years later, the fact that there was sufficient timber in the country for the construction of the Royal Navy was publicly acknowledged to be due to the planting undertaken in the reign of Charles II on the initiative of Evelyn and the Royal Society. It is equally certain that most, if not all, of the ships which fought in the battle of Trafalgar, and which previous to this had secured for England the command of the seas, were built of timber planted before the revival period after the publication of Evelyn's "Sylva." Who can say what the course of history might have been had not England had sufficient timber to build and maintain her fleet?

Recapitulation Shows Evolution

(Continued from page 1, column 3) interest, the nerve which innervates the diaphragm, the phrenic, still arises high in the neck, and, traversing the entire chest at great waste, is the string which shows us were the diaphragm was and its pathway of migration during the ages.

"In the human embryo the upper limbs are relatively much longer than in the new-born, and they become relatively shorter in youth and adulthood. The arms of the gibbon on the other hand, are relatively short in prenatal life, and increase in length with growth. In the prenatal period, the arms of the gibbon, in proportion to body length, are, in fact, not much longer than those of the human fetus in proportion to body length.

"Even after birth there are suggestions of recapitulation. The child can not walk until it is several months old. It can, however, go on all fours, that is, be a quadruped, before it can walk on two feet, that is, be a biped. Moreover, in the early stages of its earthly career, it is practically a quadrumanous creature, for its toes and feet are almost as mobile as its fingers and hands. With its toes it can grasp objects with almost the facility with which it can grasp them in its hands. When it learns to walk, the toes are turned in and the child walks largely on the outside of the foot, much as does an anthropoid ape. This inability to walk on two feet is accompanied by a remarkable power of handgrasp. A child two hours old can maintain its weight by overhead handgrasp for about a half minute. At the age of six weeks it can maintain its weight for about two minutes, that is, as long as can the adult who has given no time to the acquisition of this art. In view of the fact that most animals are able at birth, or soon afterward, to walk, crawl, swim or fly, in the manner of progression characteristic of their species, the absence of the ability to walk on two feet, and the corresponding ability to maintain the weight of the body by overhead handgrasp, are very striking. The only explanation seems to be the inheritance of adaptations which are no longer of much use to man, but which were of use to remote ancestors. Man is so conservative of the old, and so tardy in adopting the new, that he requires more than a year of postnatal existence to acquire the upright posture; and when he has acquired it, it is, for a few years, a very uncertain posture.

On the other hand, says this writer, there are a number of respects in which man fails to retrace or recapitulate the development of his primate forbears, if such they be. For, says he, "If man recapitulates an apelike ancestry, he is, in general, rather tardy about it, and does not reach the end of his journey before old age overtakes him." Among the items on this side of the ledger are dentition, the hairy coat, increase of pigmentation after birth, eyebrow ridges, the projecting lower jaw, and other points. In most of these respects man, instead of passing through these developments and out of them finds them showing up late in life, or at least after adolescence, whereas in anthropoid apes these traits are found soon after birth or even during prenatal development.

'U' Will Hear Opera in March
Opera will be sung on the University of Minnesota campus by professional artists for the first time March 13th, 14th and 16th, it has been announced. On those dates the Chicago Opera Company will appear as a number in the season of the Minneapolis Symphony Orchestra. These engagements will be under the same type of agreement between the university and the Minneapolis Orchestral Association as that which governs use of Northrop Memorial Auditorium for the symphony concerts. "Turandot," an opera in Chinese setting by Puccini, will be sung Wednesday night, March 13th. On the evening of the 14th Verdi's "La Traviata" will be sung, while on Friday evening, the 15th, the regular Symphony Orchestra concert will be played. Two operas will be sung Saturday, March 16th. The matinee performance will be Bizet's "Carmen," and that in the evening, "Tosca," by Puccini.

Two Minneapolis young women, both 25 years old and both graduates of the University of Minnesota, are among the 10 winners of fellowships granted by the American Association of University Women for the year 1935-1936. Miss Margaret Pearse Boddy, 1097 University avenue southeast, has been awarded the Dorothy Bridgman Atkinson fellowship of \$1,500; and Miss Ruth A. Normann, 516 University avenue southeast, has won the \$1,000 Anna C. Brackett Memorial fellowship.

Study in London will be included in the fellowship year of both Minnesotans. Miss Boddy is planning to do classical research in the British Museum, while Miss Normann will study the modern educational practices of England and compare them with those in such cities of this country as Minneapolis, Kansas City and Chicago.

This is the first time that a Minneapolis resident has won the annual fellowship, named in honor of Mrs. Frederick G. Atkinson of Minneapolis, who is chairman of the committee on fellowship endowment for the American Association of University Women. This is also the first time for several years that a Minneapolis woman has won any of the fellowship awards of the A. A. U. W., which grants 13 different fellowships, the number varying from year to year because of the fact that some of the grants are biennial and one triennial.

A total of 178 candidates applied for the 10 fellowships this year. News that two of the awards had come to this city brings gratification to University of Minnesota associates of the prospective Fellows as well as to Mrs. Atkinson and other members of the College Women's club, which is the local branch of the American Association of University Women. Mrs. Guy Stanton Ford is the club's chairman of national fellowships, with Mrs. Gunnar H. Nordbye serving as chairman of the committee concerned with the \$500 biennial fellowship which the club gives at the University of Minnesota.

The granting of fellowships to advance women who give promise of outstanding scholarly distinction has been a feature of the practical idealism of the American Association of University Women almost since the date of its founding in 1882 under its first name, the Association of Collegiate Alumnae. The early members of the association, banded together for "practical work in education," perceived that nothing would so effectively speed the recognition of women in the educational field as the demonstration that women could do scholarly work of the first quality. Accordingly, in 1890, a fellowship was established, to give to promising women scholars the opportunity to develop their powers. It is interesting to note that this first fellowship, which provided a year's study abroad, was held by Louisa Holman Richardson, at that time professor of Latin at Carleton college.

From this beginning, the association's fellowship work has steadily advanced, so that now there are 13 A. A. U. W. fellowships. Each year, the number of well-qualified applicants has far outrun the number of awards offered. The organization voted, therefore, in 1927, to raise an endowment fund of \$1,000,000 for fellowships.

MINNESOTA CHATS

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Vaile Describes First NRA Year

Results Were Good in Small Communities; Small in Cities

The hope of a speeding up in the rate of recovery lies in having the United States government decide either to clarify and stabilize the rules of competitive business or choose some other definite alternative, says a report on "Merchandising under the NRA" that has just been published by the University of Minnesota. It is a study of the first year of the recovery program in the central northwest, written by Professor Roland Vaile.

Professor Vaile's report finds that NRA has accomplished relatively little in the large communities of Minnesota. In the small communities, he says, the various government programs have proved an undoubted stimulus, but whether the part of this attributable to NRA can be separated from that due to AAA, CWA and public works is questionable.

Consumption industries, he points out, have acted in this depression as they have in others. Both production and consumption of "consumption goods," things we must have to live, have held up. On the other hand, the permanent goods industries, manufacture of which represents investment in capital goods, have still not responded to the recovery stimulus.

Specifically, he points out three principal results of the first year of NRA in the larger communities.

I. There was little change in the physical volume of merchandise sold after the inception of the recovery program.

II. The number of people employed and the total payrolls (in dollars) increased but it is doubtful whether the increase in payrolls more than equalled the increase in cost of living.

III. The merchandise margin increased. In general, this increase was greater than that in expense, and thus the capital employed in the mercantile business received a larger net return.

Pointing out that the program succeeded in the smaller communities of the state, Professor Vaile says: "On the other hand, the program in its many phases was unsuccessful (first quarter of 1934) in stimulating business activity as measured by the sales and payrolls of mercantile institutions in the Twin Cities. Whether this was merely a delayed reaction in the larger centers or whether it is indicative that the program has been more beneficial to agricultural and semi-agricultural areas than to industrial centers remains to be seen."

Stout Produces New Car

William (Bill) Stout, famous university of Minnesota graduate, who was head of the airplane division of the Ford Motor Company before it was discontinued, has recently appeared with a startling innovation in the motor world. His new car, the Scarab, of which he has built only an experimental number, has the power at the rear. Inside it is arranged like a compartment, with movable chairs, a desk and a couch along one side.

Dr. Douglass Writes on Education

"Three Hundred Years of Method" was the title of a paper prepared by Dr. Earl R. Douglass, professor of secondary education of the University, for the Tercentenary Program of the Department of Secondary School Principals held in Atlantic City February 24 to 27, in commemoration of the founding of the first secondary school in the United States at Boston in 1635. Dr. Douglass also organized and was chairman of a forum discussion on the "Teaching Load."

Minnesota Etcher Played on Violin For Muscle Control

Levon West, former University of Minnesota student, now one of the country's foremost masters of the art of etching, demonstrated the principles of his art before an assembled group of university students during a recent visit to the campus.

Working rapidly Mr. West made a replica of one of his famous etchings, explaining each step of the process from the polishing of the copper plate through the printing and finishing of the picture.

"Etching is the art of the line," he told his audience, "there are no broad brush strokes as in painting. I feel that the lines of an etching should be open, free and suggestive so that when one looks at a picture it stirs the imagination."

Tracing the history of etching from the days of the feudal warriors some 500 years ago, Mr. West told how the knights of old often had their coats of arms etched on their armor and weapons. Many of the designs were quite artistic and this gave rise to their use as pictures also. The etching was first done on iron until someone found that copper was more receptive.

Mr. West, whose studio is in New York, told of his efforts to develop himself in his art. He took up the study of the violin for a year to strengthen the muscles of his forearm and wrist in order to make his hand more firm. Bowling a violin, he said, has helped considerably.

At present Mr. West is on his way to the Rocky Mountains in search of bear and mountain lions. He will both hunt and make sketches of wild life in the Rockies. He has traveled as far North as Hudson Bay, remaining there for weeks at a time in search of material. Often he has watched and observed for weeks at a time before making even a sketch of the subject which he is about to use.

Mr. West entered Minnesota in 1919. He spent four years at the university on a scholarship award and during his first two years he worked on the Minnesota Daily, student paper, and did cartoons for Ski-U-Mah, student publication. His last two years were spent working for commercial firms part time.

Leaving Minnesota he went to New York to study under Joseph Pennell, who had received much of his early training from Whistler. Mr. West's studies took him to Spain and later to Geneva, Switzerland, as official artist for the world peace congress.

He returned to New York at the time of Colonel Lindbergh's historic flight and being himself an experienced flier, he etched his reactions to the flight. These plates placed him before the general public for the first time.

Mr. West never has lost touch with Minnesota and every Thanksgiving Day his studio is the scene of a gathering of alumni, faculty, and former students now located in New York.

Write on Elementary Schools

The 1935 yearbook of the National Society for the Study of Education, which is on the general subject of Diagnosis of Difficulties in Learning in the Elementary School, contains contributions by four Minnesotans. Dr. L. J. Brueckner, of the University of Minnesota, chairman of the Yearbook Committee, prepared the section on diagnosis of difficulties in arithmetic. Dr. E. B. Wesley, also of the College of Education of the university, for the social studies, and Dr. Dora V. Smith, of the university, for the teaching of English. Dr. John G. Rockwell, commissioner of education, contributed the chapter on learning difficulties of a general nature.

Expectations for Agriculture in 1935

The following paper is made up of excerpts from an address delivered by Walter C. Coffey, dean and director of the Department of Agriculture at the opening session of Farmers and Homemakers Week at University Farm, January 15, 1935.

It gives me great pleasure again to welcome the Minnesota Farm Bureau to University Farm, to have a part in our annual Farmers and Homemakers Short Course, and to talk with us about the outlook for another year. I see among those who have come here for our short course and for this meeting signs of cheerfulness and of confidence in the future; of ability to carry on through another year with success, in the belief that recovery is on the way; in the belief that, however slow our progress may seem, we are on the up-grade. And that is most encouraging.

It is a satisfaction, also, to know that there is substantial ground for our confidence in the future. The farm families of the United States had in 1934 more than one billion dollars more cash income than in 1933. And this was due chiefly to a rise in prices of farm products, though, of course, a part of the increase came from adjustment payments for reduced production. Minnesota's gross cash income from farms increased about 19 per cent, seven per cent coming from benefit payments. The rise in prices, however, was encouraging. Unfortunately, the gross income was unevenly spread because of the great drought. Nevertheless, there was a little more money for our labor, a little more for spending for the things we need, and, certainly there was more hope for the immediate future.

It was again, a matter of much encouragement that we saw the price relationships among several important groups of commodities moving into better balance. Agricultural products advanced more, relatively, in price than did non-agricultural products. The shift may not have been enough to put us on the parity level for which we are striving, but it was a distinct advance, and there is the prospect of a still further advance in 1935.

It is scarcely necessary to say that the drought situation in certain sections has been acute. It is the result of an accumulated shortage of rainfall for several years, and the outcome has been a shortage of both cash and feed crops in a number of counties. Livestock has been so reduced in such counties that farmers will not be able to carry on as usual even if crop-growing conditions should be normal this year. Moreover, pastures, meadows, and hayfields have been destroyed or badly damaged, and farmers face a heavy task in attempting to restore them. Nevertheless, even with seed supplies for pasture and hay crops short, farmers are bracing themselves for the fight and making preparations for emergency forage crops to carry them through the next two years—until they get back to normal production again. The seed problem for the coming season is, of course, serious. All farm seeds, with the possible exception of corn, are short, and the farmer in looking forward to the 1935 growing season, should lose no time in providing for a seed supply. The legislature is considering the financing of seed loans, and that may bring at least partial relief and assistance.

In spite of the difficulties of the situation, therefore, we may take comfort in the thought that there is a way out if conditions become normal, and that Minnesota has great recuperative powers when growing conditions are favorable.

On the whole, then, American agriculture is apparently on the road to recovery. It is too much to say, though, that recovery is an accomplished fact. Even if we attain a full price parity, that alone will not bring full recovery, particularly if it is attained at the cost of a part of our potential consuming power. Agricultural prosperity is dependent on consumers—on consumers with ability to buy, up to a high standard of living. Thus farmers have a great stake in the gainful employment of millions in the industries. But there has been some improvement in that direction through 1934, and that improvement is expected to continue in 1935. This improvement is said to be due partly to expansion in industrial output; partly, to increase in wages. Ap-

parently there will be still further increases in industrial output this year. The President's urgent support of a large and useful public works program should have a beneficial effect on the demand for agricultural products. Farmers have a stake, also, in the building up of international trade, without tearing down or crippling major agricultural or industrial enterprises here at home. Just now, however, prospects for progress in that direction are not particularly encouraging.

We have been making progress, and will make still more in 1935, in the matter of intelligent land use. At last there has come an awakening to the social and economic folly of trying to farm on land which because of low yielding power or unfavorable location is not suitable for farming. We are beginning to realize that there is more than one logical use for lands, once the forests are cut off. I predict that in 1935 we shall become more reconciled to the idea of land-zoning, which involves the closing of lands of low-producing power to agricultural settlement. A program to retire 450,000 farms in the United States in the next 15 years at a cost of \$675,000,000 has been recommended to the federal government. We of Minnesota with our millions of acres of cut-over and abandoned land have a vital interest in such a program. It involves land-zoning such as I have already mentioned.

Coincident with the movement toward intelligent land use, is another—the control of soil erosion. The soil is our greatest national asset, but only lately has the nation given concrete evidence of a realization of this fact. Now we are aroused, and we are engaged in a concerted and determined effort not to allow our soil to be washed or blown away.

But soil can be lost by other means than wind and water. Low income, high interest rates and high taxes just as surely as wind and water will impoverish the soil in time. Credit reform, involving interest rates, is under way, and further progress may be expected in 1935. Profound studies are being made of taxation and it is becoming increasingly clear that a great national asset such as the land cannot continually carry an overload of taxes. Other sources of tax revenue must be tapped. And here again we may expect progress in 1935.

In a sense we are experimenting in planning on a national scale, and plans for 1935 are already under way. The basic idea in this planning is that there is a need to adjust our production to effective demand. Such adjustment requires each farmer who participates to cut his production by a given amount in acres or animals. Plans for such adjustments have already been modified, they will be still further modified. Such modification does not necessarily indicate weaknesses in the plans; it may indicate progress in planning. For example, I cannot visualize a long-time plan which will require each farmer to keep a certain acreage of his farm out of major crops. At this point a continuing study of land-use should help us by developing regionalized plans to determine the types of production best suited to different regions. In one region certain lands should be retired from agricultural production; in others, production should be on an extensive scale, making use chiefly of grass and hay crops; in others, production should be on an intensive basis. But until we have definitely laid out regional plans and decided to abide by them, something like what we are now doing in modified form perhaps seems advisable.

Our changing conditions in agriculture, as well as in all other lines of endeavor, call for a high order of trained intelligence, if wise adjustments are to be made. Obviously, I refer to an increasing need for education directed to the problems confronting us and applied to every phase of life.

From a letter recently received from our director, F. W. Peck, I quote: "I am very much interested in the future of experiment station work. The results of effectively conducted research are so paramount in the offering of services to the agriculture of tomorrow as to overshadow the excellent record made by the experiment stations up to this time."

Superintendent J. O. Christianson, of the School of Agriculture,

University Farm, in a radio address from Chicago week before last said: "In developing more effective rural organization, we recognize that such organizations are dependent upon intelligent, constructive, sane thinking. We must pay more attention to this job of living together; of utilizing what we have; of taking our parts intelligently and co-operatively. We have taken away from the savage his stone hammer, but we have given him machine guns and poison gas while he still retains the old prejudices, the old hatreds and the blindness of his savage days. We must change the emphasis from the physical to the social development of man."

Dean E. M. Freeman, of the College of Agriculture, Forestry and Home Economics, last fall submitted a memorandum to the Land-Grant College Association, which opens with this statement: "Every state of the union through its land-grant colleges offers to its citizens a rich variety of opportunities in higher education. The major cost of this educational service is paid by state or other public funds and hence by all of the taxpayers. Through this state-supported service the student may prepare himself for any one of a large list of professions or vocations to his future personal advantage and financial gain."

"These educational opportunities are not simply a gratuity to educationally qualified citizens. They are the taxpayers' investment in the education of those individuals for the improvement of the social order. The state has a right to expect from each individual who profits personally from this investment some real and tangible return on that investment. Every graduate has incurred a very concrete educational debt to the society that supplies his educational equipment."

President L. D. Coffman, of the University of Minnesota, in his recently published "Youth and Tomorrow's Education," speaks of this as he says:

"For two or more years we have been experiencing such a struggle in America. Co-operative action and social welfare, rather than individualism and personal initiative, are slogans around which discussion centers. Indeed the New Deal has been described as a struggle between individualism, on the one hand, and collective action, on the other. The government now controls or regulates banks, insurance companies, stock markets, packing houses, railroads, business of all kinds, and agriculture. This is not the time nor the place to discuss these sweeping changes. It may be said, however, that it is doubtful if we can become prosperous by losing the spirit which built America. It would be a misfortune for government to become tyrannical, for tyranny is a mockery to a free people. On the other hand, unbridled individualism must never be permitted again. We have paid a heavy toll to it through the loss of our savings, the machinations of unscrupulous manipulators of industry and finance, and the corruption of political leaders. In uttering this indictment, I do not mean to imply that there were no socially minded industrial or political leaders in the past; there were many who saw clearly what was ahead, but we refused to listen to them."

"If ever there is need of maintaining universities as nearly at full strength as possible, surely that need is great in such a crisis as we are passing through. It seems clear that the future welfare of the human race will not be achieved by seeking cheap substitutes for brains, nor by curtailing the creative powers of talented persons. Every time talent and ability are forced into seclusion and replaced by mediocrity, cultural demoralization begins. At such times we soon fall prey to emotion and become victims of unreasoned speech. How few there are who build plans upon facts, who are searching for the principles that underlie and govern human action! We are yet unwilling to rely fully upon knowledge as a guide for action. Even social experimentation sometimes discards its experience and accumulated wisdom. The barriers that must be surmounted to insure economic and political stability in the future are ignorance, selfishness, greed, and demagogic politics. We need to hurry if we are to surmount these barriers, for the sands of time are running fast."

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Management of Game and Birds New Study Field

Many Students at 'U' Farm Eager for Conservation Work

GROUSE RESEARCH DONE

Project to Estimate Wild Life Resources Gains Headway

Scientific studies of the rise and fall of the ruffed grouse population in a typical Minnesota area of 3,000 acres where no legal shooting is done may be blazing a new trail toward mankind's knowledge of wild life and of the ups and downs of fortune among the feathered creatures of woodland covers.

The studies are under the direction of Ralph T. King, instructor in economic zoology in the College of Agriculture, and they are likely to awaken widespread interest among both ornithologists and sportsmen, as well as in the growing army of those who are alert to the beauty of woodland trails, the attraction of the creatures who hide beside them, and the probability that we are still underestimating the importance of interrelationships that exist between all the forms of life.

Familiarity has bred a certain contempt in Minnesota for the bird called locally "the partridge," and many who confuse the dull spruce hen with the ruffed grouse have not yet realized that over most of the United States the ruffed grouse is a particularly prized game bird, as exciting and desirable as, say, a wild turkey or a woodcock.

Astonishing among Mr. King's discoveries are his statistics of increase in the area studied, which is the 3,000-acre preserve at the Cloquet Forest Experiment Station, an adjunct of the University of Minnesota.

Modern methods have made it possible to take a practically perfect census of a species over an area of that size, and when Mr. King and his assistants started to study the grouse at Cloquet they had a system by which they were assured of accuracy in tabulation. Most significant among the things they found, and probably most startling, was the discovery that whereas the birds numbered 260 in April 1931 and had increased, with that summer's hatch, to 525 by October of that year, they had fallen back to 520 in October 1934, a full thirty-six months later.

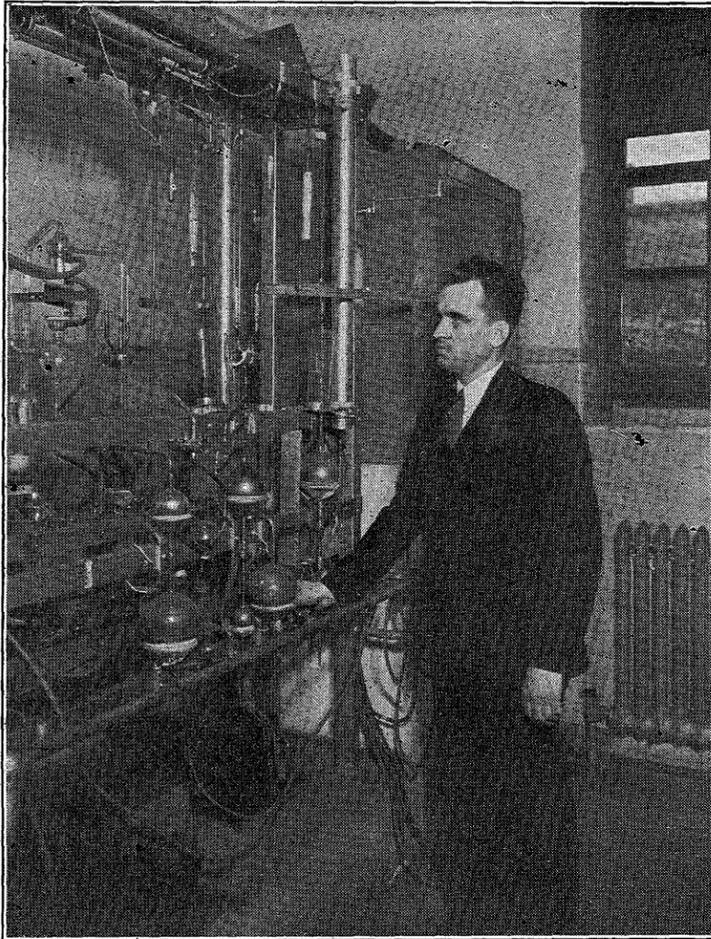
What had happened? Why had there been no important natural increase after the first year? Mr. King has answers for these questions and others. Of course there was some poaching on the area, although for the past year or two better protection has been possible. Some birds were killed by the severe conditions of the northern winters and many, of course, died as chicks. But these do not provide the final explanation.

That first summer, 1931, 87 hen grouse brought off broods and the total of 525 that fall held fairly well over winter, 425 being counted the following spring. Although these birds produced some 126 broods the number in the fall of 1932 was only up to 575 and by the following April the population had dropped back to 450. That summer of 1933 provided the biggest increase and by October 1933 the count showed practically 1,000 ruffed grouse in the preserve, which, by April 1934 had fallen again to 450. Last fall, as has been stated, there were about 520, or about half the number counted a year ago.

Reasons for Decline

For this decline there are two main reasons, according to Mr. King. One is that the cyclical population movement which made sweeping reductions in the number of Minnesota grouse in 1914 and 1924 was again in evidence this

Emanation Machine Gets Cleaning



Chemists specializing in radio activity at the University of Minnesota turned out one day recently to witness a procedure that seldom takes place and therefore is correspondingly interesting. What they witnessed was the "resuscitation" of the radium emanation machine which had been in use for eight or ten years and was producing only about a fourth or a third of the usual amount of emanations. The operation they saw has only been done a few times in this country, because there aren't many radium emanation machines.

Radium, as you know, may be used full strength in medical procedures, or the emanations may be used. These do not remain strong for very long, but while they do have the same therapeutic effect as the parent substance. These emanations, constantly thrown off by radio activity, are caught by a special process and imprisoned in tiny glass tubes.

At University hospital the radium emanation machine practically fills a small room. The machine is a complicated instrument with many glass tubes that turn and twist, this way and that, be-

tween flasks of liquid. About \$35,000 worth of radium is in the instrument, which fact alone makes the experiment of renewing its vigor an unusual one.

The reduced activity of the radium, none of which had been lost, was due to the fact that water in the apparatus had been nearly used up. The substance, radium chloride plus barium chloride, was redissolved in a barium chloride solution containing hydrochloric acid, and some that remained in precipitation was treated in a more elaborate method to get it back into solution. This was fused with sodium carbonate which converted the radium content into radium carbonate. The impurities were then worked out and the radium carbonate was dissolved in hydrochloric acid.

Until recently there were relatively few radium emanation machines and such an experiment would have been extremely rare. In recent years, however, their number has increased, but as it takes eight to ten years before a cleansing becomes necessary, few of these have reached the stage where this procedure was carried out.

Minnesota Botanist Counts Pollens To Get Facts on Hay Fever Dates

Those Subject to Tree Pollens Could Be Affected as Early as April

If you are a hay fever victim and suffer from the delusion that you will, or even must, begin to sneeze and sniff and suffer on some certain day in summer, or very close to that day, forget it. Don't forget it because you are wrong, for you aren't. Forget it because you are probably right and worrying over it will not do any good. About the only thing you can do about it is to take a vacation and go some place where the pollens can't get you.

Studies made at the University of Minnesota by Dr. C. O. Rosendahl, of the department of botany, and his assistant, A. O. Dahl, have shown clearly that various groups of plants that are important in the production of hay-fever pollens reach a peak of blooming on almost exactly the same day, year after year. So if you are one of those who believes he is sure to

get ill on August 29, it might be well for you to look at their chart and see what plant reaches a peak of pollen production on August 29. Then go off up north; not just anywhere up north, but to a place where the plant that is on your neck, or up your nose, is not growing. Some of the naughty, sniffly little creatures even grow up north, but maybe not the one to which you are sensitive.

Another thing they have found is that if you were sensitive to enough different sorts of pollen (cheer up, you probably aren't) you could come down with hay fever as early as April 1 and wheeze steadily until after frost. Some of our finest trees produce their pollens beginning March 28, and rather large quantities of it, too. Some people are sensitive to these and react to them about April Fool's day, at which time it is difficult for them to believe that they have hay fever. Furthermore, some of the wild sages, which are among the worst of all

Speakers State Viewpoints on Athletics at 'U'

Subsidization of college athletes was strongly condemned by President Lotus D. Coffman of the University of Minnesota when he spoke at the dedication of the university's new athletic building recently.

In dedicating the new structure to the future advancement of Minnesota's program of physical education, Dr. Coffman took particular exception to a statement by an eastern football coach who came out publicly for the subsidization of college athletes a few weeks ago. Should colleges allow such subsidies, he stated, amateur athletics would lose their value as a means of education and recreation, and might become corrupted.

Dr. Coffman also mentioned certain detractors to amateur sport, particularly in connection with college football. He scored drinking and gambling, asking that alumni of the university and friends of amateur sport aid in combatting these evils.

Pointing to the recent growth of professional football, Dr. Coffman indicated that it may in time detract from the college game in the same way that professional baseball did in the diamond sport. Certain types of commercial broadcasting in connection with college athletics also were deplored by President Coffman and he indicated that universities will have this problem also to consider in the near future.

Those in the field of athletics and in education must prepare for changes in the same way that business and industry must do, and they must be prepared to adjust themselves to new conditions, he said. College athletics, like many other things, are at the crossroads, and the right path is a difficult one to foresee. The ideal situation in the future would be to have sports administered by gifts, endowments and sources other than athletic receipts, with admission free to students and alumni.

In speaking of education in general, Dr. Coffman said that the future may bring a reorganization of the public school system to such an extent that freshmen and sophomores will eventually disappear from the college classroom. This work will be taken in other institutions and the time taken for completing a public school and college course will gradually be reduced.

With additional leisure time available in the future, sports, especially those which will be useful as a means of recreation and health in later life, will become increasingly important.

Governor Floyd B. Olson expressed admiration for the sense of sportsmanship and the code of ethics that govern college athletics. He stated that if business and industry could be governed by a similar code much of the unrest attendant upon changing economic conditions might be avoided. He stated that sports should always be encouraged for the valuable lessons they teach as much as for their recreational value and said he hoped the new building may do much to promote sportsmanship and the code which governs athletics.

Major John L. Griffith, Western Conference commissioner of athletics, speaking as a representative of the Big Ten, stated that the completion of the new athletic building gives the University of Minnesota one of the finest athletic plants in the United States. He cited the value of athletics in teaching right living, self-reliance, respect of rules, loyalty and steadfastness aside from the physical benefits.

Frank G. McCormick, athletic director at Minnesota, paid tribute to such men as A. A. Stagg, formerly of Chicago, Fielding Yost of Michigan, "G." Huff of Illinois and Dr. L. J. Cooke for the development of athletics in the Western Conference.

Dionne Infants Seen by Science In Varied Lights

Identical Quintuplets Are More Important Than If Fraternal

MAKE BIG FAMILY

Probably Biggest Birth in Which All Members Have Lived

Why are the Dionne quintuplets interesting? Is there anything more to their case than the usual human astonishment over the unprecedented and the astounding? Have they a scientific significance? If they have, what are the main points of scientific value involved? Believing that many who have read about the Canadian quintuplets and have seen their pictures would like to hear about them from the scientific point of view, Minnesota Chats has asked a biologist, a pediatrician, a specialist in child welfare and a socialologist to tell what each thinks about the importance and non-essential value of this quintuple birth. The stories which follow are by Dr. Dwight Minnich, head of the department of zoology, Dean Malcolm M. Willey, sociologist, Dr. Irvine McQuarrie, pediatrician, and Dr. John E. Anderson, director of the University of Minnesota's Institute of Child Welfare.

The Biological Viewpoint Dr. D. E. Minnich

Biologically the birth of the Dionne quintuplets is interesting for a number of reasons. First, there is the question of the maximum number of young which a human mother may produce in a single pregnancy. Twins are not uncommon for they occur once in every eighty to ninety births. Triplets and even quadruplets, although much rarer, are nevertheless familiar to all of us. What then is the maximum number at a birth? Apparently the maximum number which has been authentically reported at a single birth is six. The occasional reports of greater numbers have not been substantiated. The birth of five offspring at one time, then, is itself remarkable, but still more extraordinary is the fact that all have survived, for with larger numbers of young at a birth the hazards of entering this life are much greater.

A second point of even greater interest is the mode of origin of multiple young in the human species. Such offspring may arise either from different fertilized egg cells or from one and the same fertilized egg cell. As a rule only one egg cell is liberated at a time in the human species and, therefore, only one offspring is possible. In some cases, however, several egg cells are released at the same time, each of which if fertilized will produce a new individual. Multiple offspring produced in this manner may be of the same or different sex and are no more alike than ordinary brothers and sisters.

How more than one offspring may arise from a single fertilized egg cell in man and other mammals is readily inferred from experiments on certain lower animals in which development occurs outside the parent body. If during the early stages of development, such an egg is divided into two or even more parts, each fragment will develop into a normal though smaller individual. If a partial but incomplete division is made, some form of Siamese twins will result. In that curious little mammal, the armadillo, which ranges from the southern borders of the United States southward, multiple offspring from a single egg is the rule. The female armadillo regularly bears four such young at each birth.

In man the chance of two offspring arising from one egg is relatively rare, while that of a larger number is exceedingly rare.

Minnesota Soil Problem Outlined By Dr. F. J. Alway

Speaker Urges Completion of Statewide Survey of Soils

MUCH FINE SOIL HERE

Calls Alfalfa the Only Crop That Can Reach Water Under Nearly All Conditions

Only two states in the Union have more land classed as "excellent" by the president's national resources board than has Minnesota, Dr. F. J. Alway, chief of the division of soils at University Farm, said in a Sigma Xi address on "The Soils" in Northrop Auditorium recently. Iowa, he says, has 26,000,000 acres classed as excellent. Illinois has 15,000,000 and Minnesota has 12,000,000 called excellent and another 12,000,000 called good. As the larger state, however, Minnesota has only 25 percent of its land in the excellent class, whereas Iowa has 75 percent.

Climate, topography and contour, and other factors, as well as the richness of the soil, must be considered in a land classification, he said, pointing out that the almost complete lack of excellent land in the Dakotas is due to the dryness of the climate.

He deplored the slowness with which a thorough soil survey is coming about in Minnesota, although he said, such surveys have been made of some counties. Typical results are shown for Hennepin county, with 36 percent of its soil rated as excellent or good; Jackson county 55 percent, and Goodhue, Stevens and Lac Qui Parle counties, 90 percent. The drouth areas of western Minnesota have been having dry weather, Dr. Alway said, but have not a dry climate as recorded over a period of years.

Tells of Mineral Needs

The four principal mineral requirements of the soil, phosphate, potash, nitrogen and sulphur, were discussed at length by Dr. Alway. Chopped bones were at one time the only source of phosphate, he said, although later an Englishman developed a bone-grinding machine and it was stated by the German chemist, von Liebig, that the battlefields of the world and the catacombs of Sicily were ransacked in an effort to provide bones for the fields of Europe. Subsequently vast deposits of phosphates were found, particularly in Florida, and other deposits were developed in North Africa, in the Rocky Mountain region and in the far southwest, so that today the world's requirements of mineral phosphate are taken care of for untold years to come.

In the matter of potash, Germany alone has large enough deposits to supply the world for thousands of years, Dr. Alway said, while France, Spain and Poland have large supplies and the United States now is drawing a large share of what she needs from Searles lake in southern California.

"Potash is one of the abundant elements," he said. "It can be taken from rocks found almost anywhere on the earth. Even our soil is rich in potash, but it is in a form that is expensive to extract. In almost all parts of this state the top foot of soil over an acre carries so much that by proper chemical treatment it could furnish 60 tons of high grade potash fertilizer, which would sell in the Twin Cities for \$3,000. However, by methods now known, it would cost many times \$3,000 to produce that amount from our soil. Fortunately the excellent land and the good land still carry enough potash so that applications of this fertilizer are not needed, at least for ordinary field crops.

The air provides an inexhaustible supply of nitrogen which can be fixed in the soil by crop rotation in which one crop is a legume, he explained. Nodules on the roots of the leguminous plants fix nitrogen, and when they are used as fertilizer, return it to the soil. Industrial fixation of nitrogen from the air was developed, also, during the World war.

Red River Lands Have Nitrogen
The soils of the Red River valley won fame chiefly because of their richness in nitrogen, Dr. Alway said. Gilbert of the Roth-

Three Win English Scholarships



Clarence L. Kulichek



Audrey Hanson



Betsy Emmons

The Dewitt Jennings Payne Memorial scholarship in English at the University of Minnesota has been awarded for the present year to Clarence L. Kulichek, Belle Plaine, Audrey Hanson, Robbinsdale, and Betsy Emmons, 1225 Seventh street southeast, Minneapolis, carrying an award of \$250 to each of these undergraduates. This is one of the largest undergraduate awards that are available for students at the university.

Announcements of the awards was made by Professor Cecil A. Moore, head of the department of English. The prizes are derived from income of a fund given the university about ten years ago in the will of Olive Stover Payne of

Chicago. Captain Dewitt Jennings Payne, for whom the scholarships are named, was a former student at Minnesota who lost his life in the World war.

Miss Emmons is editor of The Literary Review, the quarterly literary supplement of The Minnesota Daily, and is also vice president of the student YWCA, and a member of Phi Beta Kappa. As a freshman Miss Hanson was president of the Poetry Club. She belongs to the Poetry Society of America. Mr. Kulichek, formerly a member of The Daily staff, is studying English literature and history. He is working his way through the university. All three are seniors and all are majoring in English.

Garden Clubs Afford Many Advantages

Fruit, flower and vegetable growers of Minnesota who want information on the best practices and who want to keep in touch with the newer introductions, should interest their neighbors and organize a local garden club, says Alfred Swanson, Red Wing, president of the Minnesota State Horticultural Society. When such local garden clubs affiliate with the state horticultural society its members derive many services and advantages to the ordinary home grower, including the opportunity to secure new fruits and plants of recent introduction. Members also receive the Minnesota Horticulturalist, a periodical of authentic information dealing with the best methods and giving much useful information adapted to growing fruits, flowers, plants and vegetables in this region.

Mr. Swanson urges anyone interested in organizing such a local garden club to talk the matter over with a few friends and to write to R. S. Mackintosh, secretary, Minnesota State Horticultural Society, University Farm, St. Paul, for full information about local garden clubs and how to organize one.

amstead Experiment station in England visited that valley 50 years ago and a paper by him, read before the British Association for the Advancement of Science, described the rich soils of the Red River valley so glowingly that they became enduringly famous.

Over most of Minnesota, he said, enough sulphur is deposited from the air to care for the plant needs of this mineral fertilizer. At University Farm about 60 pounds per acre falls from the air annually. Near Bemidji, however, is a district that receives less sulphur than it needs, and applications of sulphur work remarkable results with crops in that area. For example, application of ten pounds of sulphur per acre doubles the yield of alfalfa.

Water is more important than plant food in crop production, Dr. Alway said. For example, if one were to grow wheat in Minneapolis the 30 tons of water needed to produce a bushel of wheat would cost 90 cents by the city water meter and the 400 to 1,000 tons of water needed in growing a ton of hay would cost from \$10 to \$30. These statistics explain what farmers mean when they speak of million dollar rains.

Water Table Fallacies

"There is a widespread popular belief," he said, "that water from the water-table can be elevated great distances by capillarity and so brought up to the plant roots. In reality water can so rise only a few feet, ranging from three to six feet according to the nature of the soil and the time involved.

"On very little of our soil is the water table within six feet of the plant roots, and so the amount of water furnished to crops from the water table is almost negli-

gible. We may say that water can be moved upwards from the water table for a distance of three to seven feet, while from moist subsoil which is far above the water table some of the water can be moved upward a foot or so. The result is that if we give the soil and subsoil all the water they can retain and then do not allow any plants to grow on the surface, we can retain a good deal of water within a foot of the surface during prolonged drought."

The speaker pointed out that the only crop grown in this territory that has roots long enough to reach water under almost all conditions is alfalfa, which may send roots down twenty feet, and in cases as much as 30 feet beneath the surface. Dr. Alway said that the much discussed dust mulch for holding water in the soil is greatly overrated. When precipitation is inadequate, he said, the subsoil loses its water because plants use it up. Areas kept free from plants can retain a large amount of underground water, even during a long period of drought.

Pepinsky Holds New Distinction

Said to be the only professional musician who has ever been made a member of Sigma Xi, honorary scientific society, Professor Abe Pepinsky of the School of Music at the University of Minnesota, took part in the recent series of Sigma Xi popular scientific lectures by directing his University Symphony Orchestra at each lecture.

Professor Pepinsky woke up one day several years ago and realized that he was an anomaly; yes, sir, awful as that may sound, he was an anomaly. He was a college professor with no degree. This, he decided, must not be. He at once went to Professor John T. Tate, who runs a branch of the university called, "University college." It is arranged so that people who have a definite objective in view may strike straight at that objective without taking all of the usual academic hurdles. Pepinsky enrolled as another anomaly, a "faculty-undergraduate." His work was largely in physics, along the lines of acoustics. Presently he got his bachelor's degree, but not satisfied with that he went ahead and took a master of arts degree in music, his thesis being on "An acoustical study of the Northrop Memorial Auditorium." He did so well that not only did he get the degree but Sigma Xi elected him to membership for unusual scientific accomplishment.

He may be the only professional musician to be honored with Sigma Xi membership.

Acquire Vienna Newspaper
Among recent important acquisitions of the University of Minnesota library is a set of a German language newspaper, printed in Vienna, running from the year 1704 to 1793, a period in which many important historical happenings were recorded in Europe. There are 96 volumes in all. It is the Wienerisches Diarium.

Medical Schools Get Real 'Lowdown' On Students Who Ask Admission

Editors Make Lemke President

Wadena Publisher, Congressman's Partner, Heads State Association

Minnesota Chats takes pleasure in congratulating A. R. Lemke of the Wadena Pioneer-Journal on his election to the presidency of the Minnesota Editorial Association.

Although not a native of Wadena where he is now co-publisher and business manager of the Pioneer Journal, A. R. Lemke, president of the Minnesota Editorial association, has spent the greater part of his life in that town. His parents came to Wadena when Mr. Lemke was a small lad and he grew up there. He attended the Wadena high school until 1911 when he was forced to quit because of straitened economic conditions.

He had done odd jobs around the printing office of Charles C. Eastman, then publisher and editor of the Pioneer Journal. When he sought work it was natural that he should turn to Mr. Eastman. He got a job as an apprentice and worked for a little more than nothing a week for two years.

By that time he felt competent to run a paper of his own and in 1913 he purchased an equity in the Staples Headlight and operated that paper for a year. There he was his own editor, solicitor, pressman, compositor and collector. At the end of the year he had found out that there was still more to learn about the newspaper business. He got a job as a compositor with the Fargo Forum.

In 1915 when the Barnesville bank acquired the Barnesville Review on a mortgage, the banker sought someone to take over the paper and Lemke took the job. For three years he was managing editor of that newspaper and made a conspicuous success of the venture.

Meanwhile W. E. Verity had purchased the Pioneer Journal in Wadena and was looking around for a good manager. He spotted Lemke and offered him the job, which he accepted. From 1918 to 1928 he worked on the Pioneer Journal. When Mr. Verity died in 1925 a larger burden of the publishing fell upon Mr. Lemke and in 1926, when Congressman Harold Knutson bought the Pioneer Journal, he took Mr. Lemke in with him as a co-publisher and manager, and since that time he has been in active management of the Pioneer-Journal.

Mr. Lemke was one of the charter members of "Group 1 of the Minnesota Editorial association," the first of the district editorial organizations. He has been quietly active in the state association and for the past three years has been a member of the executive committee. In January his colleagues elected him president.

Individualized instruction at Winnetka, Ill., under the direction of Carleton Washburne, and a Semi-Dalton plan of instruction at the University of West Virginia High school were observed by Dr. J. G. Umstatt, assistant professor of education, University of Minnesota, who recently visited those places.



A. R. Lemke

After You Have Taken Their Tests You Are Definitely On Record

"That's one for the book," may be slightly tarnished as up to date slang, but if you are an undergraduate who plans some day to enter medical school, you should take it seriously. For every hopeful premedic who wishes to enter medical school nowadays must take the medical aptitude test of the Association of American Medical Colleges, and when he finishes it his record is set down in a book that is available to the committee on admissions of every medical school in the country.

This is no matter of showing the average score of anonymous students at this or that university. Your own name will be right down in the book, and it will say that Jefferson J. Jaspersen did so and so, and that his percentile rating is such and such, ranging all the way from zero to 99. That's a fact; some of the applicants are recorded with each of those scores.

In other words, medicine has gone farther than any other profession in obtaining the actual data on the abilities of those who would enter its professional schools. Every school that belongs to the association has a copy of the record book, so it makes no difference whether an Arizona student applies in Maine, or vice versa. The facts are available.

Plan Originated in Washington

Dr. F. A. Moss of George Washington university, Washington, D. C., is the originator of these aptitude tests. They include comprehension and retention, visual memory, memory for content, logical reasoning, scientific vocabulary, ability to follow directions, and understanding of printed material. When the tests were introduced by Dr. Moss at his university in 1923, they included premedical information instead of logical reasoning. A total of 280 points is distributed as follows: comprehension and retention, 40; visual memory, 20; memory for content, 20; logical reasoning (or premedical information), 100; ability to follow directions, 20; scientific vocabulary, 50; and ability to understand printed material, 30.

In Proceedings of American Colleges for 1930-31, Dr. Moss wrote of the first results of his medical aptitude test: "The problem is to devise a test to indicate ability to pursue a medical course. The grades received in the test are compared with the grades received in the first year at medical school to ascertain the predicting ability. The correlation between the tests and the first year work was found to be .59 and the correlation between the tests and the second year work was found to be .54."

Shortly after Dr. Moss introduced the medical aptitude tests at George Washington, other medical schools of the country adopted them. They have been used at the University of Minnesota since 1928.

"We believe that these tests are the best means yet devised of determining a student's probable degree of success in medical work," said Dean Elias P. Lyon of the university medical school. "Of course, we cannot keep one from entering the medical school, merely on his score in the examination. But the percentile rating is fairly reliable as a criterion, especially if it correlates highly with his work in premedical subjects."

Dr. Moss' study of the test scores and the first two years in medical school reveals that if a student comes from the upper tenth of those tested, the chances are 100 per cent that he will pass at the end of his sophomore year and 68 out of 100 that he will average 85 or over in his work. On the other hand, if he is as low as the lowest tenth of those tested, the chances are 56 out of 100 that he will fail at the end of his second year and 96 out of 100 that he will be below 85 per cent or 76 out of 100 that he will be below 80 per cent. If he has a score as high as the upper quarter, the chances are 99 out of 100 that he will pass at the end of his second year and 49 out of 100 that he will average 85 or better in his work. On the other hand, if the student stands in the lower quarter, the chances are 43 out of 100 that he will fail by the end of his second year and 93 out of 100 that he will average below 85.

Calls Training Public Officials Duty of Schools

President Speaks to N. E. A. Department at Atlantic City Session

NEW TIMES; NEW NEEDS

Government's Part in Complicated Affairs Calls for Trained Personnel

The United States maintains the most extensive public school system in the world but makes less use of it in selecting public officials than does any other self-governing nation, President L. D. Coffman of the University of Minnesota told the Department of Superintendence of the National Education Association in convention recently at Atlantic City, N. J. He advocated the development of a career service for public officials with civil service governing selection of those to be employed in all grades except officials chosen by the ballot, and, he said, the colleges and universities of the country should be called upon to train people for these public offices, as the English universities do in feeding the celebrated English civil service.

Dr. Coffman based his address on facts gathered in the past year during his service as chairman of the Commission on Personnel in the Public Service, which was endowed by one of the big foundations and sponsored by the Social Science Research Council.

"Science, invention, and the ingenuity of man in general have transformed life in nearly every field of human action except government," Dr. Coffman went on. "In government we still lumber along, holding steadfastly to the ways of the ox-cart and the sod shanty age. There are still in existence in this country one hundred and seventy-five thousand independent units of government, each with the power to raise and spend money. Although many of them are obsolete and useless, we cling tenaciously to them and seem to delude ourselves into believing that they represent a priceless heritage that should not be given up."

Jackson Thought It Easy

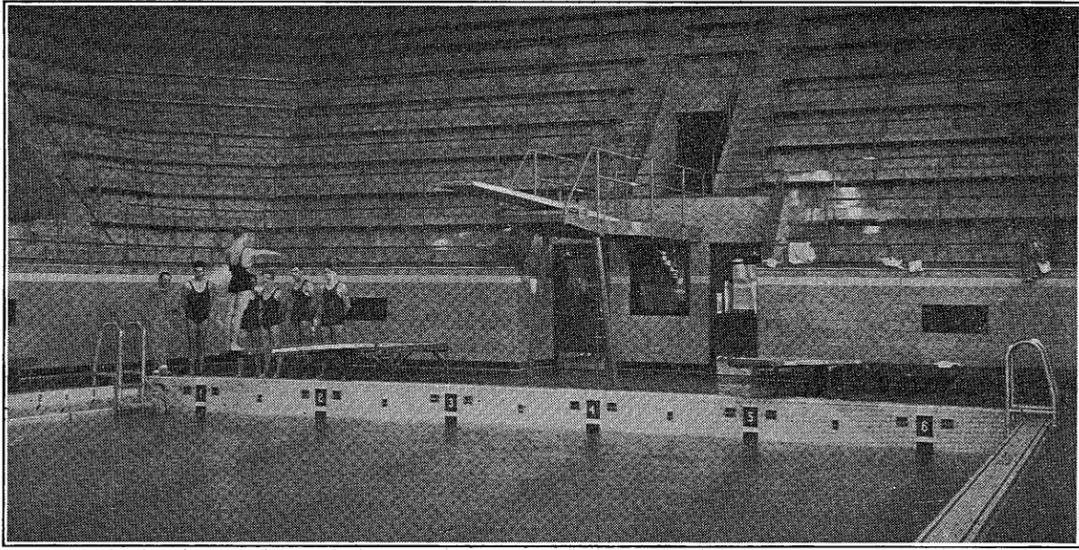
"President Andrew Jackson was responsible for one popular misconception to which we still cling. He declared that the duties of government are 'so plain and simple that men of intelligence can qualify themselves for their performance.' That is true no longer. When government becomes concerned directly with banks, railroads, airways, highways, insurance, agriculture, commerce, industry, credit, exchange, health, education, in short with everything that touches the life of the people generally, then it needs expert service. Unless special knowledge is brought to bear upon the various activities of government, extravagance, incompetency and inefficiency will flourish and continue to increase.

"Another of the prevailing popular notions is that charity begins on the public payroll," Dr. Coffman said. "All over this country we elect or appoint men and women because they need the office; they have failed in business; they have a large family; a leg has been lost; someone has died or some other misfortune has befallen an individual. We seem to assume that this qualifies for public office.

"Still another assumption is that political parties exist to secure patronage for their constituents. Long ago Theodore Roosevelt declared that patronage is the curse of politics. It is the selling out price of democracy, because it turns the political party into a job brokerage machine, creating a mercenary army of occupation which, under the guise of democracy, actually robs us of self government.

"One of the most hopeful signs in recent days has been the disposition of the government in the present emergency to call to its aid business and college men who have acquired especial knowledge of some phase of government as a result of their experience or their studies. The government is finding it necessary to rely more and more upon such persons. It is true that these men are sometimes referred to as the 'brain trust,' which is one way of ridiculing the man who knows something about some phase of government and is

Big New Pool in University Athletic Building



willing to put that knowledge to public use.

Would Use Professors

"These 'brain trust' positions should develop into career positions. Indeed, every position on the administrative, professional, clerical, skilled and unskilled labor levels should provide such an opportunity. Each level and type of service should be closely tied in with the educational system of the country. In other words, the amount and kind of training should be closely related to the responsibilities of the office. Great Britain long ago recognized the importance of this relationship. Perhaps her most conspicuous contribution to government personnel problems is that she applied this theory to the selection of her administrative officers as well as to those holding positions of lesser importance.

"The influence of filling positions on the various levels with career people will be felt in many ways; not only in better administration of government, but in toning up the service generally because of the hope of advancement through good work rather than through favoritism. A career plan will permit and encourage young men and women to prepare themselves, realizing that they can enter the public service and receive advancement in a fair, competitive system. The public service will have the esteem of the public and the tremendous satisfaction of knowing that in serving the public good and able service will be rewarded.

"What America needs is not large armies and large navies, higher tariff walls, more national isolation or a breakdown of capitalism," he said. "America needs a program that provides for intelligent citizenship and economic security; a program whose administration should rest in the hands of those who through study and experience have qualified themselves for its administration. It is clear to me that public service and education are mutually dependent; they both exist to serve the same end—the advancement of human welfare. If one fails the other will be defeated."

"The Theory and Possibilities of Educational Guidance" was the topic of an address given by Dr. Harl R. Douglass before the Minneapolis Vocational Guidance Association, March 6.

Sees New Value In Wild Life Study



Ralph T. King

Management of Game and Birds New Study Field

(Continued from page 1, col. 1)

past year, and was due to come, according to the ten year interval of the past. The second explanation, and a simple one which, however, he believes to be first important, is that a given area can only support about so many birds of this type and he believes that under nature's delicate conditions of balance the Cloquet tract can normally support just about 500 adult birds. This is borne out by the fact that it was relatively easy to bring the number up to 500, but that there has been no success in keeping it above that figure.

Mr. King is studying the ruffed grouse because it lends itself to scientific observation and he is eager to have abundant scientific evidence on which to base his conclusions, but his program is far wider than the matter of understanding a single game bird. Viewed broadly, the program he is working on is one of wild life management, which he calls a new profession or vocation, and one which in time will be as well recognized as forestry is today.

"Wild life is a natural resource of great value, just as timber and mining deposits are," he explained. "In many parts of Minnesota we have enough game and wild life to justify serious efforts at wild life management, and this carries with it the necessity of training men in the work. Furthermore, wild life is an organic resource, by which I mean that it can make good its own losses, given proper conditions of life and enough freedom to take advantage of those conditions. We can not only string out the supply but can make it last forever."

Many Students in Courses

In line with this policy Mr. King began offering courses in wild life management in the College of Agriculture, Forestry and Home Economics in 1929 and now has an enrollment of 80 in these classes, a fourth of whom are doing their major work in his field. These are students enrolled either in the courses in agriculture or in forestry. A number of men have started to take graduate work, but as is true in forestry, there has been so much demand recently for men with this training that most of the students find jobs the minute they finish the undergraduate course.

The major points to consider with respect to wild life management, said Mr. King, are first, that the needs of the various species must be recognized, and second, to think of birds and animals as products of the land.

"We have assumed that we knew what the needs of these wild creatures were," he said. "Often we have been mistaken. We know they are dependent on environment and that their needs must be found on the spot. The central idea is that we can improve the conditions for wild life, not that we can take care of individual cases where there has been suffering from an unsatisfactory environment. It is of prime importance that we understand especially the food needs and the needs for protective cover of our wild creatures. In the past we have been too much inclined to leave the interests of wild life to very well intentioned people who were,

Coach Niels Thorpe, who directs the swimmers at the University of Minnesota, is shown giving instruction to some of his squad in the exhibition pool of the new Athletic Building at the University of Minnesota. This pool provides for the first time an opportunity for students and other spectators to watch swimming activities at Minnesota. The building also contains a second and only slightly smaller pool for general use of students and for intramural swimming competition.

however, busy with other ways of earning a living, and whose ideas were based more on tradition than on accurate knowledge. Now we must transfer the chief parts of wild life management from the enthusiasts to the trained specialists. Nothing else will be satisfactory."

He pointed out furthermore that unless environment encourages reproduction a very little shooting can cut the rate of increase down to nothing, or even cause a decline in the survival rate. For example, if a pair of birds in the spring has become four birds by fall, and one is shot, the rate of increase is reduced 50 percent. If hunters take two from this little covey, which seems quite possible, the rate of increase is wiped out.

Procedures He Plans

Five procedures in wild life management are being planned. The first is an inventory, or broad general determination of what resources exist and where they are to be found. This has already been undertaken, and has been referred to in some places as a census, which it is not. A true census is planned, however, and will be taken. It is to discover not only the numbers of the various types of wild life but the general condition of the population. Third will come a yield determination, aimed to show whether the curve is up or down. Then will come a diagnosis of the wild life situation in Minnesota, this to be followed by steps for control and management. Management will consist primarily in the "manipulation of environment to give them a chance."

The step currently under way is the inventory. Mr. King has enlisted the aid of game wardens and has asked them to report by townships the existence and something of the condition or frequency of forty-three types of wild life that are known to live in Minnesota. Wardens are to tell whether each animal or bird is present, was present formerly but now gone, now present, though not formerly, present only occasionally, and whether abundant, common, or rare.

The 43 species include some that are surprising. For example, has it been known that the opossum is coming into Minnesota in increasing numbers? How many have known that we have woodland caribou in the area north of Red Lake, and willow ptarmigan in the extreme north?

At all events, here is the list. It is a nobly representative selection of fine game birds and animals and fur bearers, one of which the state should be proud, and which Minnesota should do all in its power to encourage.

Grouse: Ruffed (partridge); pinnated (prairie chicken); sharp-tail (sharp-tailed prairie chicken); spruce (fool hen).

Other upland game birds: Bob-white quail, ring-necked pheasant, Hungarian partridge, willow ptarmigan.

Deer: Virginia white-tail, moose,

World Famous Plant Explorer To Speak at 'U'

Dr. N. E. Hansen, Brookings, S. D., to Feature Horticulture Short Course

At the annual Horticultural Short Course at University Farm, St. Paul, Wednesday, Thursday and Friday, March 27-29, Dr. N. E. Hansen, horticulturist and plant explorer, and head of the work in horticulture at South Dakota State College, Brookings, will be one of the outstanding speakers.

Dr. Hansen several years ago was sent by the United States Department of Agriculture to southeastern Europe and southwestern Asia in search of plants of different kinds, adaptable to conditions in the regions of rather scant rainfall in the central western and southwestern states. He came back with an abundance of material. Among the prizes brought back was a winter-hardy alfalfa, whose trail he followed from Turkestan clear up through northwestern China into Siberia—more than 1,300 miles. This and other things have been great contributions to the plant wealth of the northwest.

Dr. Hansen has a picturesque and humorous way of imparting the information he acquired on the trip referred to and on subsequent trips. He has, also, a wealth of knowledge based on extended studies in the "invention," as he likes to call it, of hardy fruits and flowers for northwestern states, in which field he was one of the pioneers, and of these he tells in just as interesting a way.

Dr. Hansen will be on the program every day of the coming short course.

Wednesday, March 27, will be Vegetable Day, and Dr. Hansen will tell of vegetable growing in Russia. Tuesday will be a day devoted to garden flowers and ornamentals, and Friday will be given up to problems in relation to fruits. In both of these fields, again, Dr. Hansen has done much work.

On the program of the three days' meeting will be several prominent commercial horticulturists. Among these will be J. K. Andrews, Faribault, who will tell of his work in growing and marketing raspberries from a 50-acre plantation.

The course, says Prof. W. H. Alderman, head of the division of horticulture at University Farm, who will have charge of the course, will be open to any who care to attend. No fees are charged.

French Professor Had Narrow Escape In Foreign Legion

Paul Minault, professorial lecturer in Romance languages at the University of Minnesota, holds his position by virtue of the fact that he once socked a Berber guard over the head with a French cavalry boot that had the spur screwed right into the heel. Not that such a performance could possibly count in his getting an appointment to teach, but because, had it not happened, he might never have lived to do teaching or anything else. He was a lieutenant in the French Foreign Legion in North Africa at the time, and had been captured by the Berbers.

M. Minault's father was killed early in the World war and he has lived a roving and adventuresome life. He began his teaching as an instructor in English to French labor groups, thanks to the fact that his mother was an Englishwoman and he had command of that tongue.

It was when he was twenty, that Minault was in the legion, commander of a troop of 125 Russian cossack exiles. At the expiration of his term of service he completed his education at English schools and the great university in Paris, the Sorbonne.

caribou.

Bear: Black (brown). Rabbits: Snowshoe, jack, cottontail.

Squirrels: Red, gray, fox, black.

Fur-bearers: Beaver, otter, marten, wolverine, lynx, bobcat, skunk (black and spotted), muskrat, red and gray fox, raccoon, opossum and several species of weasel.

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Pollens Go Down for Count

(Continued from page 1, col. 3)

hayfever producers, continue to produce pollen even after the first light frosts.

A Pioneering Research

Dr. Rosendahl is a pioneer in the study of pollens in relation to human ailments. It has long been recognized that plant pollens caused hayfever, but he was the first in this area to make detailed studies to show what plants were guilty, how much pollen they produced, and when they produced it. All of these are facts which help the physician, or the individual, understand the causes of individual cases of hayfever and comprehend those periods when very large numbers of people suffer from it.

His first problem was to learn when the pollen producers bloom. This was not difficult, for there was abundant data on the various plants in the Herbarium of the department of botany. The next and more important problem, however, was to determine what quantities of these pollens got into the air, where they could affect people.

To this end a glass slide, coated with paraffin, was set out on the roof of the botany building under a little shelter 18 inches up to keep rains and dust off it. At first it was tilted experimentally at various angles, but it was found that the slide caught most pollen grains when it was lying flat. With this apparatus Dr. Rosendahl and his assistant, Mr. Dahl, have been working for a number of years. Incidentally, one of their problems was to become able to identify the pollen grains of hundreds of species. The grains are so small, some of them no more than two-hundredths of a millimeter in diameter, that this was very difficult. In fact they still can not identify all species, although they can pretty well tell the family from which a pollen comes, and that is the important thing, for most members of a family blossom at about the same time.

Their "catches" show that the first tree to bloom is the soft maple, late in March. This starts a procession of trees and plants that continues into October, and in order of the time of first blossoming those in the procession, following the maple, are: birch, poplar and willow, elm, nettle, sedge, bulrush and cattail, ash, oak, sweet vernal grass, walnut, hickory, plantain, dock, sorrel, timothy, bluegrass, rye, alfalfa and clover, millet, oats, pigweed, Russian thistle, grama grass, wild rice, sage and wormwood, sorghum and ragweed.

Corn is not included in the list, for while corn produces an immense amount of pollen, fortunately the pollen grains are so large that they do not blow very far. In Iowa and southern Minnesota life would be difficult indeed if the corn fields were causes of hayfever.

Pollens Come in Waves

The pollens come in waves, according to Dr. Rosendahl, the tree pollens coming first, followed by the grass pollens through May and June, with a peak about June 5th, after which the pigweeds and lambs quarters, including the Russian thistle, begin their bombardments of the atmosphere. Incidentally, these are worse in dry years and were particularly bad in 1934. These are the July pollens with a maximum in that month, after which they let up for a while, and then join with other pollens to push the chart way up again in August.

August and September are the worst months, for then the sages and ragweeds, which are the worst of all, produce most of their pollen, while considerable quantities of other species are still floating about.

At the time of the first ragweed-sage peak, August 20, the count at the botany building shows about

Band Will Tour During Holiday

Expects to Play to 25,000 in
Eleven Performances in
Minnesota and Iowa

The University of Minnesota Concert band, well known throughout the states as a leading musical organization, is planning a tour through southern Minnesota and northern Iowa during the spring vacation starting March 25. "It's an old band custom," say those who know and they hope to make this one a success. According to Gerald R. Prescott, conductor of the band, both afternoon and evening concerts will be given which will include special band arrangements, novelties, and solo numbers.

The band expects to play to a house of almost 25,000 people during its tour. It will appear at afternoon and evening concerts in Sleepy Eye, Minn., on Monday, March 25; afternoon concert in St. James, Minn., and an evening performance at Tracy, Minn., on March 26; a two concert series in Sioux Falls, South Dakota, on March 27; an evening appearance in Sioux City, Iowa, on March 28; two concerts in Des Moines, Iowa, on March 29; an afternoon concert in Fort Dodge, Iowa, and an evening concert in Albert Lea, Minn., on March 30. Immediately after the evening performance at Albert Lea the men will board the buses for the last time and return to Minneapolis to resume their studies for the spring quarter.

750 pollen grains per cubic yard of air. This makes it easy to understand why a sensitive person should begin to sneeze about that time. But worse is in store. These pollens rise on August 29 to 31 to a peak of 1,200 grains per cubic yard of air, and have been counted at as high as 1,300 grains. A striking drop follows, then another rise to 700 about September 8. After September 24 the amount of pollen in the air is insignificant, although some of the hardiest plants still produce after the first frosts.

The late blooming ragweeds and sages are particularly bad hayfever producers because they have such fine pollen, which permeates the air more thoroughly than coarser types do. Grasses, while they produce almost as much in volume, have a much coarser pollen grain, so that less of it is carried into the air.

The botanical results obtained at Minnesota are now being utilized in medicine, with the prospect that much more effective treatments will be evolved.

Strange "Catches" Made

Pollen grains are by no means the only things that adhere to the paraffin coated microscopic slides that are used to make the count, Mr. Dahl said. Among the strange visitors that have been borne up to him by the wind are scales off butterfly wings, grains of wheat starch and potato starch, tiny, microscopic insects, and spores of lichens and fungi.

Once he was astounded to find some date pollen on the slide. Then he remembered that a date tree was blooming in the university greenhouse, half a block away. Pine pollen, which is light and sometimes gets up into the stratosphere, continues to fall all winter.

These researchers have found that in extreme northern Minnesota the ragweeds bloom earlier than they do at the Iowa line. Nature is shrewd, and by the length of the summer days on the northern slopes she compensates for the smaller actual number of days in the growing season. She sees to it that her creatures have a chance to reach maturity. As one goes further and further south these plants bloom later and later, until, all at once, down near the Rio Grande river, a different

Dionne Infants Seen by Science In Varied Lights

(Continued from page 1, col. 5)

Offspring resulting from a single egg so strongly resemble each other that they are termed identical. The reason for this is not far to seek. It is to be found in their common heredity. The evidence indicates that the Dionne quintuplets are identical. These five girl babies have thus developed from the surviving fragments of perhaps as many as eight parts into which the single developing egg divided.

The extremely detailed way in which "identicals" resemble each other is attested by the amusing or sometimes tragic situations in which they have found themselves in real life as well as in literature. If identical twins are confusing, what of identical quintuplets? Certainly the suitor who may be attracted to one of the Dionne girls will need superhuman guidance.

The Sociological Viewpoint

Dean Malcolm M. Willey

The fact that 24-year-old Mrs. Ovila Dionne on May 28 gave birth to five baby girls on a farm in Corbeil, Canada, in itself has no special sociological significance. It is as a biological phenomenon rather than as a social one that the quintuplets assume importance. Nevertheless, the appearance of these children, making ten in the Dionne family, does serve to enhance interest in the general subject of the family and some of the changes it is undergoing as a social institution. These five children serve to dramatize certain facts that may not be familiar to the general public, although well known to the sociologists.

If Mr. and Mrs. Dionne have ten living children (and one that died) how far are they from the general average? In the United States the average size of the family has been declining, though not rapidly, for many years. In a special study made in connection with President Hoover's Commission on Social Trends it was shown, for selected data, that the average unbroken family in 1900 consisted of 3.67 persons; in 1930, of 3.57 persons. It is likewise interesting to contrast this family of a dozen individuals with the fact that in the sample of data just referred to, in 1930, 31 per cent of unbroken families (with wives under 45) had no children or no children living at home; in 1900 the childless families were 28 per cent of the total. With respect to childless families there is wide variation between rural and metropolitan families, as data for 1930 show. On the farm, only one family in six had no children or none living at home; in the small town, one in four; in the large city, almost every other family was without children.

That a woman of 24 can have given birth to 11 children, might also raise queries concerning age of marriage. The Dionnes were married in 1925, indicating that at least they were in line with the developing tendency in the United States to marry at earlier ages. The general opinion is that marriage is being deferred, and that fewer marry. Actually, the reverse is true. In 1930 there were 15 more married persons per thousand of population between the ages of 15 and 19 than there were in 1890, and between the ages of 20 and 24 there were 73 more married persons per thousand of population. In 1890 the 55.3 per cent of the population of the United States over the age of 15 was married, and there was a decennial increase in this figure until it reached 60.5 per cent in 1930. As a people we marry more, and we marry younger.

There is no field of sociology more fascinating than the study of the family and the changes that are taking place in it, espe-

cially when considered with reference to major population changes. No one family and no one birth (even if there are five children in consequence of it) makes much difference to the sociologist—except as the single item is used as a text upon which to introduce some general data in which major trends and tendencies are revealed.

The Child Welfare Interest

Dr. John E. Anderson

The Dionne quintuplets present an opportunity for psychological and developmental research, the value of which is dependent upon whether or not there are within the group of five children any pairs that are identical. A determination of identicalness can only be made by a thorough study of the quintuplets' physical characteristics and genetic origin. If several are fraternal and several are identical, inter-quintuplet comparisons with respect to physical and mental traits would be of much scientific value, especially if measurements and observations could be made and tests given at intervals throughout development. Of particular interest would be a comparison of their intellectual, linguistic and motor development with their emotional, personality and social development, since modern studies indicate that the relative potency of heredity and environment in determining behavior varies from one phase of behavior to another. If all the quintuplets are fraternal, a detailed study would be of some, but only of slightly more value, than a similar study made on five siblings. If all of the quintuplets are identical, such a developmental study would be of much value. If all are identical, the value of the study would be increased by separating the quintuplets and providing differential environments for short periods of time.

Note: Methods are known to science for determining with reasonable accuracy whether twins are identical or fraternal. Dr. Anderson believes this determination has not yet been made for the Dionne quintuplets, but probably will be.

Trees to Plant and How to Do It

By E. G. Cheyney, Professor of Forestry

The proper requirements for street and lawn planting are seldom met in the selection of trees in pioneer communities. Ease of growth and speedy development are placed above everything else. Street after street planted to scrawny boxelders placed from eight to 16 feet apart bear witness to this. The boxelder is a splendid example of what not to plant as street trees in this region.

A first class tree for street or roadside planting should meet certain very definite specifications. It should be perfectly hardy and free from any serious pests. It should fork rather high, so that its lower branches will clear the traffic on street and sidewalk, but at the same time spread fanwise so that it can successfully arch over the street. It should be capable of reaching a large size and a venerable old age. There is no other species in the country that fulfills all these requirements quite so well as the white or American elm. The beauty of the New England village lies very largely in its elm-arched streets.

This does not mean that some other species may not be used. The green ash has most of the requirements except the fan-like spread and is well adapted to use in our prairie towns where extreme hardness to drought is a prime necessity. The hackberry may often be used to good advantage, but is slower growing and sometimes disfigured by birds nest growth as the result of insect injury. The black walnut makes a handsome tree in the southeast, but is rather untidy and makes quite a mess in the fall. The much slandered staminate cottonwood will produce a superb specimen of imposing form in a very short time, but is comparatively short lived, and apt to strew small branches on street and lawn after every storm.

If it seems desirable to introduce several species the mixture should not be made indiscriminately but by streets: one street of elm, another of hackberry, another of ash, and so on. The result will be much more satisfactory than a mixture of several species on the same block.

In nine cases out of every ten, street trees are planted too closely together. A street tree depends for its effectiveness on the perfection of form of the individual tree. The tree can attain that perfection only where it has plenty of room to develop freely. Elms should never be planted closer than fifty feet apart; other species not closer than forty. They will look rather lost for the first few years, but will more than make up for it later.

The transplanting of large trees is very expensive. Unless unlimited funds are available, an almost unimaginable situation, it is much better to plant small trees. Those from an inch to an inch and a half in diameter are of the best size. They are comparatively cheap and stand a better chance of living. When a tree is dug up it is rarely possible to get all the roots. Unless the tree has been carefully pruned in a nursery the roots are likely to be so wide spreading that only a small percentage of them can be taken. Obviously it is not fair to leave a full sized top to draw upon a partial root system. The top should be cut back to a mere whip to balance the top and roots. Here also the small tree has an advantage. It will recover its normal shape much quicker than a large tree.

A tree planted on a boulevard is not growing under the most favorable conditions. A portion of its roots is under a hard-packed street, usually under a pavement; another portion is under the impervious sidewalk. But that is, in most cases, no justification for expensive artificial feeding. Usually, if the tree is given plenty of water, it will get enough food. If it does not, a top dressing of manure over the boulevard will give the grass a much needed boost, and what gets past the grass will usually be enough for the tree.

While the tree is young it should be trimmed from time to time to keep water sprouts from developing on the stem, to prevent it from forming a fork too close to the ground and to discourage the development of abnormally long, sweeping branches. When this has been accomplished let it alone.

The Pediatrician's Point of View

By Dr. Irvine McQuarrie

From the point of view of practical pediatrics, the Dionne quintuplets are of surpassing interest. Since exact knowledge regarding the nutritional and other requirements of newborn infants has been acquired almost entirely during the past quarter of a century, very few such severe tests of the physician's skill along the lines of infant care as that offered by these babies have been recorded. Without such knowledge and its efficient application it is almost certain that the fate of these sisters would have been that of practically all preceding cases of quintuplets, namely, early death for all or for all but one or two of the five.

The most exacting problems in such cases are those concerned with the prematurity of the babies, since their birth takes place long before they have reached the size and degree of development attained by a normal full-term infant. The fact that the mortality even among single or twin-birth premature tends to be excessive in spite of good care, makes the survival of these quintuplets phenomenal. The incomplete development of the premature baby's nervous mechanism for the automatic regulation of his respiration and his body temperature, the feebleness of his digestive powers and his high susceptibility to acute infections are the factors which make his life so hazardous. By the use of incubators and efficient methods for conditioning the air, by supplying a sufficient quantity of properly collected and preserved human milk and by the employment of modern isolation technique, those who have taken charge of the Dionne quintuplets have succeeded admirably in their unique pediatric experiment. With vigilant continuation of the present program throughout the first year of their lives and with the proper use of methods now available for preventing both nutritional and contagious diseases, these infants probably have as good or a better chance for survival as the average infant brought up in a civilized community.

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Six Veteran Faculty Men Will Retire

Age Limit Reached by Teachers in Several Colleges

HAVE DIFFERENT PLANS

Some Have Been With Departments Since Their Establishment

Six well known members of the faculties of various colleges in the University of Minnesota will reach the retirement age this year and either will give up university work entirely or will accept for a year or so more, the part-time appointments that the Board of Regents sometimes approves after a teacher has passed the formal retiring age of 68.

Holding highest rank among those who are to retire are Dean William R. Appleby, who has headed the School of Mines and Metallurgy since it was established, and Professor Andrew Boss, vice-director of the Agricultural Experiment Station at University Farm. Like Dean Appleby, Professor Boss has spent his entire teaching life at Minnesota.

Others who will retire, in part or in full, are Professors Norman Wilds, philosophy; Jeremiah S. Young, political science; Charles Albert Savage, Greek, and Peter Christianson, metallurgy.

Dean Appleby and Professor Christianson have already passed the retirement age and will entirely give up university work. Both have been in the School of Mines since its establishment. When Dean Appleby came to Minnesota as a young teacher in 1891, Peter Christianson was a member of his first class.

With the exception of Professor Young, who taught for considerable periods at teachers' colleges in Colorado and at Mankato, all have spent what might be called their entire teaching lives at the University of Minnesota. The only exceptions would be periods as young instructors teaching assistants before they came here.

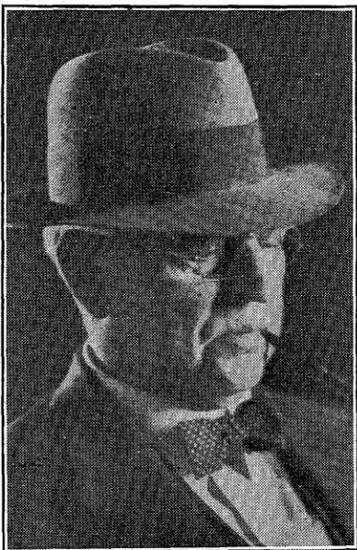
Three, Professors Savage, Boss and Christianson, have been residents of Minnesota since boyhood, although Professor Boss, who was born on a farm near Wabasha, is the only one truly a native of the state. The Savages came to Minnesota from Massachusetts when Dr. Savage was a boy. Professor Christianson was born in Denmark.

Of the men who are now retiring only Professor Young has come to Minnesota since the turn of the century. Dean Appleby came to Minnesota in 1891, Andrew Boss finished the school of agriculture in that year and became foreman at University Farm; Professor Christianson has taught since 1894, Professor Wilde came to Minnesota in 1898 and Professor Savage in 1899. Professor Young joined the faculty ten years later, in 1909.

Came from Columbia

Dean Appleby was born in Hoboken, N. J., in 1865 and was graduated from Williams College in 1886. Subsequently he did graduate work at Columbia university where he also served as assistant to Professor P. de P. Ricketts, professor of assaying and secretary of the alumni association. In the next two or three years he held a number of positions connected with the sale of mining machinery, or in laboratories, and in 1891 he came to the University of Minnesota, on Professor Ricketts' advice. At first he served as professor of mining and metallurgy. In those days the School of Mines was more on paper than an actuality, although the courses were taught. At one time it would be independent, then it would be in the College of Engineering, then taken out again. It was not until 1900 that the School of Mines and Metallurgy was created.

Six Veteran Minnesota Teachers Who Are Retiring



Dean W. R. Appleby



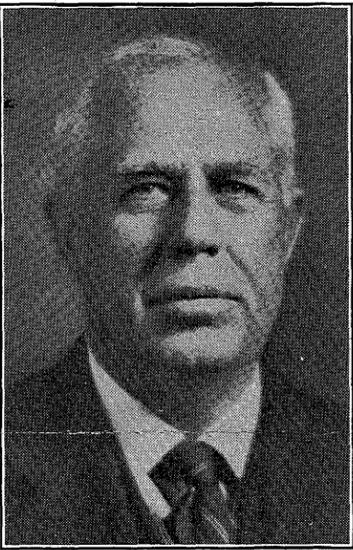
Professor Andrew Boss



Professor Norman Wilde



Professor C. A. Savage



Professor Jeremiah S. Young



Professor Peter Christianson

Summer School Plans Complete Director Says

Ten Days Institute for Clergymen to Be an Innovation

AID ADULT EDUCATION

Special Programs Set in Nursing, Economics, and Physical Education

A ten days institute of adult education and a ten days short course for clergymen and lay leaders will be among the unusual offerings in the University of Minnesota summer sessions that will follow the end of the spring quarter. A special group of graduate courses in economics and business administration, summer courses for parents, and home economics teachers, as well as undergraduates, will be presented by the Institute of Child Welfare, and more than usual offerings will be arranged by the department of sociology and the department of physical education and athletics. Arrangements have been completed by T. A. H. Teeter, associate director.

In the latter department the football coaching course, directed by Bernie Bierman, will run from June 19 to July 9.

Outgrowth of a project President L. D. Coffman has been fostering to make the university's facilities more readily available to professional groups, the institute for clergymen will run from July 9 to the 19th. Those who enroll will have the opportunity of attending two daily series of lectures, spending their mornings on the main campus and the afternoons at University Farm. For the most part the lectures will be in the fields of the social sciences, including sociology, economics, political science, history, and in psychology. While at University Farm the relationship of these sciences to agriculture will be discussed. The period of this short course overlaps with that of the institute of adult education, which will run from July 8 to 18. In this program there will be courses for the following groups: directors of forums and discussion groups, parent education workers, directors of health and hygiene work in adult education, adult education workers in rural communities, teachers and directors of music programs for adults, directors of debate and dramatics, teachers of handicrafts and shop courses, home economics, and physical education for men and for women.

In the graduate courses in economics that will be offered, the following subjects are listed: Advanced general economics, income and consumption, advanced general accounting, money and banking, business cycles, corporate finance, labor problems and trade unionism, economics of public utilities, analysis of recent economic legislation, tariff and national prosperity, current problems in taxation, and a research seminar in price dispersion.

The School of Nursing and the department of preventive medicine and public health will offer summer courses, both in the first of the two summer sessions. These will be for registered graduate nurses, although registered nurses lacking university entrance requirements may qualify under special arrangements. In the public health nursing course, credits earned may be applied toward a certificate in public health nursing or a bachelor of science degree in public health nursing for graduate nurses.

Of interest throughout the nation as well as at Minnesota, and a notable contribution to those who attend the first summer session will be the summer meeting of the American Association for the Advancement of Science.

"Caveat Emptor" Still Good Rule When Buying Certain Motor Oils

But Study Shows Sevent-eighths of Premium-priced Products Are Right

More than two-thirds of all engine oils purchased by motorists meet the requirements set down by the Society of Automotive Engineers (SAE) but the buyer can not wholly depend on stations to provide what he asks for, as approximately one-third of all oils bought for less than 30 cents a quart fail to meet SAE viscosity requirements. Among the premium-priced oils, selling for 30 cents or more a quart, seven-eighths meet requirements, but one-eighth do not. Many desirable oils sell for less than 30 cents and some for less than 20 cents.

These are among the results of a comprehensive testing of motor oils bought by the quart at a large number of twin city stations by Professor B. J. Robertson and his associates, working in the Engineering Experiment laboratories of the University of Minnesota. Each type of oil asked for was bought three times at the same station, the same request being made each time.

Viscosity, the bulletin explains, is the property of adhering to the metal surface and forming a protective film over it. Variations in viscosity requirements as set up by the Society of Automotive Engineers are so broad, say the authors, that there is no excuse for any oil failing to meet them. They are four or five times as broad as those permitted by airplane requirements.

Oils were tested also with respect to flash point, or volatility, pour point, set at five degrees above the temperature at which an oil congeals, carbon residue and corrosive qualities. All of the oils tested, with one exception, were

Press Publishes Bird Portraits

Plates from Dr. Roberts' Book to Appear in New Form

"Bird Portraits in Color," by Dr. Thomas S. Roberts, director of the Natural History Museum of the University of Minnesota, has been chosen by the jury of the American Institute of Graphic Arts for its fifth annual exhibit of American Book Illustration, the University of Minnesota Press, publisher of the book, has been informed.

The illustrations which put this book on the Institute's list are ninety-two quarter-page color plates, reproduced by a seven-color offset process from the original water-color paintings by Allan Brooks, Walter A. Weber, Francis L. Jaques, George M. Sutton, W. J. Breckenridge, and Louis Agassiz Fuertes.

Dr. Roberts' book, published last September and a best seller in the Twin Cities and many other places ever since, was exhibited with the other books selected at the Architectural League, 115 East 40th Street, New York City, March 19 to 30.

called remarkably free of acids and none was corrosive. Flash point was generally higher as price advanced, but there was no decided trend with respect to pour point or carbon residue.

Some Uniformly Good Stations that sold desirable oils the first time they were visited were found to provide uniformly good oils thereafter, the investigators found. They also state in

Mothers to See Everything at U On May 11 Visit

President L. D. Coffman has set Saturday, May 11, as Mothers' Day at the University of Minnesota and has sent letters to the mothers of all students urging them to pay a visit to the campus at that time.

Many mothers also will come to the campus on Thursday, May 16, for Cap and Gown Day when the senior students will appear in the traditional academic garb of those who are about to graduate.

Mothers' Day is set aside each year to give the mothers of students a chance to inspect any part of the university. Whether their curiosity concerns classes, teachers, living quarters, meals, buildings, laboratories, the president, the deans or the athletic plant, they are encouraged to ask questions and to tell what things they would like to see.

The Mothers' Day dinner at night in the ballroom of the Minnesota Union will be the culminating event of the day.

After visiting around in the morning mothers will be the guests of their sons and daughters at noon. For those who do not care to visit student homes or off-campus restaurants an attractive luncheon at reasonable prices will be served in the Early American room of the Union.

At 2:30 mothers will be guests at a musical program in Northrop Auditorium, in which Professor Earle Killeen will present student singers in selections from recent musical productions. Following this, at 4:30 in the foyer of the auditorium a reception will be conducted, at which time members of the administration and faculty will be on hand to greet the guests. The mothers will gather in the Union for dinner at 6 p. m.

(Continued on page 3, column 1)

(Continued on page 4, column 4)

(Continued on page 4, column 5)

Finds Lower Intensities Meet Reading Needs

Dr. Miles A. Tinker's Researches Test Power of Lights and Eyes

For all but abnormal eyes or for the reading of poor print, light of an intensity of from 10 to 15 "foot candles" provides ample illumination and a margin to protect the safety of the eyes, according to a study by a University of Minnesota psychologist, Dr. Miles Tinker. His results refute, he says, recent claims made by some scientists that light should be of an intensity ranging from 25 to more than 100 "foot candles" to function adequately.

A foot candle is the light cast by a candle at the distance of one foot. In terms of watts with which electric bulbs are marked, a 40 watt bulb produces 10 foot candles at 26 inches from the light, about the distance of the average reader, and 15 foot candles at 21 inches. A twenty-five watt bulb produces 10 foot-candles at 19 inches and 15 at 14 inches.

Fifteen "foot candles" and more may be necessary for weak eyes, for old persons, or in the case of poor type, Dr. Tinker said.

Specifications of light intensity that fulfill the requirements of "hygienic vision for the reading of legible print by the normal eye" are given as follows: "For direct lighting with poor distribution, three to five foot candles; for combinations of direct and semi-indirect illumination, frequently found in homes and offices, five to ten foot candles; for good light distribution in homes and offices, 10 to 15 foot candles."

The higher intensities are called safe for the eyes only in indirect lighting, without glare and with good distribution.

"With well diffused indirect lighting," says the report, "the intensity may be increased to any level desired, but with systems where the light is not well diffused the higher intensities result in increased glare and should be avoided. If print paper is glazed or shiny, glare becomes more annoying as the intensity of the light becomes greater."

Uniform color of light is also an aid in reading, Dr. Tinker said. The mercury vapor lamp, producing almost uniform color, is good for indoor illumination. Natural light is called easier on the eyes. Among artificial light colors, yellow is best to produce visual acuity, followed in order by yellow-green, orange, green, red, blue-green and blue. But if the intensity is adequate and the reading materials are clear the difference between colors is small.

"There is no sound basis, for example, for the belief that the kerosene flame is a more hygienic light than modern types of illumination," Dr. Tinker said, "and reading is just as fast in light from a tungsten lamp as from a mercury arc."

The reading experiments were conducted with the co-operation of students at the University of Minnesota.

Undercooked Pork A Dangerous Food

To eat raw or undercooked pork is to run the risk of a dangerous and sometimes fatal disease, known as trichinosis, says Dr. W. A. Riley, chief of the division of entomology, University Farm, St. Paul. Cases of this disease have been rather frequent in recent years, yet it is easily avoided by strictly avoiding pork in all forms, that has not been thoroughly cooked.

Trichinosis is caused by a tiny worm, too small to be seen without a microscope, which lives in the flesh of infected hogs, and if not killed by cooking, infects the person eating the meat from these animals. Trichinosis affects persons of either sex and all ages, regardless of nationality.

Recent studies by the University of Minnesota show that the infection is much more common than has been supposed. While a light infestation is often manifested merely by intestinal pains and diarrhea, with a light fever, heavier infestation results in serious and long-continued illness and not infrequently in death.

Faculty Men Win Fellowships



Dr. Harold C. Deutsch



Dr. Tremaine McDowell

Spring Burning Decried in Warning

Emphatic warnings that "spring burning" of meadow and brush lands does serious and in some instances irreparable damage to wild life, to the soil, and to native plants, were issued in April by two members of the University of Minnesota faculty.

Dr. Otto Rosendahl, head of the department of botany, pointed out that spring burnings destroy a considerable part of the humus in the soil, which leaves the earth less able to retain water, causes a decrease in the nitrogen content, when nitrogen is the constituent of which many Minnesota soils are short, and destroys millions of native plants and shrubs. The ashes provide only a small amount of potash as fertilizers, mostly on soils that contain plenty of potash.

Walter J. Breckenridge of the staff of the Museum of Natural History declared that those who wished to exterminate quail, prairie chickens, ruffed grouse and pheasants could do no better than to set spring fires. Areas in eastern Anoka county, north of Minneapolis, are burned every spring, he said, which if left under natural conditions would produce thousands of these game birds and make important permanent additions to the wild life supply.

"Brush burning is especially damaging to quail," said Mr. Breckenridge. "These birds are now about holding their own, and with a series of favorable seasons could increase in number materially. Quail must have brush in which to live, otherwise hawks and owls would exterminate them. This brush should be near fields where an abundance of plant seeds are produced. Burning destroys both the brush and the plants and seeds."

Urges Use of Minnesota Seed

"While it is very necessary to make some adjustments in order to have enough seed to go around this spring, there is no call for the use of southern grown alfalfa seed in Minnesota," Professor A. C. Arny said recently. "Prices of northern grown alfalfa seed are not so high as to be prohibitive. In that respect alfalfa seed for planting in 1935 is in a very different position than most of the other legume and grass seeds. Kansas alfalfa seed has been given a thorough trial in Minnesota. Even for use in southern Minnesota, Kansas grown common alfalfa does not compare favorably with northern grown common seed. In central and northern Minnesota, Grimm and Ladak alfalfa seed are the only kinds recommended."

Canadian Historian Speaks

Dr. Lawrence J. Burpee, Canadian historian and Canadian secretary to the International Joint Commission, spoke at the University of Minnesota Tuesday, April 16, presenting his widely-known illustrated lecture, "An Animated Map of Canada." This is a pictorial account of the search for the western ocean, involving the story of westward exploration and discovery. It retells, in part, the story of his book, "The Search for the Western Sea." He spoke in the auditorium of the Physics building at 3:30 p. m. That night he spoke in the Minnesota Historical Society building under auspices of that society.

Two University of Minnesota faculty members have received outstanding honors in the past few days, one winning a Guggenheim Memorial Fellowship and the other a fellowship from the Social Science Research Council.

Dr. Tremaine McDowell, associate professor of English, whose specialty is American literature, is a recipient of a John Simon Guggenheim Memorial Fellowship that will enable him to spend his next year in study. He will devote his time to working on a biography of William Cullen Bryant, to be entitled, "Bryant in Massachusetts." He will be in New England much of the year.

A graduate of the University of Michigan, Dr. McDowell did his advanced work at Yale and was a member of the Yale faculty for three years before he came to Minnesota. He is the author of, "The Romantic Triumph: American Literature from 1830 to 1860," and has written on Bryant, Washington Irving, and Fenimore Cooper.

Dr. Guy Stanton Ford, dean of the Graduate School at Minnesota, and Professor Marjorie Nicolson of Smith College, formerly a member of the Minnesota faculty, were members of this year's committee of selection. Forty-seven fellowships were awarded.

Dr. Harold Deutsch, assistant professor of modern and contemporary American history at the University of Minnesota, will spend next year in Germany, studying particularly the effects on local governments of the Nazi national regime. For this purpose he has received a Social Science Research Council traveling fellowship that will finance his year of European travel and study. Professor Deutsch, a graduate of the University of Wisconsin with advanced degrees from Harvard, has taught at Minnesota since the fall of 1929. In Germany he will spend approximately the first half of the year in Berlin and then will go to Hamburg, East Prussia, South Germany and the Saar. He will leave the United States early in September. In Berlin he will study in the Hofschule fur Politik.

Medical Broadcast Program for May

Dr. William A. O'Brien, associate professor of preventive medicine and public health, will continue in May his weekly series of broadcasts over WCCO on behalf of the Minnesota State Medical association. He will speak Tuesday mornings at 10:30. Topics: May 7, Hay Fever; 14, Anemia in Children; 21, Peptic Ulcer; 28, The Sixth Year Molar.

Reports on Virus Diseases

Dr. Robert G. Green, professor of bacteriology at the University of Minnesota, recently took part in New York in a symposium on filterable viruses conducted by the American Society of Bacteriologists and Pathologists and the American Society of Immunologists. He discussed two peculiar diseases, both discovered by himself, that are due to a virus of the filterable type. One has to do with a strange illness contracted by two owls that were sent to his laboratory. He also read a paper on "Immunity to dog and fox encephalitis," a disease on which he has done extensive research work on behalf of Minnesota and Wisconsin fox farmers.

Botanist Says Germany Seems Rather Well Off

A drive of 8,000 miles through German territory last summer failed to give Dr. George O. Burr of the department of botany the impression of a distressed and chaotic Germany that was presented to him in continental and English newspapers as soon as he passed the borders, Dr. Burr said recently.

He gained the impression during his travels that Germany was getting along famously. Berlin was crowded with new cars and the people were wearing good clothes. Hotels, restaurants and theaters were crowded. At the same time, he said, uniforms were much in evidence and he saw a great number of children garbed in a way to remind one of boy scouts.

Dr. Burr, recipient of a Guggenheim fellowship, spent a year on the continent visiting various laboratories to study problems of photosynthesis by plants. He spent periods at laboratories in the Universities of Cambridge, Lund, in Sweden, Copenhagen, and Utrecht. Many of the continental laboratories are splendidly equipped, he reported, several of them having been replenished by the European agency of the General Education Board, associated with the Rockefeller Foundation.

Dr. and Mrs. Burr ferried across the Baltic from Sweden to Germany and made a continental tour that took them to Berlin, Dresden, Czechoslovakia, Vienna, and then through the Tyrol to Salzburg, Munich, Oberammergau, Constance, Freiburg, and down the Rhine through Heidelberg and Wurms into Holland.

By purchasing the "tourist mark" at 27 cents, which must be expended within Germany, he made the trip reasonably, he said. He found the people friendly and the officials courteous.

"It was not until we had come out across the borders once more and begun to read the press of other nations that we had the slightest idea how badly the Germans were faring," Dr. Burr declared.

Parents Will Hear Betternews Again

The Betternews, that interesting and instructive "family" created by the University of Minnesota's Institute of Child Welfare, will be on the air again during April and May, according to Dr. John E. Anderson, director of the institute. They will again describe and discuss some of the social and psychological situations that our children find themselves in, and will tell what wise parents should do about these things, or not do about them. Mrs. Marion L. Faegre and Mrs. Pearl Cummings will be the speakers, alternately, Mrs. Faegre making the first of the lectures here listed. April 4, That guilty feeling; 11th, Quarreling; 18th, Learning to talk; 25th, Good habits; May 2, The delinquent; 9th, Don't touch; 16th, Getting along with people; 23d, Truth and falsehood; 30th, Is competition good for children? June 6, Allowances.

Will Direct 'U' Classics Study



Dr. Marbury B. Ogle

Latin and Greek To Be Combined Under Dr. Ogle

New Department Head Presents Series of Lectures on Archeology

Professor Marbury B. Ogle, new head of the department of Classical Languages, has been delivering a series of talks on classical archeology this winter as a lecturer for the Archeological Institute of America. He has appeared before sections of the institute at the University of Chicago; Western Reserve University, Cleveland, O.; the Detroit section, University of Iowa section and the University of Wisconsin section. Before coming to Minnesota Dr. Ogle was for several years head of the American Academy at Rome, during which time he became thoroughly familiar with the results of recent excavations conducted by the Italian government.

At Iowa City he also spoke before the Iowa Association of Language Teachers. Among his subjects were the remains of the Etruscans, recent Roman excavations, Horace's Sabine farm, and "The romantic movement in antiquity." Other lectures have been delivered before the Professional Men's club of St. Paul, where he discussed conditions in modern Italy, the Minneapolis Institute of Arts and the Latin club of the Stillwater high school.

On April 18 to 20 he and Professor Robert Cram attended in St. Louis the meetings of the Classical Association of the Middle West and South. There Dr. Ogle read a paper on, "The re-making of Rome."

Professor Ogle, a Virginian by birth and a graduate of the Johns Hopkins university in Baltimore, taught for many years at the University of Vermont and subsequently at Ohio State University. On leave from Ohio State, he served as head of the American Academy at Rome for several years before he came to Minnesota last fall to take over the duties left by the retirement of Professor Pike.

With the retirement this spring of Dr. C. A. Savage, professor of Greek, Latin and Greek will be combined in a department of classical languages under Dr. Ogle.

Planned Land Use Urged by Writers

Jessness and Nowell Suggest New Method of Utilizing Resources

With approximately half the taxable land in northeastern Minnesota reverting to the state for tax delinquency, some new plan is needed if an immense waste of taxpayers' money and human effort is to be prevented in the future, say Professors Oscar B. Jessness and Reynolds I. Nowell and their associates, whose book, "A Plan for Land Use in Northern Minnesota: A Type Study of Land Utilization," has been published by the University of Minnesota Press.

In the fourteen northern counties covered by this report—Aitkin, Beltrami, Carlton, Cass, Clearwater, Cook, Crow Wing, Hubbard, Itasca, Koochiching, Lake, Lake of the Woods, Pine, and St. Louis—only sixteen per cent of the total land area was in farms, the authors found, and only thirty per cent of the farm land was improved. Many settlers were located on land unsuited to farming. For those farmers who are fighting against overwhelming odds for subsistence on land that is incapable of yielding them any adequate returns, they recommend settlement in more suitable areas. Enough good lands are available, they state, to make resettlement in nearby districts feasible. Thus the agricultural land and some of the forest land would remain in private hands; but, the authors declare, "for the vast areas of cutover or burned-over lands there appears no alternative to public ownership and management."

It is planless use of land, these observers assert, that has been responsible for the present calamitous situation in the cutover areas of Minnesota.

Dr. Homer J. Smith, professor of education at the University of Minnesota, will lecture at the Colorado Agricultural College, Fort Collins, for three weeks following Minnesota's first summer session.

Six Veteran Faculty Men Will Retire

(Continued from page 1, column 1)
ated with Professor Appleby as its first dean.

Dean Appleby recalls that when he first came to Minnesota there were no typewriters, no telephones, and few modern contraptions of any sort. He installed a telephone on which he was entitled to a certain number of calls for a flat charge, after which each call cost a nickel. So many people began asking to use his phone that he had it changed to a straight pay station.

When he wanted letters written President Northrop said his secretary could do some of Professor Appleby's work after she had finished his own.

One of Dean Appleby's first classes at Minnesota was in assaying, and when he met it he was surprised to find that mostly girls were taking it. In the catalogue it had been called quantitative mineralogy, and the girls had chosen it as an advanced course in geology. He asked that the girls wear overalls with aprons over them. Some of them did so, but the following year the students in assaying were all men.

It was about the time the School of Mines was established, said Dean Appleby, that Sam Iverson, then state auditor, wrote an article for a magazine of national circulation in which he said the state owned so much iron ore land that the University of Minnesota would be wealthy through all the years. This was widely believed and for several years made it difficult for the university to obtain appropriations because of the belief that it had all the money it could use.

During Dean Appleby's regime the new School of Mines building was erected in 1914-15 and the building for the School of Mines Experiment station in 1922-23. He also instituted the field trip which takes sophomore students to the Minnesota iron ranges and junior students on a tour of western mining centers.

Rainstorm Started Career

At the age of 22 Andrew Boss was still working on his father's 360 acre farm in Wabasha county when a heavy downpour of rain brought circumstances that probably changed the course of his life. S. M. Emery, a state senator and man of influence, was driving near the Boss farm in a horse and buggy when it began to rain so hard that Mrs. Emery, who was with him, became frightened and begged him to find shelter. They went to the Boss farmhouse, Senator Emery being acquainted with the elder Boss. Next day, mellowed by a farm breakfast of fried spring chicken, the good senator began persuading Andrew's father that one of his boys should attend the School of Agriculture at University Farm. So it happened that in the fall of 1899 this young man laid his course to University Farm, a course which led him to a life's work at that place.

Young Boss went to school with \$10 and after milking cows to pay his way, wound up his first year with \$35 to his credit. His graduation two years later, in the spring of 1891, found the authorities offering him \$40 a month and his living to stay on and be foreman of University Farm. Two years later he did his first teaching in the School of Agriculture as assistant to Professor Willett M. Hays.

Early in his career Professor Boss developed two entirely new courses, on neither of which had a textbook of any sort been prepared up to that time. One subject was farm machinery, the other, the farm dressing and curing of meats. Eventually he was teaching farm management and for a time, animal husbandry and agricultural engineering.

As the work of the College of Agriculture expanded a series of reorganizations took place that placed these subjects in departments of their own, until in 1916 Dean R. W. Thatcher made Professor Boss vice-director in charge of the Agricultural Experiment Station, with which duties he retained his professorship in farm management, and is now senior man in that division. Farm management has been consolidated into the department of agricultural economics, under Professor Oscar B. Jesness, agronomy becoming a distinct department.

Duties as a director of the Farm Credit Administration and as a contributor to agricultural papers will keep Professor Boss busy. At

Cosmopolitan Club Members at Kansas "U"



least until F. W. Peck returns to his duties as director of the Agricultural Extension Division he may continue some of his academic work. But a life of teaching farming does not make him wish to retire to a farm. He has golfing that must be attended to and is administrator of several estates. In these are some farms that will provide an outlet for his agricultural propensities.

In Dr. Butler's First Class

Professor Norman Wilde, chairman of the department of philosophy, who came to Minnesota in 1898, as an undergraduate at Columbia university was a member of the first class Dr. Nicholas Murray Butler taught when he joined the faculty of Columbia as a young instructor in philosophy. He recalls Dr. Butler as a remarkably clear and able lecturer who mounted the rostrum on his first day as if he had been lecturing to university classes all his life. When Professor Wilde became full professor here in 1903 he succeeded F. J. E. Woodbridge, now dean of the graduate faculties at Columbia.

Dr. Wilde was graduated from Columbia in 1889 and forty years later, in 1929, received the honorary degree, Doctor of Letters, from his alma mater. He is a native of Dobb's Ferry, N. Y. As a young man he studied at Harvard and in Berlin as well as at Columbia university.

Dr. Wilde believes there has been an increased interest in philosophy since the World war because for so many people the social and moral norms have been shaken. He believes that scientific discoveries stimulate philosophical thought, and are doing today somewhat the same thing that the theory of evolution did nearly 100 years ago.

His studies have been chiefly in the field of political philosophy, and that is the field of his book, "The Ethical Basis of the State," which appeared a few years ago and which Professor C. E. Merriam of Chicago classed as representative of the idealistic theory of the state. Dr. Wilde has written a number of essays on "Philosophers of Faith" and is thinking of bringing them together in a book.

Teaching has improved during his time as a teacher, Professor Wilde believes, but he is opposed to the idea that large classes can be taught as effectively as small. He thinks this is particularly untrue with respect to classes that require discussion of ideas as well as assimilation of facts. Following his retirement Professor Wilde will continue work on a history of political philosophy which will require discussion of ideas as well as assimilation of facts. Following his retirement Professor Wilde will continue work on a history of political philosophy which will require two or three more years for completion.

Dr. Young Has Long Record

Dr. Jeremiah S. Young of the department of political science came to the University of Minnesota in 1909 from the Mankato State Teachers College for the purpose of helping Dr. George

James, then dean of the College of Education, in the task of setting up an extension division. With a young man by the name of Ralph Hess he began extension teaching, and particularly a program of lectures throughout the state. Dr. Young speaking on American government and business law, and Hess on economics. At the end of a year he was made a regular member of the department of political science, and after three years was promoted from assistant professor to professor, which title he has held for 23 years. He has twice been chairman of the department for the period of a year following the departure of other chairmen.

During his time at Minnesota Dr. Young has served on the advisory committee for the minimum wage commission, has been on the Minneapolis charter commission, on the executive committee of the American Political Science association, and has been director of the summer session (1915). He has taught summers in such other institutions as the University of Washington, Colorado and California and has written many articles. His books, "The State and Government" and "Unified American Government," are well known. With his daughter, Elizabeth Young Wright, he has recently brought out a smaller, one-semester edition of the latter book. Dr. Young was superintendent of schools at Fostoria, Ohio, before going to the State Teachers College at Greeley, Colo., from which he went to the teaching position at Mankato. He is an alumnus of the University of Michigan and took his doctor's degree from the University of Chicago. Dr. Young is widely known over the state as a lecturer and commencement speaker. In 1927 he made a trip around the world with his wife and daughter.

Teaches Greek 36 Years

Professor Charles Albert Savage, who is retiring from full-time work in the department of Greek, came to Minnesota from Johns Hopkins university in 1899 at the time when the veteran Dr. Jabez Brooks was retiring and an addition to the faculty was necessary. This spring he will have completed thirty-six years as a member of the Minnesota faculty. He has been head of his department since 1917 when Professor J. C. Hutchinson retired.

Dr. Savage was born in Stockbridge, Mass., but his family moved to St. Paul in the eighties and he attended St. Paul Central high school and the University of Minnesota. At the end of his junior year family circumstances made it desirable for him to enter business, but after working for several years he decided to complete his education. After graduating at Minnesota he studied at Johns Hopkins, where he took his doctor's degree and served as an instructor. Professor Savage's first appointment at Minnesota was as an instructor in Latin, but his professorship, to which he was promoted in 1909, was in Greek.

Despite the loss of interest in the classics that took place thirty or more years ago with the ad-

thirteen members of the University of Minnesota chapter of the Cosmopolitan Club, dedicated to the interests of foreign students, attended the biennial national convention of the organization at the University of Kansas, Lawrence, Kan., a month ago. In the Minnesota delegation were Patience Kidd Nurnberger, national secretary, who is the wife of Dr. Karl Nurnberger of the medical school, Mrs. Frances M. Pierce, secretary of the Graduate school, who is an enthusiastic supporter of the Cosmopolitan club, Dr. Nurnberger, Miss Barbara Bailey, a graduate student who is president of the Minnesota chapter, Selma Mattson, Gerald Renaas Giving, Helen Knapp, Donald Rupp, G. J. C. Uys, Gertrude Chalgren, Linn J. Firestone, William Thomas Owen and Lucille Spelman. Two years hence the convention will be held in Denver, Colo., in June. At Lawrence the club members visited Haskell Indian School as well as the state university.

vance of science, Dr. Savage feels that the classics have at least held their own in the past ten or fifteen years. It is his recollection that the assaults on the classics in American education began in the mid-eighties when no less a person than Charles Francis Adams wrote an article in one of the leading intellectual magazines, under the title, "A College Fetish," with the theme that the classics were overdone and that the interest in them depended on tradition.

Although rather few now study the Greek language, courses described as Greek in English, that cover the literature, mythology, art, life and ideas of the ancient world, are still popular among undergraduates at Minnesota, Dr. Savage said. Until the depression came along these courses were also popular among evening students under the General Extension Division, but in the past three or four years the night class interest has declined as vocational subjects have necessarily been forced to the front.

Dr. Savage's book, "The Athenian Family," has long been well known in the study of Greek life and customs. Study of the lives of the Greeks has been his specialty.

Christianson Born in Denmark

Perhaps the oldest of those who are retiring from the faculty at this time is Professor Peter Christianson of the School of Mines and Metallurgy. Born in Denmark, Professor Christianson in childhood was brought to Minnesota at the age of seven, when he attended the University of Minnesota and was graduated from the academic course in 1890. That was about the time when the iron mines of the famous Mesabe range were being developed, and young Christianson, who went to work as a land examiner for the St. Paul and Duluth railroad, now part of the Northern Pacific system, believed that mining would have a big future in Minnesota. Accordingly he took up the newly established work in mining engineering

Faculty Loses Four Members

Offers from Other Institutions Make Inroads on Teaching Staff

Minnesota is losing four members of its faculties, each of whom has accepted an offer to go elsewhere on terms the university was unable to meet.

After teaching fine arts at Minnesota for six years, Everard M. Upjohn, assistant professor of fine arts, has resigned to become a member of the faculty at Columbia. Centralization of art interest, museums and art publishing ventures in New York City makes the change a desirable one from the professional point of view, Professor Upjohn explained.

At Columbia he will teach the introductory course in fine arts, and will also offer courses in the development of modern painting and the development of American art.

A Harvard graduate who also took his advanced work at Harvard, Professor Upjohn came to Minnesota in 1929 to take charge of the newly offered courses in fine arts in the College of Science, Literature and the Arts.

Dr. Leroy Powers, associate professor of plant breeding, has resigned to accept a government position at a research station near Laramie, Wyoming. There he will devote his entire time to agricultural researches. Dr. Powers is a Minnesota trained man who took his work under Dean E. M. Freeman and Dr. H. K. Hays at University Farm.

Professor William H. Stead, who for two years has served as associate director of the United States Employment Service in Washington under an arrangement whereby he was on leave from the University of Minnesota has definitely severed his connection with the institution to devote his time to work in Washington. In the days of the Employment Stabilization Research Institute he devised so effective a plan of state employment bureaus for Minnesota that the national government took him to Washington and modeled many phases of the national employment service on the Minnesota system.

Dr. Alice Leahy, who has been at Minnesota since 1929 as a lecturer in sociology and a research worker in the Institute of Child Welfare, has resigned to go next fall to Catholic University, Washington, D. C., where she will become an associate professor of sociology at a large advance in salary over the Minnesota figure. Miss Leahy is a Minnesota graduate with an M.A. degree from Columbia.

Before coming to the university she was at one time director of psychiatric social work for the Minneapolis Child Guidance Clinic.

and received his degree in 1894. He was in the first class taught at Minnesota by Dean Appleby and has been his associate through all of these years as a member of the mines faculty. His specialty is ferrous metallurgy, in which field Dean Appleby has described him as "the best man in this country." Professor Christianson also has had charge of the assaying laboratory. He has taught ferrous metallurgy for forty years.

He recalls that he was married on the first day of the new century, January 1, 1901, Mrs. Christianson having been Miss Florence Marie Pinska of St. Paul.

Of the fire which burned out the School of Mines in 1914 when it was housed in the building that was remodeled for the University High school, Professor Christianson recalled that most of the expensive equipment was saved. It was on the lower floors. Although the fire started on the ground floor, it swept up a shaft and did most of its damage on the upper floors. The balances, for example, were in the basement and for the most part were unharmed.

A trip to Alaska is one of the things Professor Christianson plans for soon after he retires. For many years he has lived on the campus. Before the chemistry building was begun in 1912 he lived where it now stands. In more recent years his house has stood at 217 Union street, across Union street from the rear of the Engineering Experiment Station. Few people have ever "stayed closer" to the University of Minnesota than has he.

Dean Alfred Owre: the Man

By Dr. David F. Swenson, Professor of Philosophy

Memorial exercises for the late Dr. Alfred Owre, dean of the College of Dentistry and professor of theory and practice from 1905 to 1927, were held March 14 in the auditorium of the Medical Science building. Dr. Owre became dean of the dental faculty at the Columbia University Medical Center in 1927, from which post he retired in 1933. His death occurred January 2, 1935. The following paper was written by his lifelong friend, Professor Swenson. Other speakers at the memorial service were Dr. Moses Diamond of Columbia university and Dr. O. A. Weiss, oldest member of the dental faculty at Minnesota. Dr. L. D. Coffman presided.

MAN thinks both forward and backward, his consciousness is not wholly imprisoned in the present moment. By remembering the past and anticipating the future he conforms to the demands of time without being wholly subordinated to them; in a very real sense he is conqueror of the passing flux. This endowment is more than a biological weapon. It is an intrinsic value, an inherent access of dignity, a contribution to the riches of human nature, a reminder and a reflection of the presence there of something eternal.

Consider how empty life would be if this were not so. If there were no abiding consciousness in the human community, if human achievement and human suffering left no trace in the memory of the race, if the common life and the individual life passed through time like the flight of birds through the air, or the passage of a ship through the sea, if all human experience were the instant prey of an all-devouring forgetfulness—who would then dare to find a meaning in the life of man?

Occasions like the present testify to the fact that this disconsolate hypothesis is not the truth. We are met to pay tributes of gratitude and affection, of respect and admiration, to one who has long lived and worked among us. We do this not for his sake alone; we would indeed be hard put to it to explain why we think that he either needs it or desires it. We do this chiefly for our own sakes, because we feel the need of giving expression to a profound principle of human life. There is a demand within us and an obligation laid upon us, that the struggles and sufferings which have wrought values into the texture of our common life and its institutions, shall be remembered and treasured, lest a careless oblivion rob humanity of its dignity and our consciousness of its self-respect.

The life work of Alfred Owre is inseparably bound to the university and the college under whose auspices we meet on this occasion. Here around us are focused the chief influences and instrumentalities through which his life became fruitful for the community, the state, the nation and the world. As for myself, I know not by what color of justification I presume to take a vocal part in these proceedings, unless it is simply because I was his friend, privy to certain qualities of his mind and heart, admitted to fellowship with his hopes and ambitions, the inner springs of that activity by which he became a force in the world. I am in honor bound to disclaim all competence to assess or expound the precise nature of those generally admitted contributions he is adjudged to have made for the advancement of his profession and the progress of its technical and cultural training. As layman I must content myself with presupposing all this; my part is to speak of that which I myself understand.

Nevertheless, there is one thing which I believe my friend would like to have me say in this connection, a thing which it is perhaps more fitting for an outsider to bring to mind. Alfred Owre would be the last man in the world to wish it understood, that the work of establishing this institution in its present distinguished place, was the work of its administrative head alone; for the truth is, that this work was in all essential respects a co-operative effort. The success attained here would have been quite impossible had there not been ready to hand, in this community and its immediate environs, a remarkable group of highly gifted men, men of unusual scientific talent, imbued with a strongly progressive professional spirit, some working as

members of the teaching faculty of the college, some as practicing members of their profession only, but all collaborating to create an atmosphere, a spirit and a competence making it possible for the school of which Dean Owre was the head to achieve national and international fame. Such slight and inadequate tribute to Alfred Owre's many colleagues, living and dead, I feel prompted to make here, assured that in this I interpret truly his mind and heart.

Perhaps my audience will pardon one more collateral remark. In the interests of the claims of piety, I wish to make mention of Dean Owre's father. He and my father were friends, brought into sympathetic contact by a common interest in the intellectual problems of religion; both had the distinction of taking such matters seriously. I can still see the grizzled bearded veteran of many experiences, with the finely chiseled aristocratic features, in the garb of sober Quaker gray, canvassing theology with my own father, who had convictions of his own. A listening boy of ten, I was enchanted by the glitter of dialectical sword's play, and plunged into wonder over the sudden changes of scene and prospect developed by the argument. From this father, Dean Owre must surely have inherited gifts of distinction.

Passing to Alfred Owre himself, let us attempt some reckoning of the values inherent in his personality, of which values we have here enjoyed and continue to enjoy the usufruct. This may be done in many different ways, but I propose here to consider four separate items, mentioning particularly an endowment, a passion, a sympathy and a faith.

The endowment in question was that of an extraordinary esthetic sensibility. He had an eye and a love for line and color, for form and arrangement and mass. He had a poet's sensibility to ideas, a poet's imagination and expansion and feeling and enthusiasm. His was not merely prosaic mind, effective only within the confines of the immediate and the obvious. The horizon of his mind compassed the ideal as well as the actual, he brought the infinite into a synthesis with the finite. Hence his vivid distaste for the mediocre, the vulgar and the commonplace; hence his eager quest for everything that was distinguished.

It was an early expression of this esthetic interest which made him a collector—of stamps; it was a later and more mature expression which made him a distinguished connoisseur and collector of that beautiful oriental ware known as cloisonne. It was this which made him extremely fastidious even with respect to the lesser things of life—his garb, his walking-stick, the little instrumentalities of his personal environment. It was this which gave him so strong a grasp of minute detail. It must be reckoned as an entirely pardonable exaggeration, having claims to symbolic truth, to say of Dean Owre that when this college was preparing to enter into occupancy of its former quarters in Westbrook Hall, he made himself personally responsible for every nail and hammerstroke, every stick of lumber and every stroke of the painter's brush. Upon the foundation of this sensibility rested much of Alfred Owre's life.

Perhaps the strongest passion of his life was the passion for the attainment of the broadest possible human culture, the most comprehensive grasp of whatever was significant in human life, past or present. His early training

was by force of circumstance chiefly technical; but this did not serve to confine his interest within the narrow grooves that might thus naturally have been marked out.

As soon as he had the opportunity, he made haste to expand his contacts with the wide world of human thought and feeling and achievement. In part he relied upon the processes of self-education; in part he sought the aid of established institutional agencies. The administrative head of a university college, he did not deem it beneath his dignity to submit himself to the discipline of the classroom; he humbled himself to compete with sophomores and juniors for the acquirement of a bachelor's degree in Arts. What better evidence could be cited for the genuineness of his passion, what better guarantee that it was an inner impulse rather than an external pose? Throughout life he continued to seek the means for enlarging the scope of his humanity. Nothing was so remote or distant but that he found ways of linking it to the life of the present. He was a practical administrator who read Plato, not alone to satisfy some purely private idiosyncrasy, but to help solve the professional problems of the present. Of Alfred Owre it may be said with all possible truth, that nothing human was wholly alien to his mind and heart.

Aristocratic in temper and endowment, Alfred Owre was democratic in principle and conviction. This is no paradox; his democratic convictions sprang from the depths of a social sympathy. He was instinctively drawn to take the part of those who seemed to him neglected and forgotten, dispossessed and defrauded. A single illustration will suffice. In the era before the World War, during his travels in England and on the continent, he had forced upon him the professional observation that through malnutrition and neglect, or for whatever other reason, the teeth of England's wage-workers exhibited a deplorable condition of well-nigh universal decay. Thus far the dentist. The man took occasion to consider farther, and noted in this connection the glaring contrasts between England's pre-war classes and her masses, together with the absence in those times of the modern legal institutions for social help which in other European countries gave expression to a sense of responsibility on the part of the privileged. This stirred him to a strong indignation; he flared out in angry speech against the contentedly callous, the inhumanly unsympathetic, the morally irresponsible among England's ruling classes. In some quarters this attitude was misunderstood. It sprang from a feeling altogether honorable, decent and humane: a genuine social sympathy. In the later years of his life, prompted by the same feeling, he risked the displeasure of some of his colleagues in the dental and allied medical professions, by lending his support to controversial proposals aiming at the provision of a more adequate health care for the masses. I express no opinion here on the tangled question of ways and means; but I hail the presence in Alfred Owre of this spirit of social sympathy as reflecting upon him a real and everlasting honor.

As a final item, I make reference to that fundamental faith by which his professional life was dominated. In his capacity as educator he committed himself to the principle that the man is more than the technician, the whole greater than any part. He was impressed by Plato's oft-repeated saying, that the ills of the body could not be permanently cured while the soul still suffered from disease and neglect. He interpreted this as implying that real professional advance must ultimately rest on some sort of integration of the part with the larger whole—of dentistry with medicine, of the doctor with the man. It was in the spirit of this faith that he formulated his educational program. This thought was at the root of his desire to interest the professional student in the things of the spirit; he believed that it was in the interests of dentistry itself that they learned to value other things than ease and money. He believed that technical proficiency required to be wielded by an intellect of scope and by a personality of substance. And as a specific item of this larger faith he believed that the frontiers of dentistry must be expanded to reach the frontiers of medicine. For this faith he waged persistent battle, both here at Minnesota, at

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T. E. Steward, Editor, 217 Administration Building
University of Minnesota, Minneapolis

Research Tests Oil Qualities

(Continued from page 1, column 3)

the bulletin that there are many desirable oils in the 20 cent to 29 cent class, and some very desirable oils in the lowest price group of less than twenty cents a quart. At the same time the premium oils were found superior in quality and more uniform as a group, but with serious exceptions that indicated that price does not guarantee quality.

One conclusion says: "Negligence of a serious nature in supplying oil of the required viscosity is to be found among some manufacturers or the retail station attendants, which may well cause excessive wear if not permanent injury to the motors serviced by them."

Some purchases indicated a change of source of supply between each of three consecutive visits, making the station undependable as a source of oil of the required SAE viscosity. In a number of instances requests for SAE 40 or SAE 30 resulted in delivery of other types. In one case SAE 10 oil was provided when SAE 40 had been requested.

Calls Carbon Test Important

Next to viscosity, the carbon test and pour-point are most important, the scientists said. Carbon deposit tests are made by boiling away a small amount of oil and measuring the residue. "Carefully controlled experiments at Mellon Institute have demonstrated that the carbon deposits on piston and cylinder head are related to the Conradson carbon tests," the bulletin says. "Large percentages of carbon residue are considered undesirable."

Of the pour-point it says: "It is reasonable to suppose that in general oils with low pour-points will be less likely to give trouble on account of delayed pumping and heavy starting torque in cold weather."

"It is doubtful," says the bulletin, "whether the flash and fire points bear any direct relation to the usefulness of an oil in an engine. Since the flash point is higher in the paraffin base oils than in the corresponding naphthene base oils, those with higher flash points are more likely to have been made from paraffin base crudes."

Weight of oil, and the terms heavy medium and light are being dropped as general descriptions of the characteristics and are being replaced by the SAE numbers, Professor Robertson points out. Like flash point, weight is of value as an indication of the type of crude from which an oil has come. Paraffin base oils in general weigh less per gallon than do oils from naphthene bases.

Some Other Results

The tests indicate that there is some validity in the claim that paraffin base oils are superior to others, though not all the advantages are on that side. These points are stated:

The paraffin base oil weighs less per gallon than the asphalt base oil. The change in viscosity with temperature is less for the paraffin base oil, i. e., the viscosity index is greater.

The Conradson carbon is greater for the paraffin base oil.

The flash and fire points are lower for the asphalt base oil.

The pour-point of the paraffin base oil is higher than that of the asphalt base oil.

Thus the paraffin oils seem preferable for viscosity, even under changing temperatures, and

Columbia, and on the national scene.

Something of the kind seems to me to be true—if not in all respects precisely thus, since no man understands another through and through—the rare gift we cherish in our midst, for whose all too brief presence we are grateful, for whose passing we deeply grieve.

the asphalt base oils for carbon deposit and ease of cold weather starting.

How Oil Does Its Job

Of the primary lubricating quality of oils, viscosity, this bulletin says:

"When a drop of oil is fed to a rotating bearing, it immediately spreads over the entire contact surfaces. If it is desired to remove this oil the bearing will have to be taken apart and wiped thoroughly. In spite of vigorous rubbing a microscopically thin film will still remain on the bearing surfaces. It is this film that protects the bearing surfaces during momentary failure of the oil supply, such as may be experienced in cold weather starting."

"If more oil is fed to the bearing it will be distributed between the rotating surfaces until they are completely separated, provided the oil is thick enough so that it cannot be squeezed out by the load. The separating film becomes more stable as the temperature of the film rises and the oil becomes thinner."

Summer School Plans Complete Director Says

(Continued from page 1, column 5)

which will be conducted on the university campus June 24 to 29 inclusive. Just preceding these sessions the American Physical Society will meet on June 21 and 22.

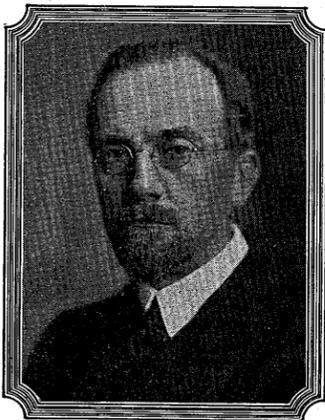
The Triple-A, S has sections devoted to most of the various sciences and a majority of these sections will be active, covering such fields as mathematics, physics, chemistry, astronomy, geology, entomology, psychology, plant breeding, zoology and the like. And joined with these regular section meetings will be sessions of the American Phyto-Pathological society, American Society of Plant Physiologists, Botanical Society of America, Corn Belt section, American Society of Agronomy, Dairy Science section, Ecological Society of America; Great Plains section, American Society of Horticultural Science; American Meteorological Society, Minnesota section, American Chemical Society, Minnesota State Medical Association, and the Society for Research on Meteorites.

Many of the meetings will be open to all, and the summer session student with an interest in science will find a rich and varied fare spread before him.

The special programs of courses already mentioned are the points of emphasis such as the summer session selects each year for more than ordinary attention, but in addition the usual large number of offerings will be available in the principal fields of instruction. The first session will begin June 17 and continue until July 27. The second will run from July 27 to August 31. Inquiries and communications concerning the summer sessions should be addressed to Professor T. A. H. Teeter, associate director, administration building, or to the registrar of the University of Minnesota, Rodney M. West.

In addition to the football course the department of physical education and athletics will offer courses in baseball coaching and basketball, both under the regular coaches, several courses in the professional training course for those preparing to be physical directors and teachers, and a group of auxiliary courses.

Minnesota summer session students have the advantages of the fine lakes and beaches in Minneapolis, of the many weekend opportunities at Minnesota lake resorts, of the university's golf course, the swimming pools in the new athletic building, the campus cafeteria service and the dormitories, Pioneer Hall and Sanford Hall.



Dr. Alfred Owre

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Largest Science Association Will Meet on Campus

June 24 to 29 Are Dates for Gathering Here of A.A.A.S.

COVERING BROAD FIELD

American Physical Society's Program Scheduled for Few Days Earlier

By Austin H. Clark,
Director of Press Service

The American Association for the Advancement of Science will hold its summer meeting this year in Minneapolis, from June 24 to

The meetings of the association serve two purposes. In the first place they provide opportunity for exchange of ideas among research workers in the same or similar lines of science, through the presentation of papers and through social intercourse. In the second place they offer the opportunity of taking science to the people through the medium of popular talks by our outstanding scientific men. These talks are given on a wide range of scientific subjects, which they treat in a broad way and in language intelligible to all.

These popular addresses by nationally and internationally known authorities deal with the exploration of unknown or little known parts of the earth's surface, with the study of unknown or little known parts of, or objects in, the skies, and with the most recent advances in the natural and social sciences. They also deal with the problem of just how science affects the whole people in their daily lives, explaining the progress of research in terms of ultimate benefit to all.

These more or less popular addresses and special features are presented in addition to the regular programs of the sections, and do not in any way interfere with them.

Important Medical Speakers.

Among the more significant features of the coming meeting will be a two day joint session of the section of medical sciences of the association and the Minnesota Medical society. One of the most important addresses at this joint session will be given by Dr. William P. Murphy, of the Harvard Medical school, a recent recipient of the Nobel Prize in Medicine, who will speak on the subject of anemia. An equally important address will be given by Dr. Richard P. Strong, also of the Harvard Medical school. Dr. Strong, who has recently returned from a year's study in Africa, supplementing long tropical experience, will discuss the distribution and transportation of diseases.

Dr. Strong's address is one of the so-called Maiben lectures. These lectures are made possible through the generosity of Mr. Hector Maiben, a Scotch boy born in England who when young came to the United States and spent most of his life as a farmer on the prairies of Nebraska, at his death bequeathing all his property to the association.

An unusually comprehensive and instructive program of timely and informative addresses on agricultural and allied subjects and problems has been arranged.

For those interested particularly in the natural sciences one of the most attractive features of the meeting will be a number of field trips on which the characteristic faunal, floral, geographical and geological features of this area will be explained.

Former Minneapolis Meetings

This region, however, is well known to many of the members of the association who still cherish most pleasant recollections of a previous meeting in Minneapolis. Indeed, this summer's meeting will be the third that has been held in that city. The first Minneapolis

(Continued on page 3, column 3)

Spring Scene on the Minnesota Campus



Bierman Speaks of Grid Prospects; Tells Scribe All in Brief Interview

Strawberry Crop at Hammond, La., Probably Near Peak Just About Now

The following survey of the prospects for Minnesota's 1935 football team was obtained by the editor of Minnesota Chats from Headcoach Bernie Bierman in the unsigned and unauthorized interview below. Inasmuch as Minnesota won the national collegiate championship in the fall of 1934, Mr. Bierman's words have unusual significance.

Q. Well, Bernie, how are things shaping up for you, as indicated by spring practice?

A. You know, when I was coaching at Montana we had a funny situation. The journalism department used to send its students around in batches to interview the faculty members. Of course not all of the stories were used. They would send, say, ten people in a group to interview a man, and the one who turned in the best story got it printed in the student daily; no, I guess it came out three times a week. They did the same thing with editorials. The one who wrote the best editorial got it printed."

Q. Most people think the squad looks pretty good, except for the guards. What do you say?

A. At Tulane the son of one of the wealthiest men in New Orleans was out for the football team. He had a lot of promise, too, but he weighed about ten pounds less than he should have. He was a terribly serious-minded kid, so he went to the trainer and asked him what he should do to put on weight.

"Well," the trainer said, "the one best way for a kid of your size to put on weight is to drink a lot of milk. You might drink an extra glass with every meal. Drink milk between meals if you feel like it; and, oh, yes, just before you go to bed at night drink all the milk you can. Drink a quart."

"That's all very well for you to say," came back the aspiring football player, "but it's simply out of the question. Why, I tell you, we don't have that much milk in the house."

Q. Lund was a pretty good left half, wasn't he, coach? Do you think you're going to have anyone in there to fill his shoes?

A. Do you know, I never saw a small town with half of the

football enthusiasm that you'll find in Hammond, La.? There's a real football town. It's halfway between New Orleans and Baton Rouge, and they almost twist themselves in knots trying to attend games at Louisiana State and Tulane on the same day. I never saw anything like it. Great strawberry town, Hammond. Why in the spring they say they ship \$6,000,000 worth of strawberries up the Illinois Central, not all from Hammond, of course, but from the Hammond district. Riding around there you would hardly see a strawberry. The patches are all tucked away in the woods on small farms. But it sure amounts to a big total.

Q. Of course, Bernie, if you feel that you are saying too much, and there is any of this stuff that you'd like to have me keep in particular confidence, I'll be glad to do so. That about the wealthy family in New Orleans not having very much milk in the house, for example. You wouldn't want Michigan to get ahold of that, would you, old man?

A. Same thing up the line from Hammond a little way. There's a town in Mississippi, I forget its name, but, boy, you should see the asparagus they ship out of there.

Q. That's fine, and you may be sure that I'll respect your confidence. With prospects shaping up in that way Minnesota should soon be able to wreck the old stadium just to make a PWA job of building a new one. So I'll only make one more inquiry. Do you think you are going to be safe at center next fall?

A. Say, maybe it wasn't neat the way Sam Zemurray got control of the United Fruit Company. When he sold out Cuyamel Fruit to them he got a big block of stock and several million dollars in cash. Sam retired, but when the depression came on and United went down to about \$10 a share he got worried and decided he'd better step in to protect his own interests. So he went around quietly picking up proxies. It was just before the annual meeting. No one suspected what was going on. Then came his scoring play. He went up to Boston, and when a debatable matter came up before the board of directors old Sam just stood up and said, "This is what we will do. I've got control of this company

(Continued on page 3, column 2)

Annual Spring Events on Campus Crowd Each Other

Mother's Day and Cap and Gown Day Ceremonies Are Among Them

ENGINEERS CELEBRATE

Final Lecture Series of Year in Fields of Social and Physical Science

From every Minnesota county and from hundreds of communities throughout the state young men and women who have been attending the University of Minnesota put on the formal cap and gown that designate the bachelor's degree and took their places in the solemn Cap and Gown day procession on Thursday, May 16.

On that day approaching graduates assume their full dignity as seniors. In Northrop Auditorium where the exercises took place, several hundred names were announced of those elected to honor societies, or who had won the many scholarships, fellowships, special honors and prizes that are awarded on Cap and Gown day.

Membership in such honor organizations as Phi Beta Kappa in the Arts College, Sigma Xi, scientific honor society, Tau Beta Pi in Engineering, or Gamma Sigma Delta in Agriculture were awarded to many undergraduates and to some graduate students at these exercises and prizes amounting to several thousand dollars, all of them endowed by gifts from interested supporters of education, were distributed.

Cap and Gown day also offers one of two occasions in the spring when the president of the university, Dr. L. D. Coffman, has an opportunity to present a message to the departing class of seniors, the other being at the June commencement exercises.

The procession is always one of the most colorful of the year. It is led by deans and faculty members, wearing full academic costume, many of them in the gowns and hoods representing English, French, German and Italian universities, with decorations that date from the era of mediaeval pageantry. Bachelors, masters and doctors of philosophy in the student body are designated by markings on their costumes, stripes of color or hoods for those with the highest degree.

Mother's Day Events

On May 11 was held another of the traditional spring events at Minnesota, Mother's Day, on which the mothers of all enrolled students are invited to visit the campus, spending the morning in visiting classes and living quarters of their sons or daughters and meeting student friends and members of the faculty. At noon they were the guests of their young people at various luncheons. In the afternoon the regular entertainment program began with a musical performance in Northrop Memorial Auditorium, presented by the University Singers, who offered parts of various productions of the past two years. A reception in the foyer of the auditorium followed, when the campus visitors met and chatted with administrative officials, members of the faculty, and deans. The Mother's Day dinner was served in the Minnesota Union at night.

Engineers Day, with its fantastic ceremony of the knighting of St. Patrick, "who was an engineer" according to the school's tradition, the crowning of the Engineers Day queen, the "green tea" and other annual ceremonies, took place on May 17. Originally conducted on St. Patrick's Day, March 17, this ceremony was postponed several years ago to a time of more clement weather.

June 17 Set for Commencement

The University of Minnesota commencement exercises at the end of the college year will take place the evening of Monday, June 17th, in Memorial Stadium. President L. D. Coffman will present the degrees to between 1,200 and 1,300 persons. Dr. Samuel A. Eliot, pastor of the Arlington Street church in Boston will deliver the Baccalaureate sermon on the day preceding commencement, Sunday, June 16. These exercises will be in Northrop Auditorium. Summer session registration will begin on Commencement day, June 17, and classes for the first summer session will start on June 19.

Enrollment in Dental College Mounts Swiftly

The College of Dentistry at the University of Minnesota this year had the third largest entering class of any American dental school, only New York University and Temple University in Philadelphia having more than the 117 new students who entered at Minnesota. The first year class was 53 percent larger than that of the year before, according to Dean W. F. Lasby, numbering 117 as against 76 in the autumn of 1933. Students came from thirteen different states, from Alaska, two from Norway and sixteen from Canada to begin the study of dentistry at Minnesota, Dean Lasby said.

During parts of the year Minnesota has also had a number of graduate dental students enrolled from foreign countries. From Australia have come Robert J. Wright, who took his degree of DDS in December and is now a resident interne in the University hospital, Drs. Patrick May and Cecil Adair. This makes in all nine dentists from Australia who have studied at Minnesota in recent years. Dr. Sigrid Vik has come from Norway to spend a year in study at Minnesota. Drs. Otto Folkendahl and Ragnar Ek, both Norwegian dentists, spent part of the year at Minnesota. They were in the United States on traveling scholarships.

Woman's Social Status Clearer Than Economic

Minnesota Survey Shows Men Students More Doubtful About Competition

SEXES AGREE ON MUCH

"No Woman Too Cultivated for Housework," 92% of Girls Declare

An elaborate test of student beliefs with respect to feminist and anti-feminist attitudes, conducted at the University of Minnesota by Professor Clifford Kirkpatrick, shows that agreement between the sexes is greatest with respect to matters of woman's status and conduct, and least in the economic category. Only a small percentage of either sex among those answering the questionnaire expressed vehemence, represented by double-checking, or feminist items in the domestic and political categories or on anti-feminist items in the category of conduct and status. The report says that the status of women in the domestic sphere and in relation to conduct remains confused in the minds of students.

Outstanding in the report is a list of five feminist attitudes checked most frequently by men and one of five checked most frequently by women.

Among the men ninety-six percent voted that if a husband is permitted to divorce his wife on account of insanity the same right should be accorded the wife; 90 percent voted that the wife's desires concerning the number of children she is to bear should be respected by the husband; 89 percent voted that parental authority and responsibility for the discipline of children should be equally divided between husband and wife; 86 percent voted that women should demand money for household and personal expenses as a right rather than as a gift.

Among the women 99 percent voted for equal division of parental authority over children; 97 percent felt that the wife should be able to divorce for insanity if the husband could; 95 percent felt the wife should receive money as a right rather than as a gift; 94 percent said women should be given equal opportunities with men for vocational and professional training and 92 percent voted that no woman is too cultivated to take responsibility for housework.

There was also a listing of the propositions checked least frequently by 241 men and 312 women in the Minnesota student body. Items checked least frequently by men were: The father should have a better claim to the earnings of a minor offspring than the mother, favored by five percent; it is a mistake to permit women to make legal wills, favored by six percent; fewer grounds for divorce should be permitted the wife as compared with the husband, favored by seven percent; it is servile for a woman to give up her own name at marriage, favored by eight percent; it is insulting to women to have the "obey" clause remain in the marriage service, favored by 13 percent.

On the side of the women, none of them would permit the wife fewer grounds for divorce than the husband; two percent thought women should not make legal wills; two percent thought the father should have a better claim than the mother to earnings of a minor offspring; three percent said far too much money is wasted on vocational and professional training for women and three percent said the husband should have the right to dispose of family property as he may please.

Men and women who answered the questionnaire disagreed most widely on these propositions: women should be regarded as less capable than men of contributing to economic production; influx of women into business in direct competition with men should be discouraged; time and energy devoted by a woman to household duties or to a career should be determined by personal desires and interests rather than by sex; women have the right to compete with men in every sphere of economic activity; the wife's desires as to the number of children she shall bear should be respected by



Dr. Karl T. Compton



Dr. A. A. Michelson



Dr. Charles A. Young

the husband; women should be given equal opportunities with men for professional and vocational training; the belief that women are by nature too high strung to hold certain jobs is no more true than many of our superstitions; the husband should be regarded as the legal representative of the family group in all matters of law; there should be a strict merit system of public appointment and promotion without regard to sex.

Forty-four percent of the men voted that one should never trust one woman's account of another, but this belief was held by only one-fifth of the women.

The following ten propositions were those on which the men and women students at Minnesota expressed closest agreement:

Women should always take the passive role in courtship (each sex 29 percent); society should seek to further the economic status of mothers through family allowances paid directly to the mother (men 31 percent, women 30); alimony is an appropriate protection for women as members of the weaker sex (men 24 percent, women 23); if a husband is permitted to divorce his wife on account of insanity the same right should be accorded to the wife (96 and 96 percent); the unmarried mother is morally a greater failure than the unmarried father (men 22 percent, women 24 percent); the use of profane or obscene language by a woman is no more objectionable than the same usage by a man (men 41 percent, women 38 percent); no woman is too cultivated to take responsibility for housework (men 89, women 92); the father should have a better claim to the earnings of a minor offspring than the mother (men 5 percent, women 2 percent); there is no particular reason why a girl standing in a crowded streetcar should expect a man to offer her his seat (men 52 percent, women 48 percent.)

"It is perfectly clear," writes Dr. Kirkpatrick, "that the greatest sex-difference in regard to feminist issues lies in the economic and political-legal sphere. Almost without exception the greatest discrepancy has to do with the economic rights of women. 'Sex slavery' is not an issue and there seems to be perfect agreement in regard to the role of the female in courtship."

Sevareid Publishes Book on Canoe Trip

"Canoeing with the Cree," a book describing a canoe trip from Minneapolis to Hudson Bay and written by Arnold Sevareid, Arts college junior and feature editor of The Minnesota Daily, is being published by the Macmillan company.

Sevareid made the canoe trip with Walter Post the summer after they were graduated from Central high school. He wrote the story of the trip and it was published in two installments in Boys' Life magazine. It will now appear as one of the publishers' group of juvenile books.

Besides his work on The Daily, Sevareid is president of Sigma Delta Chi, professional journalism fraternity.

Miss May Kissock, acting director of the Department of Physical Education for Women at the University of Minnesota, will attend the National Convention of the American Physical Education Association at Pittsburgh, April 24-27.



Left to right above are shown the men who were presidents of the American Association for the Advancement of Science on the three occasions when it met in Minneapolis. Dr. Compton, left, is president this year. Dr. Michelson, University of Chicago physicist, was president in 1910. In August, 1883, when the association first met here, the president was Professor C. A. Young, astronomer, of Princeton University. Neither of the former presidents is living.

Field Discusses Invalid Statutes

Says Courts Might Point Way When Declaring a Law Unconstitutional

What happens to contracts made, to taxes imposed, to offices created and officials appointed, under laws that are later found by the courts to be in violation of the United States constitution?

Oliver P. Field, professor of political science at the University of Minnesota, who will teach at Harvard next year, goes into a detailed discussion of this question in his book, "The Effect of an Unconstitutional Statute," recently published by the University of Minnesota Press. Many different situations may result from a court declaration that a law is unconstitutional, he says. "To one reform movement such a decision is practically a death knell; to another it serves only to strengthen the cause and to result in an educational campaign to enlist public support for a constitutional or statutory change."

Thus, he remarks, an unconstitutional statute may frequently have great economic and political significance, and for this reason the courts should make every possible effort to provide for the readjustment of machinery thrown out of action by their declaration of a law's unconstitutionality.

Courts finding any law unconstitutional ought, he says, in the public interest to go beyond their present practice of merely saying that a law is invalid "and then with a shrug of the judicial shoulder informing the parties and the country that 'as to all the things connected herewith that you now need to know, and to which we could give an answer, this court says nothing.'" If the courts are to continue to share in the work of government, he adds, they must modify the practice of merely declaring a law unconstitutional.

Walter Writes on Library Printing

Members of nearly 30 classes in library printing in New York, Illinois, Minnesota and Wisconsin have been "unintentional collaborators" in the selection of material for "The Library's Own Printing," a manual of printing with particular reference to library needs that has recently been written by Frank K. Walter, librarian of the University of Minnesota. It has been published by the American Library Association.

"The Library's Own Printing" is not a manual for the professional printer or the bibliophile," writes Mr. Walter in his foreword. "Its purpose is to discuss a few of the principles on which effective printing for libraries is based and which are at the same time practicable for small jobs and limited appropriations.

"It is hoped, however, that the suggestions given for the production of good printing may also be of some value to the librarian without much knowledge of printing who desires to know some of the characteristics of a well-printed book."

Following a discussion of library publications Mr. Walter devoted his chapters to "Preparation of Copy and Editing," "Selection of Type and Illustrations," "Selection of Paper," "Designing the Job," "Estimating and Specifications," and "Imposition and Presswork."

The book itself is an example of legible and effective library printing, and in it the author shows that he knows library printing through the things he advises other librarians to learn and do.

Picture Honors Former Physical Director at "U"

Of interest to hundreds of Minnesota alumnae is a picture of Miss Anne M. Butner, director of physical education for women from 1900 until 1912, which has hung in the students' lounge on the second floor of the women's gymnasium for about a year. A gift from Miss Cora I. Butner, the picture was prepared by the Beard Galleries of Minneapolis as a memorial to the former director.

Miss Butner is remembered by many Minnesota women as an enthusiastic supporter of basketball playing by girls and she developed at Minnesota some basketball teams that made enviable records. When a professor in an eastern college protested against having girls play the game, Professor Maria Sanford of Minnesota came to its defense, "I see nothing of which to disapprove in the game. It reminds me of Athenian games, in which girls were fitted for the duties of life by vigorous and strenuous contests in the arena."

Miss Butner also introduced a new scheme of physical education at Minnesota, using wands, barbells, balancing beams, and esthetic dances. She organized a pedestrian club, and members took weekly walks into the surrounding country.

She also was instrumental in starting the movement that led to the erection of the present gymnasium for women.

Following her retirement from her university post Miss Butner took up the selling of life insurance, in which calling she made a notable success.

Farm Experiment Station to Note Fiftieth Year

Andrew Boss, Vice-Director, Has Charge of Semi-Centennial Celebration

FOUNDED IN 1885

Agriculture Now Served by Central Station and Its Seven Branches

A Minnesota Agricultural semi-centennial will be observed at University Farm, St. Paul, Friday and Saturday, June 14 and 15. The celebration, for which plans are rapidly taking shape, will mark the fiftieth anniversary of the founding of the Minnesota Agricultural Experiment Station in connection with the University of Minnesota.

General plans for the celebration are in the hands of Professor Andrew Boss, vice director of the station, as chairman of the arrangements committee. Subcommittees are working up programs of speakers, exhibits, records of achievements, biographies of persons who have made significant contributions to Minnesota's agriculture, and entertainment features. According to plans thus far developed, representative farmers of the state will have a share in the program, and the expectation is that large numbers of farmers will attend.

The Minnesota Agricultural Experiment Station was organized under provisions of the Morrill Land Grant Act in 1885. At that time, the staff consisted of one man, E. D. Porter, who had been appointed professor of agriculture in the university in 1881. Today the staff numbers 170 or more, and the experiment station has grown into a series of stations in various typical Minnesota areas. In addition to the Central station at University Farm, St. Paul, there are branch stations at Duluth, Cloquet, Grand Rapids, Crookston, Morris, Waseca, and Zumbra Heights. The station at Cloquet is a forestry station, and that at Zumbra Heights, near Minnetonka, is a fruit-breeding farm. Special experimental fields have also been maintained in other parts of the state, for the solution of problems of unusual local significance, like that for sand-land and peat-land investigations at Coon Creek, near Anoka.

"The records of achievements of the Minnesota Experiment Station is a long and brilliant one," says Dr. Boss. "In the days of the founding of the station, Minnesota was known largely as a wheat state. But a shift toward diversified farming was then beginning, and the experiment station did much to hasten the change to a more stable agricultural program. An important step in this direction was the development of early maturing strains of corn which brought three-fourths of the state within the cornbelt. Another step was the introduction of a hardy alfalfa, particularly Grimm alfalfa, to the farmers of the state generally. Grimm alfalfa is now widely used throughout the northwest.

"Other contributions to the state's agriculture have been improved varieties of wheat, oats, barley, and rye; the development of hardy varieties of winter wheat; encouragement in the raising and use of sweetclover as a forage and pasture crop; development of methods for the growing of alfalfa on sandy lands; the introduction of new varieties of fruits, including such outstanding fruits as the Latham and the Chief raspberries, the Haralson apple, a long list of splendid plums, and a number of strawberries; the development of disease-resistant field crops; the establishment of scientific dairy feeding standards that are now used the world over; promotion of the co-operative creamery movement; solution of feeding problems for producers of meat animals; working out of methods of insect control, and progress toward the control of animal diseases.

"Altogether, we feel that the completion of fifty years of such work warrants a real 'celebration,' and the experiment station staff is greatly interested in providing a program that will show, in a graphic and striking manner, the progress that has been made," said Professor Boss.

Word 'Ski-U-Mah' Not Really Indian, Story of Its Etymology Reveals

Famous Phrase Was Made Up in Effort to Urge on an Early Soccer Team

The famous "Ski-U-Mah" yell of the University of Minnesota, little used today, but perpetuated in memory and in the name of the student humor paper, was recently the subject of inquiry from outside by someone who asked to know what it meant and where it came from.

Investigation showed that an account of the word's origin is to be found in the revised edition of the Minnesota football history published by the General Alumni association. Part of what is told there is repeated here:

At Minnesota, the origin of a college yell was practically simultaneous with the organization of the first real Rugby team in 1884. When Thomas Peebles, a Princeton graduate, assumed the task of coaching the first team to play the English game, he used to divide the players into two squads, coaching one himself and putting the other in charge of someone else. Professor Peebles' team was usually the victor, and when his squad would push over a touchdown, he would announce the fact to the world with a "Sis-Boom-Ah, Princeton." Thinking to retaliate when the opportunity presented, some of the players decided to compose a yell of their own.

John W. Ames, and his roommate, "Win" Sargent, determined to devise a yell with a characteristic Minnesota flavor. Naturally, the "Rah, Rah, Rah" was an obvious necessity in any effective college yell, and as something with a distinctive Minnesota flavor, he adapted the word "Minnesota," dropping one syllable and pronouncing it "Minn-so-ta." Two three syllable lines needed a third, and he cudgled his brains for a three syllable Indian word that would express exultation. The memory of a race between four Indian boys in two canoes, which he had seen the year before at Lake City, came to mind, and he recalled how, as one canoe pulled across the finish line ahead, one Indian put up his hand and yelled, "Ski-oo." Mr. Adams, who was somewhat familiar with Indian life in his younger days, remembered that this cry was almost invariably used by young Indians when winning an athletic contest of any kind, and that the Sioux children generally used this exclamation to express exultation or pleasure.

Another syllable was necessary to make it harmonize and Mr. Adams added "Mah" to rhyme with "Rah" and "ta." As the yell was originally planned, the emphasis was placed on the second syllable of each line, as follows: "Rah, Rah, Rah. Ski OO Mah. Minn so ta!"

After perfecting the yell to their own satisfaction, Adams and Sargent adjourned to the street and enjoyed the unique distinction of being the first persons to voice the famous "Ski-U-Mah." It was late in the evening, and one of the neighboring windows was opened and a voice invited the boys to "shut up and go to bed."

The yell was printed for the first time in the Ariel in 1885, in the following form:

Rah, Rah, Rah.
Ski-U-Mah,
Minn-so-ta!

How's that for a college cry? It has not sense but the meter's immense. We endorse it.

About six or seven years later, the original yell was pronounced deficient in noise making qualities or in some way had become passe, and Grant Rossman, then president of the Athletic Board, appointed a committee of which Byron H. Timberlake was chairman, to revise the yell. The characteristic feature of the old yell, the "Ski-U-Mah," was retained, and the emphasis on the remainder was changed and a few new syllables added, as follows:

Rah, Rah, Rah
Ski-U-Mah
Hoo-rah, Hoo-rah
Varsity, Varsity
Minn-so-ta'

This new yell had its first demonstration in the spring of 1891, when Mr. Timberlake went to the interstate oratorical contest, held at Des Moines, Iowa.

State Ranks High in Number of Horses

With 738,000 horses on its farms, valued at \$57,552,000, Minnesota ranks second among all the states in the number of horses, says A. L. Harvey, horse authority, University Farm, St. Paul. Mr. Harvey cites the figures from a recent statement by the U. S. Department of Agriculture, which shows that only Iowa has more horses than Minnesota, and only Iowa and Illinois surpass Minnesota in the total value of horses on farms.

"Though Minnesota is rightly considered a leading dairy state, the total value of horses on Gopher state farms exceed the total value of milk cows and heifers by more than \$12,000,000," says Mr. Harvey. "The combined total value of sheep and hogs in Minnesota is just a little over one-third the total value of horses."

"In spite of the fact that automobiles and tractors have replaced a great many horses during the last 15 years, Minnesota farmers have continued to use and raise horses, and as a result are fairly well supplied with horses now when there is a shortage of draft animals in the United States. Horses are bringing higher prices this year than at any time since the World war. Prices will undoubtedly stay up until horse breeders are able to raise enough colts to provide and maintain adequate replacements," Mr. Harvey predicts.

Traveling Study Of Farm Problem Planned at "U"

A summer travel course in agriculture, involving about 5,000 miles of travel by bus through important agricultural areas, will be offered at Minnesota if enough students indicate an interest, Dean E. M. Freeman of the College of Agriculture, Forestry and Home Economics, said last night. The course would be open to both undergraduate and graduate students. It would be under the personal direction of instructors from the departments of agronomy and animal husbandry.

It is Dean Freeman's idea that crop and livestock production, including range management, should be studied in every major agricultural area. The trip would carry students to the Rio Grande in the southwest, east to Louisiana, north through Tennessee and the blue grass country of Kentucky, and home again through Iowa.

The traveling course would start early in July if enough students registered, Dean Freeman said. The tour would take between four and five weeks, but individual expenses could be held to about one hundred and fifty dollars. He has asked that all students who might be interested report to his office as soon as possible. Fuller details of the plan, he said, are being posted on the main bulletin board in the administration building at University Farm.

Bierman Tells Grid Prospects

(Continued from page 1, column 3) and I'm going to say what shall be done, not ask any more."

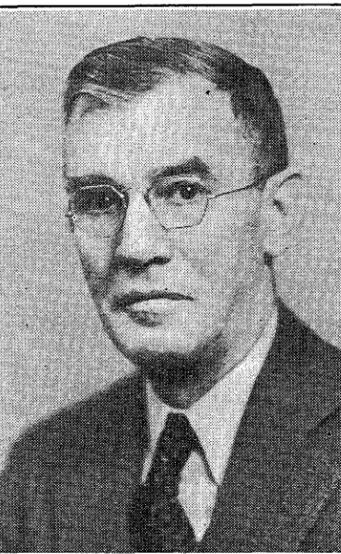
As every newspaper man knows there are some people who do too much talking for their own good, and it seemed too bad to draw Bernie out so shamelessly merely by displaying the usual reportorial technique. It was too easy.

"Well, Bernie," said your interviewer, "I'm afraid the season is going to be a little scattered, what with those stops at Montana, Tulane and Boston, Mass., but you can depend on me to watch all of the games as long as I still have my seat in the front row of the press box."

"O. K.," said Bernie, "Tulane is on our schedule for next fall, and maybe Sam Zemurray will come up for the game himself."

Miss Clara M. Brown and Miss Grace Gordon Hood, Home Economics department, University of Minnesota, were on the speaking program for The Central Regional Conference of the Office of Education to be held in Chicago April 8 to 12.

Head of English Department Will Take Year's Leave



Dr. C. A. Moore

Professor C. A. Moore, for several years past chairman of the department of English at the University of Minnesota, has been granted sabbatical leave for next year. Dr. Moore, with his family, will go to England. There he expects to continue the studies of the cult of melancholy that laid its mark on English thought and literature during parts of the seventeenth and eighteenth centuries. Much of his work will be done in the British Museum. Professor John Douglas Bush, who is on sabbatical leave this year but will return in the fall, has been elected to the departmental chairmanship for next year.

Largest Science Group to Meet

(Continued from page 1, column 1)

meeting—the thirty-second meeting of the association—was also a summer meeting, held in August, 1883. The president at that meeting was Professor Charles A. Young, of Princeton, and the total membership of the association was only 2,023. The second Minneapolis meeting—the sixty-second of the association—was held in December, 1910. The president was Professor Albert A. Michelson, of Chicago, and the total membership was 8,012.

Eighteen thousand men and women, including all of the country's leading scientific workers, are now members of the association, of which the president is Dr. Karl T. Compton, president of the Massachusetts Institute of Technology, and chairman of President Roosevelt's Science Advisory board.

Of the Association's 18,000 members only about one-third are regularly engaged in scientific work as a profession or career.

Two Honored by Science Academy



Dr. Ross Aiken Gortner

Diet Restoration Overcomes Effects Of Early Starving, Research Shows

Texan Speaks at Law School Dinner

Judge Joseph C. Hutcheson, Jr., of the United States Circuit Court of Appeals at Houston, Texas, was the guest speaker Monday evening, May 6, at the annual University of Minnesota Law School dinner, which has been given each year since 1921 by the alumni, faculty and students of the Law School.

George B. Leonard, president of the Law Alumni association, was toastmaster, and introduced as other speakers Rollo F. Hunt, president of the Minnesota State Bar association, Justice Royal A. Stone of the state supreme court, Dean Everett Fraser of the Law School and President L. D. Coffman of the university.

Judge Hutcheson took as his subject, "This thing called Law." Among special guests who accepted invitations to the banquet were Attorney General H. H. Peterson, Justices Clifford L. Hilton, Andrew Holt and J. J. Olson of the Minnesota supreme court, Federal District Judges Joseph W. Molyneaux, G. H. Nordbye and M. M. Joyce, Federal Circuit Judges John B. Sanborn, A. K. Gardner and Kimborough Stone, and, from the board of regents, Fred B. Snyder, George W. Lawson, Ray J. Quinlivan, Julius Collier, Frank W. Murphy, former president of the state bar association, A. J. Olson and Albert Pfaender.

The other two-thirds rae laymen so far as science is concerned. The natural result of this is to make all those who have any interest at all in science feel just as much at home and just as welcome at the meetings as those to whom science is an all-absorbing preoccupation. It also facilitates carrying out one of the most important functions of the association—bringing science to the general public.

Dr. Dwight E. Minnich is chairman of the local committee, which has had splendid co-operation in making its plans from the Minneapolis Civic and Commerce association.

Societies that will meet with the association in Minneapolis are the American-Phyto-pathological society; American Society of Plant Physiologists; Botanical Society of America; Corn Belt section, American Society of Agronomy; Dairy Science association; Ecological Society of America; Great Plains section, American Society of Horticultural Science; American Meteorological society; Minnesota section, American Chemical society; Minnesota State Medical association; Northwest section, American Meteorological society, and the Society for Research on Meteorites.

Just before the association meets the American Physical society will conduct summer meetings on the campus, June 21 and 22.



Dr. Dunham Jackson

Dr. Ross A. Gortner, left, head of the division of agricultural biochemistry, and Dr. Dunham Jackson, right, of the department of mathematics, were honored recently by election to the American Academy of Science. Both have done distinguished work in their respective fields. Other faculty members who have been elected to the academy are Dr. Elvin C. Stakman, plant pathology, and Dr. S. C. Lind, director of the division of chemistry. Two of the chemistry faculty are thus members of the academy.

Dr. C. M. Jackson, Anatomy Department Head, Tells of His Recent Investigations

White rats, stunted in early life by diet deficiencies, will regain practically full stature when the elements formerly lacking from a normal diet are restored it has been showed in preliminary results of researches by Dr. Clarence M. Jackson, head of the department of anatomy in the University of Minnesota. Dr. Jackson pointed out that rats, being omnivorous, have dietary requirements similar to those of humans, so that the same general principles apply to both.

Female white rats, deprived of sufficient protein in their diets during the first four months of their lives, came back to full normal stature when the full protein content of the diet was restored. Under similar conditions male rats made rapid growth but fell a little short of regaining full growth. Females have a difference in body chemistry, due to nature's demands upon them, which makes them combat adverse conditions somewhat more successfully than males do, Dr. Jackson said.

Elimination of any essential element in a diet stops growth, but the Minnesota researcher decided to base his study on a reduced protein content. Otherwise the rats were fed a complete diet. For purposes of comparison, a cage of the brothers and sisters of the rats to be experimented upon were fed a full diet. These reached normal stature at the end of four months, at which time those with protein deficiency in their food were still tiny. Restoration of the missing element, however, led to the results already stated.

Dr. Jackson said that his present results were in conflict with his former belief, namely, that early stunting from diet deficiencies, would be permanent. Similar results to those recently reached by Dr. Jackson have been attained by Osborne and Mendel, conducting similar experiments with protein deficient diets at Yale.

Critic Shows Fine American Etchings

The work of many young American etchers is of high artistic merit even though some of them are ignoring the standards of modernity created and advertised by Greenwich village and similar centers of professional art, J. W. Young of Chicago told an audience in the YMCA recently.

Young people in American universities should make a splendid and receptive audience for such work, Mr. Young said. Not yet having fallen under the influence of the artificial standards of the day, they should respond to the simplicity of a direct expression of beauty without regard to the precepts of schools of art.

He gave a number of illustrations from his experience of young artists who have turned out fine work without regard to the movements that swayed the field in which they worked.

More than one hundred etchings of American life and of nature were shown by Mr. Young, some of them exceptionally fine.

Finnish Collection Listed

Miss Sarah Lawson and Miss Anne Kallio, both of the cataloguing department of the University of Minnesota library recently have completed a check list of a set of books in Finnish that were presented to the university some time ago by a group of people in Virginia who are of Finnish descent. The list was published in The Library Journal for January, 1935. In the neighborhood of Virginia, Minn., are a large number of people of Finnish descent, many of whose children come to the university.

Sir Michael Grieve Thorburn, of Glenormiston, Innerleithen, Peebles-shire, lord-lieutenant of Peebles since 1926, and a member of the county council for fifty years, who died recently, held his estate of Glenormiston on freehold on condition that the owner pays the reigning sovereign one red rose as quit rent when he passes that way.

'Are Revolutions Necessary?' Asks Graduate Dean

"Are Revolutions Necessary?" was the subject of an address by Guy Stanton Ford, dean of the graduate school at the University of Minnesota, who addressed the American Historical Association. Dean Ford has been made second vice-president of the association, which post carries with it automatic advancement to the presidency two years hence.

Identifying a revolution as the climax of a long and gradual change in political and social customs rather than a coup d'etat with street brawls, Dean Ford said history suggests but one way in which violence can be avoided once the end of one of these long periods of evolution has come. That is for society to keep open the forums of public discussion and the avenues of research in the educational institutions so that reason may have a chance to function, and evolution not be left to passion, emotion and prejudice.

"Few words are more loosely used by the general public or by the historical guild than revolution. It ranks with epoch, critical age, decisive event and dominating influence in the frequency with which it is used in historical literature. In the looseness with which it is applied it is only outranked by such shibboleths as "national honor," "national interests" and "the common people." I started to make a collection of its uses but found myself with a wealth of superfluous specimens comparable to the man who made his collection of kinds of weather for the Centennial Exposition by going to New England. I soon had enough to endow a generation of text book writers and enough over to justify a score of new patriotic societies.

"By example apparently any invention, social expedient or experiment, any movement that varied from established custom, any form of violence by a group small or large, any shift in population, any loss or acquisition of privilege or status by individuals or groups, any appearance of a political institution new either in name or fact, any transformation often in name only of an institution or social process, even any discussion or advocacy of change was a revolution. This last idea that any discussion of change is a revolution is particularly prevalent in post-war years from the Lusk report to the last November election in Minnesota. And in every case, history which, if it records anything significant, records ceaseless change, was resorted to as the arsenal from which the opponents of change could draw their ammunition.

"If it is revolutions we are to assess from the standpoint of inevitability, it is necessary to fix the meaning of that which history may properly dignify by that name. Certainly this audience would not tolerate the elevation to the major rank of revolution of the street scuffles, mob outbreaks, coup d'etats of scheming charlatans or even the peaceful changes that are profound but limited in effect to a minor group or small area. Such incidents may have their place in the historical chronicles but their significance in a discussion of revolutions can be only as harbingers or sequellae of social changes much more profound, of revaluations by the human spirit of long established institutions and ways of life and thought.

"We must at the start turn our attention away from mobs, strife, violence and civil war, away from those spectacular features that in our current thought are called revolutions; we must direct it to those factors that led a generation or several successive generations to think critically of the political or social or economic order in which they lived. It is only thus that one can understand how the majority or a vigorous minority came to feel in certain ages that the existing order no longer served their interests, how they wished for a newer and better order and even more important how there was engendered in them the faith that a new Utopia could be brought about in their day by some act or effort of theirs.

Refers to Major Breakdowns

"The word revolution is here invested with the majesty that arises from its reservation to those major breakdowns and reconstructions that come only when the dominant social philosophy favoring a certain class or group and embodied in institutions and hab-

its of thought falls away and is replaced by something new already half built behind the crumbling facade of the old. The normal everyday readjustments and repairs and extensions of the old structure become inadequate and the children of a new age decree that it is hopelessly inconvenient and will not fit their needs, that new values in the land of the spirit upon which the social structure is built make it wasteful and uneconomic.

"If revolutions are thus limited to those profound, slowly matured and far reaching movements in which mankind over wide areas shifts its sense of values, its norms of social and individual conduct, its loyalties to once dominant mores and institutions, the number of revolutions shrinks from hundreds to a handful, and historic ages extend their frontiers beyond the boundaries history has set up.

"Compared with the eras and periods hitherto marked off, an age would take on something geologic, something to be measured by the chronology of the gods. Beginning and end would be harder to mark. The decay of an age would be almost coincident with and spring from its own highest development. Revolutions such as these are inevitable and by the same token, necessary, until the human spirit sinks into the torpor of a new ice age. Such revolutions are history and all of history. They are what they are and only impertinence would seek to write the word 'progress' on their glacial front.

"Undeniably the changes through which nations are passing are great. But it is hardly a revolution to have the great landlords and industrial barons of Germany accept a Hitler instead of a Hohenzollern as their titular ruler. The abolition by Mussolini of an Italian parliament in a land where parliament had been the institutional shadow of a dead and forgotten Cavour, is not a revolution and the substitution of a corporate state is rather the political apotheosis of an age which began with Italian city bankers and traders and guilds. One might even suspend judgment on the Russian revolution until we know the end effects on an agrarian people of the belated introduction on the American model of industrialism, mass production and the substitution of machines for ikons. The collectivistic philosophy is much concerned with directing material things but machines and material things may give unexpected directions and unforeseen outcomes to collectivistic philosophy."

Dean Ford then quoted the late Lord Bryce, long British ambassador to the United States, whom he called, "the friendliest and most penetrating critic of the America of that day." Bryce, said he, predicted the increased severity of the struggle for existence in this country once the soils had been partially exhausted, the fresh lands for free settlement gone and the western outlets for the overflow of great city populations restricted. Fifty years ago, said Dean Ford, Lord Bryce saw such developments no more than twenty years ahead. But, said Dean Ford, those who see in present American movements a fulfillment of the Bryce predictions should remember that changes now going on in this country are but a repetition of social modifications that took place long ago in many countries.

Extremist Is Overstressed

"The historian of past so-called inevitable revolutions has always devoted much attention to the works of individual critics and to the trend of thought in the vocal intellectual group. In doing this he has often overstressed the extremist just as we do today. Now more than ever he must, as I have suggested, gauge the unreflecting discontent of the mass mind and among the intellectual group the thoughtful warnings of those who have no blue print of the future to offer.

"I have this year signed two reports of national commissions, each of which raises a large question mark as to our national policies and action. They are each in my opinion both constructively conservative and enlightenedly liberal. They raise significant queries about the future, and that in itself is significant in a nation that has always taken the future for granted with the faith of a real estate agent. One, issued under

the aegis of this association, (American Historical Association) raises for such social statesmanship as the educational profession can muster, a query as to the adequacy and suitability in our day of an education for unrestrained individualism seeking the rewards of material acquisition at any social cost. The other raises a query as to whether we have and are pursuing in the name of the accepted canons of capitalism, the wisest policy to promote the national material welfare and individual and national economic security.

"As I listened to the deliberations in these commissions and in the important council of the social sciences in which I am one of your representatives, some historic fancy called up the eighteenth century philosophers and reformers, I could not help but wonder whether our reports and actions achieved with a remarkable unanimity were not fragments of a new Dictionnaire raisonnee, whether our deliberations and results would not be viewed by some future historian as straws pushed timidly out and marking the current of a stream that, if ignored and uncontrolled, would undercut the apparently safe footing of the bank on which our generation stood.

Let Us Look Back

"Let me repeat, however, that if any present day historian or anyone else talks of the necessity and inevitability of a major change, the whole long course by which a lay or bourgeois or capitalistic system has been built up through seven centuries should give him pause even if he did not recall Bryce's shortcomings as a prophet about America. Perhaps the recurrence in two or three successive generations over fifty or a hundred years of a series of cyclical collapses of the economic machinery, might bring such a major widespread change in our national philosophy as would merit the name revolution. He must not forget that at present the return of any degree of general well-being will give the battle cries of the old deal a rallying power not possessed by those of the current New Deal. Indeed, the banners of the attacking forces in the present skirmish need only to add a little fringe and change standard bearers to serve the defenders equally well.

"In thus recalling to the historian his task of probing deeply into social movements before he passes on revolutions past and present, I am not unconscious of new factors in his judgments about the present and future. There is one factor in speeding or delaying change that has arisen in its techniques and instruments to a major interest for the student of historical evolution or revolution. It is covered by the loose term propaganda and ranges from education to the public relations counsel who will on contract make black appear white. It has always been with us but never before in such a consciously organized way. It is a new world factor that will have much to do in the future with revolutions and their necessity and their permanency.

"Even the most casual observer cannot miss the significance of the control of the press, the telegraph, the international news agencies and cables, the institution of ministers of propaganda, the remodeling of school curricula, and the muzzling of universities. It was revealing to a historian looking forward in his training of students to write the history of this and the next fifty years that in the Vienna uprising last summer the Austrian Nazis made straight for the radio station.

"In America he must reckon also in a greater measure than in Bryce's day with the city and with urban interests, groups and attitudes. The census of 1930 in which urban population markedly exceeded rural may have in the future some of the significance often attached to the census of 1890 and the disappearance of another kind of frontier.

"To the question that may well have been the real one proposed on the program, 'Must short time and long time changes end always in conflict and violence?' the historian can only answer with certainty that the clash between beneficiaries of the existing order and exasperated advocates of change to their benefit have always so ended. Each time resistance to modest reform is blind to the wis-

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dom of concession and the necessity of change. If concessions are made, they come too late. The demands have risen and the price of peace is again too high only to become again too cheap. The reactionary breeds the radical among reformers, the approaching conflict falls under the leadership of these two opposing extremes and the conflict follows. It has been repeated so often in so many fields that it appears inevitable and, historically speaking, necessary.

Has Mankind Learned?

"Have we before us any hope that mankind has after all these centuries learned a way to make without violent dislocation the necessary readjustment in his relations to his material environment and his fellow man? Such readjustments are certainly inevitable and necessary, and are the revolution whether prepared over centuries or decades. Will democracy in the few countries where it exists or ever existed, with its accompaniments of majority rule and the more potent effects of public opinion, enable it to substitute new patterns of thought without the agency of the guillotine, and civil strife and class warfare? There is a possible affirmative answer, it is not a new one, it is not completely reassuring in a world where prejudice and passion so readily sweep reason aside. But it is the only one that thinking men who are not cynics can offer.

"The answer is that the only possibility of avoiding the physical conflict is to maintain a free arena for its moral equivalent in free forums for conflicting opinions in the press and pulpit and, more important in a democracy, on the street corners and in the schools and colleges. It requires a long and intensive national habituation to maintain the sanctity of free speech, a free press and the scholar's immunity to pursue truth wherever it leads in the fields that deal with human conduct. England has come nearest to it in seven centuries of schooling a racially unified stock.

"If these freedoms are possessed and maintained by a people in a national crisis, or by some outstanding nations in a world crisis, a revolution may approach and even attain the character of peaceful evolution. Without such freedoms the inevitable and necessary answer is force and the baptism of the new order in blood. Until the historian knows whether a nation or an age will pay the lesser price to maintain the freedom of research and public discussion in the fields of the social sciences, he cannot say that they will escape paying the higher price in violence and chaos."

Mayo Fellows Entertained

A group of 20 fellows of the Mayo Foundation, advanced medical students who do most of their work in Rochester, were entertained on the main campus of the University of Minnesota Saturday, April 13. Rated as graduate student in the university, these men take their work off-campus and some get little opportunity of becoming acquainted with the institution in which they are enrolled, according to Dean Malcolm M. Willey, who is arranging the visit. The fellowship holders were entertained in faculty homes and were guests at a luncheon in the Minnesota Union. At night they attended "Romance" as presented by a student cast.

Chosen on Law Review Board

Four Minnesota students have recently been elected to the editorial board of The Law Review for next year. They are Frank Plant, student president and recent case editor; John Finn, note editor; S. Wendell Nelson and Harold Fredrikson, associate editors. The Law Review, published at the university, is also the official organ of the Minnesota Bar association. Professor Ralph Dwan is its editor.

Italian Tells Of Rome's Decline And Fascist State



Dr. Gaetano Salvemini

Dr. Gaetano Salvemini, exile from fascist Italy and visiting professor at Harvard, where he is lecturing on Italian civilization, was a guest speaker on the University of Minnesota campus May 8 to 17, and in that period delivered a series of six lectures on the general theme, "The Breakdown of the Roman Empire in Western Europe." Before his flight from Italy Professor Salvemini taught in the Universities of Messina, Pisa and Florence.

The subjects of his six lectures at Minnesota were: "The Crisis of the Third and the Breakdown of the Fifth Century; an historical Problem and Its Many Solutions;" "Were Climatic Changes, Malaria, or Exhaustion of the soil Responsible for the Decay of Ancient Civilization?"; "Race Suicide and Depopulation; What We Know and What We Do Not Know About Them;" "The Moral Standards of Roman Society and the Assumed Decay of Ancient Virtue"; "Did the Christian Religion Contribute to the Disintegration of Roman Institutions?"; "Is There a Solution for this Problem? The Answer Suggested by Historical Sources."

Dr. Salvemini also delivered a seventh lecture to the combined faculty dining clubs.

Plan Memorial to Miss Wilder

A faculty committee of the University of Minnesota Medical school has launched a plan for perpetuating by a memorial the memory of Miss Lucretia Wilder, university student in bacteriology, who lost her life recently as a result of an infection contracted while she was working in the laboratory. A scholarship, prize, or memorial tablet has been suggested as the form a memorial might take. "She is another martyr added to the long list of those who have sacrificed their lives for the advancement of medical and biological science" says the announcement soliciting subscriptions. A goal of \$1,000 has been set. On the committee are Guy Stanton Ford, dean of the graduate school, Richard E. Scammon, dean of medical sciences, Elias P. Lyon, dean of the medical school, and Professors Owen Wangensteen and Hal Downey.

Dr. Anderson in Washington

Dr. John E. Anderson, director of the Institute of Child Welfare at the University of Minnesota, recently returned from Washington, D. C. A former chairman of the committee on child development of the National Research Council, Dr. Anderson attended meetings of that committee and also related meetings in Philadelphia.

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Conservation Will Be Theme at Big Campus Meeting

University and Association for the Advancement of Science to Join Efforts

THURSDAY, JUNE 27TH

Famous Geologist and Political Scientist to Present National Viewpoint

When the American Association for the Advancement of Science meets in Minneapolis and on the University of Minnesota campus Monday, June 24 to Saturday, June 29, inclusive, an outstanding session of wide public interest will be the combined university convocation and association meeting in Northrop Memorial auditorium, Thursday, June 27, at 10 a. m., at which two speakers of national distinction will discuss, "Resources and Planning."

Dr. C. K. Leith, chairman of the department of geology at the University of Wisconsin will talk on "Mineral Conservation," and Dr. Charles E. Merriam, head of the political science department at the University of Chicago will discuss, "National Planning." Dr. Leith, an authority on the mineral deposits of Wisconsin, Michigan and Minnesota, is vice chairman of the Planning Committee for Mineral Policy appointed in 1934 by President Roosevelt. Dr. Merriam is a member of the government's National Resources Board. Arrangements are being made by Dr. Dwight E. Minnich, chairman of the local committee.

President Lotus D. Coffman of the University of Minnesota will introduce the speakers. The chair will be occupied by the president of the American Association for the Advancement of Science, Dr. Karl T. Compton, who is also president of Massachusetts Institute of Technology.

Physical Society to Meet

On June 21 and 22, just preceding the meetings of the American Association for the Advancement of Science the American Physical society will meet on the University of Minnesota campus. A principal session will be that of Saturday morning, June 22, when there will be a symposium on "Nuclear Physics" in the auditorium of the Physics building. Four papers will deal with what is called the bombardment of the atom, and with its consequences, and the advancement of scientific technique in this respect. Speakers will be Professor D. Breit of Wisconsin, Professor Charles Lauritsen of California Institute of Technology, Professor L. R. Hafstad of the Carnegie Institution of Washington and Professor H. Bethe of Cornell University. The local committee is composed of Dr. J. T. Tate, Dr. J. W. Buchta and Dr. J. H. Williams, all of the physics department.

General sessions of the A.A.A.S. other than the Thursday morning meeting already mentioned will be conducted each evening and sectional meetings daily.

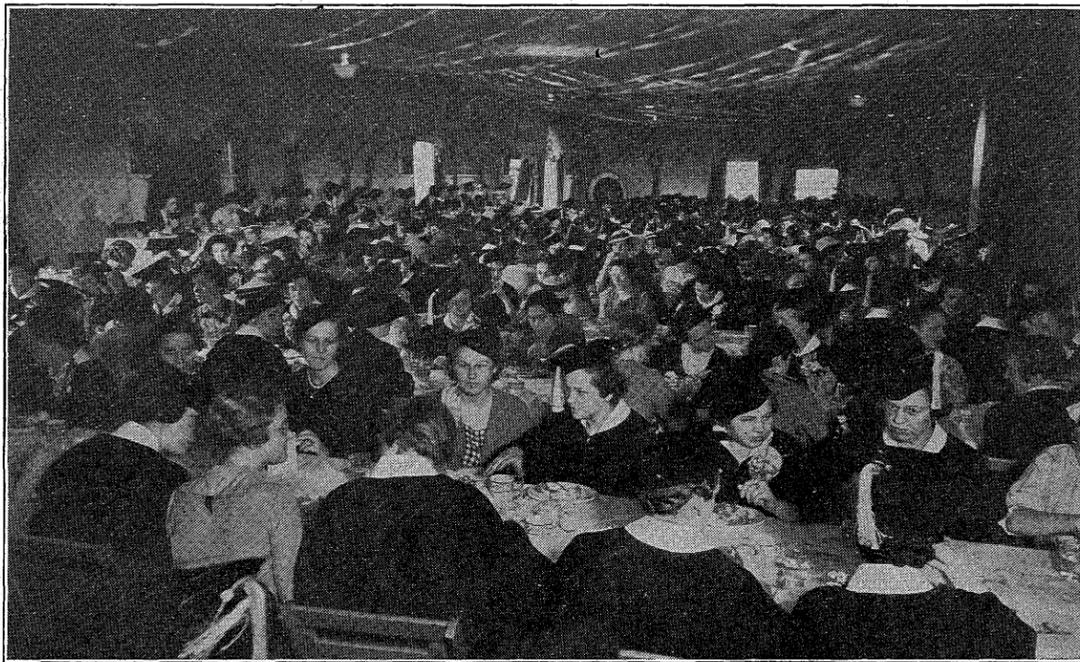
The chairman of the local committee is Dr. Dwight E. Minnich, head of the department of zoology, and the secretary is Professor Donald G. Paterson of the department of psychology.

Meet Jointly With Doctors

The opening session on Monday evening will be a joint meeting with the Minnesota State Medical association. The address will be given by Dr. W. P. Murphy of Boston, who will speak on, "Diseases of the Blood." At the general session on Tuesday evening the annual Maiben lecture will be delivered by Dr. Richard P. Strong of the Harvard University Medical school, whose subject will be, "The Importance of Ecology in Tropical Disease." This meeting will be followed by an informal reception given by President and Mrs. L. D. Coffman for the visiting scientists.

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Senior Women Banquet in Caps and Gowns



One of the interesting annual events on the University of Minnesota campus is the Cap and Gown Day luncheon, arranged each year on Cap and Gown Day by the Women's Self Government Association. All senior women are invited. It is the day on which they may put on their academic costumes for the first time.

Research Worker in Engineering Tells Interesting Facts About Dust

In Estimating Amount in Air, Weight Alone Found Poor Yardstick

A reply to the question, "What is dust?" is given by Professor Frank B. Rowley, director of the Engineering Experiment station and former president of the American Association of Heating and Ventilating Engineers, in a recent paper on "The dust problem in air conditioning."

"According to their diameters," wrote Professor Rowley, "solid particles in the air are commonly classified as dust, fumes and smoke. There is really no sharp line of demarcation between these classes. In general, dust ranges from the largest particles, which rapidly settle out of the air, down to particles 1 micron in diameter. (A micron is one-one-thousandth of a millimeter, or one .0025 inch). Fumes range from one to one-tenth micron, and smoke from three-tenths to one one-thousandth micron."

With respect to the effects of dust on health he pointed out that particles above 10 microns in diameter do not enter the lungs and particles below .5 micron are not retained in the lungs. Science is interested chiefly, therefore, in particles of less than 10 microns diameter, and it is generally accepted that the most dangerous sizes are from .5 to 6 microns.

"Larger particles of dust, such as pollen, which range from 14 to 60 microns, may lodge in the nasal passages, causing an irritation known as hayfever," he wrote, "but they do not enter the lungs. While the composition of dust has an important relation to its effect on the human system, the size of the particles determines what part of the system it may reach. The size of the dust particle is also a very important factor in its removal from the air, and provides a means of measurement. Large dust particles can readily be observed floating around in the air, especially in a darkened room with a beam of sunlight passing through. It is, however, only those particles 10 microns or more in diameter that are visible to the unaided eye, and the great masses of them are invisible except with the aid of a microscope."

Dr. Rowley criticized the present engineering standards for testing the efficiency of equipment for filtering dust from the air because, he said, these are based on the weight of the dust extracted from a given volume of air, whereas it is the size and type of dust that

is important rather than the weight. For example, one single large particle, incapable of entering the lungs might weigh more than a vast number of particles in the range dangerous to health, namely, between .5 and 6 microns.

In his experiments he determined that a piece of equipment which permits counting rather than weighing the dust particles in a given volume of air is most satisfactory. He therefore used a glass surface coated with an adhesive substance, and against this he propelled a controlled volume of air. Then he was able to count the dust particles that clung to the sticky surface. After experimenting with many oils to find which could be used most satisfactorily to coat the surface as an adhesive, he hit on Filter Oil as better than 18 others he had tried. He describes his equipment in this way:

"In its present form the counter is designed so that the air is drawn through the orifice at a constant velocity by means of a vacuum impinging on a viscous coated glass plate. The amount of air striking the plate at any given section is regulated partly by the size of the orifice and the air velocity through the orifice, but finally by moving the orifice parallel to the surface of the collecting plate at a constant velocity. By this arrangement a continuous, uniform path of dust particles is deposited on the plate. The width of the path is within the field of the microscope, and by counting the particles for a given length of the dust path the number per given air volume is determined."

He pointed out also that it is possible to arrange a filter so that only the sizes of particles one wants to find become visible, and these may be set to reveal any given size.

Basic to Professor Rowley's experiments were two facts, first, that no satisfactory method of measuring the dust in the air has been standardized and accepted, and, second, that there is a lack of standardized methods for judging the performance of air cleaning apparatus.

"Many measurements have been made to determine the number of dust particles in the atmosphere," he said, "both in various types of buildings and out of doors. These counts range anywhere from a few hundred up to several hundred millions per cubic foot. After the air has been washed by a snow or rain, the count may be a matter of a few hundred, while for a

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O'Brien Puts Radio Theories Into Effect

Dr. William A. O'Brien, associate professor of pathology, will continue during June the weekly health lectures on behalf of the Minnesota State Medical Association which he has been delivering for several years past. His subjects will be: June 4th, "Your heart;" 11th, "Chorea;" 18th, "As we grow older;" 25th, "Vacation time." The broadcasts are made at 10:30 Tuesday morning. "Women are ironing at 10:30 Tuesday morning, and they turn on the radio to take their minds off their troubles," says Dr. O'Brien. "I think it's the best hour in the week to reach the women of Minnesota with a message important to their homes. You may take the dinner hours and the dance hours, and you may roll up the tired business men and stand them in the corner for keeps. The people I want to talk to are the housewives, on Tuesday morning when they are doing their ironing."

Dr. Coffman Heads Education Council

President L. D. Coffman of the University of Minnesota will serve this coming year as president of the American Council on Education, a subsidiary organization of the National Association of State Universities. The American Council on Education deals with vital educational problems, national in scope, that are of particular importance to state universities. The College Testing Bureau, which conducts nationwide tests of college students, is one of its organs.

Will Teach in Hawaii

Miss Elizabeth Jackson, assistant professor of English at Minnesota, will leave this fall for Honolulu where she will teach in the University of Hawaii for one year on professorial exchange. Dr. Laura V. Schwartz, assistant professor of English in the University of Hawaii, will take Miss Jackson's place at Minnesota, teaching courses in Shakespeare and freshman and sophomore composition. Miss Schwartz will spend the summer in England, coming to Minneapolis in September. She is a graduate of the College of the Pacific, received her master's degree and doctorate from Stanford university, and subsequently has studied in Oxford university.

President Asks University Hold True to Its Aims

Decries Efforts of Pressure Groups to Use Campus as Their Field

MUST BE FREE TO LEARN

But Sees That Distinct from Liberty to Advocate Causes

In his annual Cap and Gown Day address delivered in the Northrop Memorial Auditorium on Thursday, May 16, President L. D. Coffman charted a course for universities, including the University of Minnesota, to follow in a period when diverse thinking and insistent advocacy of differing theories mark the spirit of the times. Universities, he said, must be free to study what they wish and to examine whatever is being said and done. From this, said he, it does not follow that a university shall become partisan nor be put in the position of professing this policy or that.

His address follows:

This is the fifteenth time that I have participated in these exercises. To those who have never been here before, I should say that the exercises are held for two purposes, viz., to read the names of students who have won honors or special distinction in their work, and to recall and restate the purposes of a university. Although I am familiar with the exercises I never fail to experience a thrill as the names of those who have accomplished something special in their studies, are read. Nor do I fail to experience a certain responsibility in attempting to restate the purposes of a university.

While new interpretations must be made from time to time of the university's meaning and place in civilization, it would be tragic if we forgot that it possesses certain traditions and ideals to which we should cling with all our power. On various occasions I have declared that a university must be a living thing, in close and constant contact with the world it is supposed to serve. Sound as I believe this principle to be, I do not think that it should be advanced as an argument for making a university the creature of the market place. It may appear to some that a university cannot preserve the historic traditions of higher education and at the same time be a living, growing, pulsating institution. Clearly a university may have its face turned so completely to the past that it will be unfamiliar with what is going on in the world. On the other hand, it may be so engrossed in current events that it will contribute little or nothing to essential scholarship.

I know that many persons look upon a university as something more than an instrument to promote learning and research. To them a university is a society composed of thousands of persons, students, faculty, employees, but mostly young persons, constantly changing, and yet retaining amid all of its changes certain permanent characteristics. A university in a true sense has its own concerns and its own loyalties: the university society may have its own concerns, its own loyalties, its own politics. A university may reflect the concerns and loyalties and politics of society in general or of its society, but it can also stand aside and refuse to be a full participator.

We are in a period now when pressures for specific action are becoming increasingly evident. We are in a period when the world is full of change—every one is trying to find out what these changes mean. New philosophies, doctrines and theories are being advanced. The old walls of custom, designed for protection and security, are being torn down and

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Marget Decries Silver - Buying Economic Policy

School of Business Man Sees Catering to Small Group in Favors Shown the White Metal

"Minnesota Chats" asked Dr. Arthur Marget, of the department of economics to write an analysis of the government's silver buying policy, in the belief that public understanding of that policy was inadequate. Dr. Marget speaks, of course, as an expert, and the views stated are his own.

By Professor Arthur W. Marget

The first step toward an understanding of the "economics" of the Administration's silver-buying policy is recognition of the fact that whatever of economics is involved is entirely subordinate to what is due entirely to the exigencies of practical politics. Once this fact is recognized, the policy becomes understandable, and even, from some points of view, forgivable; if it is not recognized, the acts of the Administration become absurd and self-contradictory to the point of complete irresponsibility.

At the basis of the political exigencies to which reference has been made, there is, of course, a fundamental economic fact. This economic fact, however, is not the one which is common to all inflationary proposals: namely, the severe fall in the general price-level from 1929 to March, 1933, with the resultant increase in the real burden of debt and unemployment, and the weakening of crucial parts of the American financial structure. It is rather the more specific fact that the price of one particular commodity has fallen. That commodity is silver.

Nor must it be supposed that the reason why silver was selected for special attention among all commodities that fell in price after 1929 is that the fall in the price of silver was more severe than the fall in the prices of other commodities. On the contrary, silver fell less in price than did many commodities included in our general price indexes. If we are to understand why silver was selected for special attention, we must remember first of all that the senators of the silver-producing states form a compact and powerful group in the national legislature. Yet if this were all that were involved, it would still be difficult to explain why silver has been selected as the recipient of such marked favor at the hands of the government; for we should still have to account for the fact that other compact and powerful groups representing special interests in the legislature have not been as successful in having their way as the silver representatives have been. The reason for the greater measure of success obtained by the latter is that, unlike the representatives of most groups suffering from the consequences of a fall in the price of their product, the silver representatives have been able to pose as disinterested advocates of a policy the adoption of which is urged entirely in the interests of the nation as a whole.

They argued, for example, that the "rehabilitation" of silver—that is to say, a rise in its price—was necessary in the interest of reviving an important part of our foreign trade. They made much of the fact that a considerable part of the world—in particular, China—still uses silver as its standard money; they argued that a fall in the price of silver reduced the "purchasing power" of these silver-using countries in proportion to the fall in the price of silver. If we could raise the price of silver to twice the existing level, would this not increase the "purchasing power" of those countries which have silver as their standard money?

The answer of economists was unanimously that a rise in the price of silver would do nothing of the kind. We insisted that, on the contrary, a marked rise in the price of silver would be more likely to lower than to increase the purchasing power of a country like China. For the purchasing power of China, unlike that of a Chinese resident in America drawing a remittance in silver from China, is primarily determined not by the quotation in American money of the Chinese standard silver coin, but by the total of its exports of all kinds. The question was simply whether a rise in the value of the

Chemists Form New Society

Two University of Minnesota students who were attracted to the subject of agricultural biochemistry and pursued their studies to the point of obtaining a Ph.D. degree found recently that Cupid is no respecter of erudition, so Dr. Helen A. Lasby, daughter of Dean W. F. Lasby of the College of Dentistry, and Dr. Robert N. Jeffrey became man and wife. This immediately reduced by two the number of doctors of philosophy looking for jobs, for Chemist Jeffrey obtained a position as research chemist for a large industrial concern at Battle Creek, Mich., and Chemist Mrs. Jeffrey went to work to mix the proper ingredients of comfort for making Chemist Jeffrey a happily married man. Dr. Jeffrey came to Minnesota from the University of California on a Shevlin fellowship and took his doctor's degree at University Farm under Dr. R. A. Gortner.

Chinese money was bound to mean that China was an expensive country in which to buy; and it was only reasonable to suppose that Chinese exports would suffer as a result.

We all know now that the economists were right. So far from making China grateful, our silver-buying policy has made them bitterly resentful. The Chinese government has registered more than one vigorous protest with the Administration against a policy which has done serious harm to the foreign trade of China; and that the resentment thus expressed is widespread within China, is indicated by the fact that there is even talk of a retaliatory boycott by the Chinese against American goods.

The silver senators did not, of course, rely entirely on the "purchasing power of China" argument in their attempt to convince the American people that "doing something for silver" would really be "doing something" for the country as a whole. At a time when much sentiment was abroad on behalf of monetary inflation, it was only to be expected that the silver interests would argue that the "rehabilitation" of silver would effectively and immediately raise the general level of commodity prices.

The argument, of course, was that any increase in the quantity of standard money must be reflected in an increase in the general price-level. No competent economist denies that this is so in the long run. What was denied was that increasing the number of silver dollars would raise the general price-level immediately. We insisted that, in a country with the monetary and banking habits of the United States, it is the quantity of bank-deposit money—that is to say, the amount of money "circulating" in the form of bank checks—which is the really important element in the supply of "money"; we insisted that there were already more than adequate bank reserves in the form of gold, most of it lying unused; and we were unable to see why adding unused silver dollars to unused gold dollars should change the situation in any essential respect.

Here again, unfortunately, the economists were right. It is difficult, indeed, to believe that the Administration itself expected any result other than that which was forecast by the economists in this respect. It is much easier to believe that what the Administration really hoped for from its adoption of the silver-buying policy was not an inflationary effect, but rather a division of the ranks of the "inflationists" by buying off the "silver bloc."

What long-run effects may be expected from the silver buying policy? Some observers have pointed with great emphasis to the fact that the precedent of adding silver dollars on a large scale to our monetary stock must, in the long run, increase the amount of inflation which will be possible as soon as the enormous unused reserves within our banking system are put to work. This is, of course, true; but I cannot regard it as the most serious objection to the silver-buying policy from a long-run point of view, for the simple reason that the possibilities of inflation on the basis of our gold reserves are so tremendous in themselves that the addition of the silver must be regarded as of relatively slight importance.

The really serious aspect of the silver-buying policy seems to me to lie in the fact that it represents governmental processes at their

New Members of Board of Regents



Hon. Ray Quinlivan

Both former members of the Minnesota Legislature and thoroughly conversant with the problems of the University of Minnesota and of the state, Ray Quinlivan of St. Cloud and Albert Pfaender of New Ulm were elected to the Board of Regents by the 1935 Legislature.



Hon. Albert Pfaender

worst. A policy is proposed, ostensibly in the interests of the whole community, but actually in the interests of a very small part of that community. It is, in other words, a case of "grab," pure and simple. To one who would defend democracy to the bitter end, the disturbing aspect of such a procedure as is represented by our silver-buying policy is that a tiny minority is able to carry through its program of "grab" only because the degree of enlightenment on questions of public policy which democracy presupposes for its successful functioning does not in fact exist. In short: the universities and the schools of the country have before them a problem in education which they cannot shirk if democracy is to survive.

Faculty Men Write About Propaganda

Dean Malcolm M. Willey, assistant to the president of the University of Minnesota, and Dr. Ralph D. Casey, chairman of the Department of Journalism, are contributors to a symposium on propaganda that appeared in the May issue of the Annals of the American Academy of Political Science.

Dr. Casey discusses Party Campaign Propaganda, while Dr. Willey concerns himself with the social, political and moral effects of what he calls "mass communication," namely, the combined influences of press, radio and motion picture.

"All parties, no matter how strongly entrenched, have nothing to support them but opinion; politicians must supply the necessary ballyhoo and red fire to attract and hold interest to themselves," writes Dr. Casey, "Thus the propagandist sets to work, makes use of every agency which appeals to the common man through his eye or ear, and spreads the party symbols. If any person fails to come within the range of political propaganda, it is because he is either a hermit in some mountain fastness or the inmate of an asylum."

Dr. Willey finds danger in the conflicts of opinion and advice that arise in various quarters. The school, for example, tells the child that smoking is dangerous. The advertisement recommends cigarettes and backs its claims with testimonials by famous athletes. For the adult, the teachings of the church and of many motion pictures are in direct conflict. The many competing stimuli interfere with the acquisition of stability and settled opinion. He calls the communications system at once terrifying and inspiring; "terrifying because of the possibilities it opens for the accomplishment of selfish ends; inspiring for its potentialities of social self control."

Graduate Manages Park

Appointment of a recent Minnesota graduate to be superintendent of Zion National Park, also known as Zion National Monument, in Utah, has recently been announced. The fortunate alumnus is Dave Canfield, son of Thomas Canfield, formerly secretary for many years of the Minnesota State Fair. Both Dave and his brother Tom were prominent in student activities when they were undergraduates at the University of Minnesota.

Announce Book Contest Winners

Hazel L. Larson, Minneapolis, student in the Extension Division of the university, won first place in the Student Library contest which closed April 15. Mrs. Larson will receive \$50 worth of books as a prize for submitting the best personal library in the contest, which was sponsored by the University of Minnesota Press.

Other winners were William N. Olsson, of Bellevue, Pennsylvania, senior in the Arts College; Jane Helm of Minneapolis, student in the General College; and William Corrigan, Minneapolis, senior in Arts. These three students will receive prizes of \$25, \$15, and \$10 worth of books respectively, the books to be donated partly by seven Twin City book dealers and the remainder by the University Press. The students will be allowed to choose their own prize books as far as dealers' stocks allow.

Fairley Elected A. P. President

Minnesota Chats takes this occasion to congratulate Harry S. Fairley, president and news editor of The Fairmont Sentinel, upon his election to the presidency of the Minnesota Associated Press, to which position he was elected late in May. A former city editor of a Minneapolis newspaper and for some fifteen years active in the management of one of the liveliest of the dailies in the smaller cities of Minnesota, Mr. Fairley is an all-around newspaper man who knows all angles of the business and who has a wide acquaintance throughout the state. Incidentally, the editor of "Chats" also makes this an opportunity to salute one of his former bosses. Harry wasn't so hard to work for, either.

Becomes Golf Professional

Walter H. Mund, formerly assistant golf professional at Midland Hills, recently was appointed as professional at Recreation field, the University of Minnesota golf course. Mund had served at Midland Hills for the past six years. He will aid W. R. Smith, intramural director and manager of the University golf team in coaching the University squad. Mr. Mund also will help Mr. Smith in teaching golf to physical education and extension classes this spring. Mr. Mund is well known in Twin Cities golf circles as an outstanding teacher and has been highly recommended as an instructor. Mr. and Mrs. Mund will live in the club house at Recreation field. Mrs. Mund will act as chaperone at club house parties and will also be in charge of meals there.

Editors Study Problems

Workers on a dozen or more daily papers throughout the state of Minnesota came to the University of Minnesota Saturday, June 1, for the first daily newspaper news and editorial conference, sponsored by the department of journalism at the university. Local news coverage, sports news, news of interest to women, making editorial pages more interesting and providing better coverage of trade territory news were among the subjects discussed.

Sigma Xi, Science Group Honors 54

Eight Members of Faculty Among Those Elected at Annual Meeting

Eight members of the faculty, an alumnus, four undergraduates and forty-one graduate students were elected to membership in Sigma Xi, honor society in science, at its annual meeting on May 27. Dr. Charles A. Mann, head of the division of chemical engineering, was chosen head of the Minnesota chapter for 1935-36, according to announcement by the secretary, Dr. Henry Hartig of the department of electrical engineering.

The groups elected, together with the subject of the research on which membership was awarded, are as follows:

Faculty: A. B. Baker, pathology; Ethel Phelps, home economics; J. H. Neal, agricultural engineering; Martin Nordland, medicine; F. C. Lang, civil engineering; Carl E. Nurnberger, bio-physics; B. J. Robertson, mechanical engineering; Peter J. Brekhus, dentistry. Alumnus: Henry T. Tholstrup, electrical engineering.

Undergraduates: T. H. Dakin, inorganic chemistry; Nathan Levinson, mining engineering; J. J. Lingane, analytical chemistry, and A. L. Sanford, mining. The last two received the Thomas F. Andrews prize for undergraduate research.

Graduates: Nat A. Allen, Jr., dairy husbandry; Dorothy M. Andrew, psychology; K. G. Barrons, agronomy and plant genetics; G. E. Bartsch, physical chemistry; Melvin Calvin, physical chemistry; H. M. Darling, plant pathology and botany; V. K. Das, agricultural biochemistry; George R. Downs, geology; Margaret Dudley, botany; J. W. Fertig, botany; W. F. Filbert, organic chemistry; I. N. Forbes, plant pathology and botany; W. T. Gardner, geology; W. J. Gertsch, zoology; Howard Gilkinson, psychology; Kenneth Goldblum, chemical engineering; Harold Graves, chemical engineering; W. W. Green, veterinary medicine; G. M. Haselrud, psychology; J. D. Hitchcock, entomology; E. J. Hoffman, physical chemistry; Alice Leahy, child welfare; E. E. Litkenhous, chemical engineering; Clarence E. Lund, mechanical engineering; W. M. Meyers, agronomy and plant genetics; G. L. Michaelson, chemical engineering; S. E. Miller, organic chemistry; D. R. Moltzan, analytical chemistry; F. C. Olson, agricultural bio-chemistry; L. G. Overholser, analytical chemistry; A. R. Patton, agricultural bio-chemistry; Lewis E. Peterson, electrical engineering; P. J. Philson, botany; D. C. Rollins, mechanical engineering; Anita G. Sallens, home economics; Oscar Skovholt, agricultural bio-chemistry O. J. Swenson, chemical engineering; F. L. Taylor, organic chemistry; C. I. Vigness, physics; R. G. Wayland, geology.

Bob Tenner Gets Conference Medal

"Bob" Tenner, All-American end on the Grantland Rice team and a high-ranking student in the Medical School, is the University of Minnesota winner of the Western Conference Medal for 1935. His selection was announced at the recent Cap and Gown Day exercises at which student honors are made public. Tenner is regarded as one of the best ends ever to play at Minnesota. He has one more year in the Medical School but has completed athletic competition.

Before the recent meetings of the American Educational Research Association in Atlantic City, Dr. Alvin C. Eurich, assistant professor of education, University of Minnesota, talked on "Examinations for the General College of the University of Minnesota." At another session of the same organization, Dr. Eurich introduced a round table discussion on, "The personality traits of applicants for entrance to teacher training institutions."

Miss Gertrude Baker of the Department of Physical Education for Women at the University of Minnesota, was chairman of a round table discussion on rhythm at the meeting of the Midwest Association of Directors of Physical Education for Women in Colleges and Universities, at Madison, Wis.

President Asks University Hold True to Its Aims

(Continued from page 1, column 5)

new ones are being erected in their place.

This spirit of unrest and exploitation which flourishes in a period of social and economic derangement, seeps into and tends to undermine the substantial parts of the university structure. Universities are urged to do things that they cannot do without obscuring their goals and weakening their work. Being human, both faculty and students alike fall prey to this tendency. Using the shield of academic liberty for protection, faculty representatives occasionally become the advocates of programs, of causes, of movements which bear no relation to the fields of learning that they have mastered. The fact that this brings them into disrepute with competent scholars who hold steadfastly to the pursuit of human learning, and that they often become objects of public ridicule, is bad enough, but far worse is the fact that performances of this character often jeopardize the very existence of the university itself.

Academic Liberty Precious

Nothing is more precious to a university than academic liberty. Without it a university cannot survive. And yet in common with every other great virtue or possession of the race, its value is only relative. The abuse of it becomes a vice. Intolerance masquerades behind its mask. The champions of academic liberty may destroy it by uncritically espousing every new proposal that may be made. Universities cannot chase after every Pied Piper who comes playing down their streets and be at the same time true to their purpose. New ideas must be tested. Time shows that most of them are wrong. A certain lag is desirable for the examination and testing of new ideas if there is to be real growth and continuity of stability. Universities are the best institutions yet devised by men for the testing of human experience. Because knowledge is of common interest to every one, regardless of the political boundaries that separate people, civilized societies and nations generally have given the scholar and the scientist a certain immunity in the search for and the dissemination of information. However, immunity cannot be had without a price. Dr. A. V. Hill, Fullerton professor of the Royal Society of England, discussing the small price the scholar and scientist must pay for this immunity, says: "Scholars and scientists possess varying degrees of capacity in practical affairs. One disadvantage of prominence in any calling is the fact that the world, at least its newspaper reporters, is apt to believe that the views of the prominent person are of importance in matters altogether unrelated to his special capacity. The views of Bernard Shaw, the Jester, are quoted on politics and science; Soddy, the Chemist, writes fantastically about economics; famous astronomers get entangled with divinity or metaphysics. No doubt it is to be desired that Shaw should take an interest in science and Soddy in economics; preferably a reasonable and not an emotional interest; my contention simply is that their views need not be taken more seriously than those of more ordinary people."

The importance of the problem to which Dr. Hill refers is attested by the efforts of the American Association of University Professors of this country to define the conditions that will insure intellectual liberty, and still further by the fact that President Angell, President Conant, President Hopkins, President Hutchins, President Frank have either written or spoken upon it recently. Dean Ford's Phi Beta Kappa address of last year was upon this theme. Every one of these distinguished leaders was pleading for the preservation of academic liberty. They have seen it disappear in Russia, in Germany, in Italy, and they have seen forces at work in this country, some radical, some conservative—that would destroy it here. The universities of this country are in great danger from the extreme liberals who intolerantly seek action without knowledge, and also from the ultra-conservatives who see red when speech is free even though based on knowledge. Should scholarship ever lose its freedom it will be because of unreasoned pressures by outside groups or because of the unbridled

license of its reckless advocates. No virtue can be preserved by abuse. If scholarship becomes the handmaiden of Communism or of Fascism, if it ties itself to emotion, to certain social or economic theories, to any form of propaganda, its immunity will soon be lost. Human learning will continue to lead human advancement only to the extent that it refuses to meddle with, or to be dominated by, isms, creeds, or doctrines. Science cannot be coerced and scholarship must not be prostituted to preconceived or ulterior ends.

Must Guard Against Invasions

Liberty is not a birthright, it must be achieved; and from generation to generation, constant watchfulness is necessary, therefore, if it is to be preserved. There are many forces at work today that would suppress, if not destroy, it. A nationalism which teaches violence and preaches hatred, a bigoted and flabby internationalism that scorns one's own country, a political and religious intolerance which, for the moment, seems to be on the increase, all tend to restrict learning and to convert it to their purposes. To these forces one should add another quite modern, that of mass propaganda whose appeal is always primarily to emotion and which usually eventuates in emotional absurdities. Hysterical outbursts of nationalism, such as we have witnessed in Germany, fantastic dreams of some political and economic reformers in this country, and a number of powerful movements designed for special purposes—have been and are now being promoted by an appeal to mass psychology. One can understand how such proposals and movements may appeal to the uninformed, but for them to find advocates in academic circles certainly puts a strain upon what we conceive to be loyalty to the functions of a university.

Intellectual co-operation is now impossible between some countries and yet hope in every field of international endeavor lies only in intellectual co-operation. Great and fundamental achievements are never accomplished by relying upon the untutored moral judgments of the masses. Nor shall the race move forward with any appreciable speed by relying upon the dictatorship of youth, as some would have us believe. A tottering civilization must sooner or later put its trust, and increasingly so, in the scientifically trained. For centuries it has owed a debt to science and learning which it cannot now pay by discrediting or discarding them. Science and learning exist for their own sake; they can be used to promote the material welfare of mankind. If they are to be used for this purpose, then they must transcend national follies, international absurdities, and mass propaganda. At a time when academic freedom is being challenged everywhere throughout the world, when informed opinion is being stifled by force, when advertisements and propaganda offer prizes or extol those who are willing to stultify their intellectual consciences, it is well that we recall these matters. No one knows where the next blow will be struck. Two years ago German scholarship was free; now it is manacled. No premium is placed upon intellectual honesty in either Russia nor Italy. We must not deceive ourselves—popular hysteria or mass insanity may appear in other places. Freedom of action has already been restricted. Freedom of thought and freedom of expression are endangered. As citizens we are interested in political and economic liberty, as members of a university community we have an enormous interest in academic liberty—a privilege which can be preserved only by making certain sacrifices.

Primary Concern Is Knowledge

We must reiterate time and again that the primary concern of a university is the advancement of knowledge and that universities must hold steadfastly to this conception even though it involves the apparent loss of some temporary advantage. In the last chapter of Candida there is a story of an old fruit grower to whom Pangloss applied for information about a vizer who had been strangled: "I know nothing about it," said the old fruit grower, "but I presume that in general those who mix in public affairs often perish miserably—and they deserve to. I cultivate my garden." Cultivating one's garden means in university circles that the weight and prestige of the university must always be thrown on the side of intelligence. Mr. Abraham Flexner in his great book on Universities,

Paris Psychologist Visits Campus



When Dr. Otto Rank, director of the Psychological Center in Paris, visited the University of Minnesota campus recently members of the psychology and social science departments were eager to confer with him as to current trends of thought in Europe. Here Dr. Rank (at right) is shown conferring with Dean Malcolm M. Willey, a sociologist, and Dr. Richard M. Elliott, head of the department of psychology.

puts this point clearly and forcefully in this language: "In this world rocking beneath and around us, where is theory to be worked out, where are social and economic problems to be analyzed, where are theory and facts to be brought face to face, where is the truth welcome or unwelcome, to be told, where are men to be trained to ascertain and to tell it, where, in whatever measure it is possible, is conscious, deliberate and responsible thought to be given to the task of reshaping this world of ours to our living, unless first and foremost, in the university. The wit of man has thus far contrived no other comparable agency. . . . But even so, it is one thing to incur responsibility for policies, and quite another to set up an experiment primarily in the interest of ascertaining truth or testing theory. The modern university must neither fear the world nor make itself responsible for its conduct."

These ideals can be achieved most effectively and most advantageously when a university is concerned with being itself, that is, by knowing rather than by doing, by ascertaining truth rather than by attempting the business of statesmen.

I do not mean to confine scholars to a cloistered existence. The archaeologists will carry on field work, to understand the civilization of the past; the economists study finances, markets, transportation and the like in order that they may comprehend the civilization of the present; but they will do this for the sake of knowing—that is their main business. University men will be then our best critics for they will be constantly engaged in the process of cultivating their own gardens.

In the past certain universities have fallen from grace and have only recovered by strenuous work and by re-establishing the ideal I have been trying to describe. When they stray from the straight path they are brought back with great difficulty, for the pathways of academic sin seem as alluring as the pathways of other sins. They offer promises to the unthinking that terminate eventually in intellectual selfishness.

What Students Should Watch

Thus far in this discussion I have confined myself to academic freedom and academic responsibility as they relate to the teacher, but the obligation of preserving academic liberty rests upon students as well as upon the faculty. Students do not and cannot escape the insidious tendencies and influences to which I have been referring. Indeed they are often more responsive to public movements and to public pressures than are the staffs. Their response to outside pressures often shows itself in their organization and in the things they demand. Many a student organization has no relation to the advancement of learning or to the enrichment of life; many of them are not intended to improve students in scholarship. Many of them exist for the purpose of promoting the interests of some institution, as for example, a church; of some organization, as for example, a political party; or of some activity that has to do with life about the campus, as for example, sports or social affairs. A university could exist without any of these organizations. Indeed there are universities in the world—good ones—that do not have or-

ganizations like these. Sometimes the value of these organizations or of some other kind of student activity, is exalted to the point of obscuring the real reason students are at the university.

University campuses are literally being flooded with organizations. College students were never in such danger of being exploited. Some of these organizations today arise out of the diverse political philosophies now current; others are promoted by propagandizing groups; still others are posing as youth movements. I have had invitations in the last few weeks to join or to sanction five of these youth movements. Careful inquiry showed me that each of these movements had an ulterior motive and that I could not honestly join it without prostituting the university's standards and its ideals.

Many of the agencies that now engage in organizing the youth of this country are trying to use the campuses of our colleges and universities for the promotion of their programs. And they are finding a fairly ready and not always a critical response. The bald and unpleasant truth is that thousands of youth of this country do not know that they are being exploited and there are thousands of others who are ready and willing to join in the programs of the exploiters. The ends of these outside groups are promoted usually by bringing to the campuses, and always under the guise of academic liberty, speakers to promote their causes. When these speakers are uninformed or when they devote their discussions to proselyting and propagandizing, they harm the cause of academic liberty.

I believe in free and generous discussion of every question that relates to human welfare. I think such discussions should be presented, so far as possible, by informed persons whose ability and learning are recognized. I think students should study and discuss every question of vital interest and that they should seek the co-operation of informed persons, and especially of the acknowledged scholars on the staff, in carrying on their discussions.

Outside Forces Are Insistent

Responsiveness to forces that lie outside the university, willingness on the part of any group to exalt the slogans and programs of non-academic agencies at the expense of the university, are among the chief things that weaken co-operation between students and staff. Naturally every one associated with the university is concerned over what his rights and privileges are. What rights do we have? Only those rights which maintain the purposes of the university and promote its welfare. Unless its good name and its essential purposes are kept constantly in mind, we shall undermine, dissipate and destroy it by playing with extraneous things and making the campus the unguarded forum of self-seeking agencies.

Students sometimes forget that universities are not maintained primarily for them. Universities are maintained to discover truth and to assemble and disseminate knowledge. They can live without any given student or without any group or class of students barring one: those students who preserve the traditions of learning.

Few people know what the most difficult job of a university president is. It is that of resisting the pressures of individuals and of

'U' Marksmen Win All Honors

Rifle Team Enters Five Competitions and Tops Rest in Each

Speaking of records, the University of Minnesota R.O.T.C. rifle team can take its place alongside of the 1,000 per cent Gopher football squad and the baseball champions when the matter of gaining its objective is considered. The Gopher R.O.T.C. unit entered five intercollegiate contests and won all five of them during the year.

For the third time Minnesota won the corps area championship, this time from North Dakota, after having held it in 1925 and 1933. For the third time the Gophers won the Russell Wile trophy and medals from Iowa and then went on to win the Big Ten championship and the Hearst Trophy for the Seventh Corps area. This is the second time in succession that the Gopher riflemen have held the Hearst award.

The R.O.T.C. drill team also won the Gold Cup for the best drilled unit in competition with Iowa and Nebraska. The drill team was headed by Cadet Lieutenant-Colonel Emery S. West.

In the midwest regional shoulder-to-shoulder competition the Minnesota marksmen won first place in team shooting with a score of 1,354. The individual championship based on aggregate scores was won by Paul D. Hauser, Minneapolis, with a score of 285 to beat the previous national record of 284. Third and fourth places were won by Terrence Hanold, Minneapolis, and Robert Sandager, Lisbon, N. D.

The Gopher riflemen are coached by Sergeant Ernest Mylke, who has guided the Minnesota unit to four national titles, and seven Big Ten championships since 1921.

Groups who wish to use the university's prestige to further their own interests. Put in another way, the most difficult as well as the most important responsibility of a university administration is that of keeping the university free to do its work. In the discharge of this particular responsibility the administration will have the co-operation and assistance of every student and faculty member who understands how important this is.

Individuals and groups who wish to use universities to promote their own ends, are seldom satisfied with that. They seek the indoctrination of the students. They insist that a certain kind of social theory, of political philosophy, of government structure, of industrial organization, of patriotism, of religious doctrine shall be taught. Even those who plead for freedom frequently wish it only to exploit their own theories or doctrines. The universities of this country are the chief citadels of freedom—once they are taken by any extreme group, then they will no longer be places of learning where subjects, programs, ideals will be scrutinized, examined, studied, evaluated, criticized, without show and without emotion. When any group uses a university to get converts, it is menacing the institutions of liberty. The only academic liberty that should characterize a university, indeed the only kind that can characterize it, is the liberty to learn, not the liberty to profess.

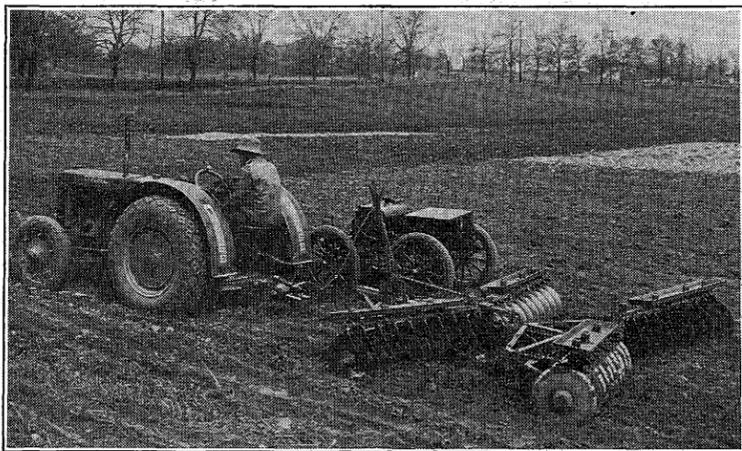
University Not a Crusader

A university will study every question that affects welfare, but it will not carry a banner in a crusade for anything except freedom of learning. A university studies politics, but it will not advocate Fascism nor Communism. A university studies business, but it will not engage in commerce. A university studies social relief, but it will not undertake to administer it. A university studies engineering, but it will not build bridges. A university studies stocks and bonds, but it will not operate an investment house. A university studies military tactics, but it will not promote war. A university studies labor relations, but it will not engage in strikes. A university studies peace, but it will not organize crusades of pacifism.

The welfare of the university must always take precedence over the desires of individuals, of groups, of classes, of organizations. It should give an unfriendly welcome to every cult that desires to reside within its borders. It should hold no commerce with in-

(Continued on page 4, column 5)

Engineers Test Pulling Force



Here is shown a test of the force required to draw a heavy disk harrow over a field in an experiment conducted by Professors H. B. Roe and A. J. Schwantes of the department of agricultural engineering. The box on wheels, seen beyond the machinery, is the dynamometer that measures the force exerted.

MODERN agriculture is largely engineering and it demands for its successful pursuit the aid of thoroughly trained specialists in those phases of engineering concerned with farming. Out of this need has arisen the field of agricultural engineering which includes some elements from most of the older, fundamental branches of engineering including structural, hydraulic, mechanical and electrical.

The successful planning of a convenient farmhouse where the care and feeding of the help is a first consideration, the design of a crop storage building or a modern dairy barn for the care of the highly developed dairy cow, and the economic arrangement of the farmstead for greatest convenience and profit with limited help, as well as for comfort and beauty, call for a knowledge of farm living and working conditions. They are very different problems and require a different detail of technical training and a different viewpoint than does the planning of the city home or the economic arrangement of a manufacturing plant.

During the recent years of economic depression, building needs have been severely neglected and have not kept pace with scientific advance in building materials, types of structure or effective usage. With the present move by both governmental and private agencies to stimulate wholesome revival of business, there is well on its way an awakening to needed widespread increase in farm building activities. For this work there are being sought men with the special training of the agricultural engineer.

Farm Power and Machinery

In designing a plow bottom, grain drill or combine, different combinations of forces must be dealt with than are brought into play in the design of a weaving loom, a locomotive or a multiple-cylinder printing press. The farm tractor is a different machine in plan and purpose, from the automobile built for pleasure and speed.

The number and kinds of machines for farm operation are steadily increasing. Special machines are continually being designed and built for special purposes. New machines must do the work better than the old. Owing to these facts the matter of selection, by the farmer, of the proper size and type of machine becomes an increasingly important problem in farm management. To keep the cost of power and machinery on the farm as low as possible it is necessary to use the right size of machine with a given tractor. Under some conditions it may be more economical to pull two kinds of machines, such as a disk and smoothing harrow, at the same time. This problem of providing the most efficient load for the tractor and still keeping the size and number of implements suited to size of farm and type of farming is a very influential factor in the cost of producing crops and, consequently, in the eventual success of the farm business.

Manufacturers of farm implements and equipment know that many improvements and refinements may be made in their product. They realize that it is their job to supply the farmer with the equipment that he can use to the best advantage; hence they are looking more and more to the agricultural engineer, with his understanding of what machines must

actually accomplish on the farm, as the one best qualified to determine how these machines shall be built and operated.

The manufacturing companies are adopting the practice of interviewing the prospective graduates in agricultural engineering. Those who show promise of making good are selected and put through a course of practical training in the various departments of their plants and are then placed in more responsible positions.

A similar kind of specialized opportunity for agricultural engineers is just beginning to appear in dairy engineering. Although there is a demand on the part of manufacturers of dairy equipment for agricultural engineers very few men have been available to enter that field of endeavor.

In Land Reclamation

The proper design and construction of a tile drainage system, of an irrigation system, or of works and structures correlated with field arrangement and cropping systems for soil erosion control, require not only reliable training in the fundamentals of hydraulics but also a knowledge of soil texture, soil water effects and movement and moisture relations of crops. Hence they are quite different problems than are the design and construction of a city water or sewer system or a water-power unit. They are problems in agricultural engineering.

Public attention is insistently directed to the conservation of our natural resources. The basic resource of our agriculture is the soil, an extremely variable factor in different regions. Based on the character of its soil much land is now classified as submarginal and much more is classified as marginal. Of the remainder, classified as originally good agricultural land, it has recently been estimated by scientists in the government service that about one-half has been seriously injured for agriculture by soil erosion. At the present rate of destruction, agriculture, the basic industry of the country, could reach extinction within the next 500 years.

Almost every governmental unit is awake to the situation and a nationwide program of soil conservation is under way. The job is complicated. Determination, through research, of effective erosion control measures, education for their adoption, and the actual work of putting such measures into practice are jobs for engineers aided by workers in soils, agronomy, farm management, forestry and the like. Federal effort in soil erosion control is directed by the soil erosion service in the United States Department of Agriculture, with 22 regional administrative centers in various parts of the United States. This service is faced with a great shortage of available men, especially in the engineering phases, where agricultural engineers are given a preferential place because of their combined training in engineering and agriculture. The available list of college graduates in this field is practically exhausted; yet it is planned that a new trainee group will be started about every six months.

Agricultural Engineering at Minnesota

In 1925 the University of Minnesota established a course in agricultural engineering, parallel with civil, mechanical and electrical engineering. This course is rated as one of the best of its kind in the country. The student is

Conservation Will Be Theme at Big Campus Meeting

(Continued from page 1, column 1)

Dr. Isaiah Bowman, director of the American Geographical Society, will address the general session on Wednesday evening on the subject, "The Land of Your Possession." At the Thursday evening general session Dr. W. F. G. Swann, director of the Bartol Research Foundation, will speak on, "The Nature of Cosmic Rays." Dr. Swann was formerly a member of the University of Minnesota faculty. Dr. Philip Fox, director of the Adler Planetarium, and Astronomical Museum, Chicago, will speak at the last general session, Friday evening on "The Scale of the Universe."

Sections of the American Association for the Advancement of Science, that will meet in Minneapolis, and their local representatives are as follows: Mathematics, Professors Dunham Jackson and William L. Hart; physics, Professors John T. Tate and Henry A. Erikson; chemistry, Dr. Samuel C. Lind; astronomy, Professor William J. Luyten; geology and geography, Dr. Frank F. Grout; zoological sciences, Dr. William A. Riley; botanical sciences, Dr. Loren C. Petry and Dr. C. O. Rosendahl; anthropology, Drs. W. M. Krogman and Albert F. Jenks; psychology, Dr. John E. Anderson; social and economic sciences, Professors F. Stuart Chapin and Roland S. Vaile; medical sciences, Drs. W. du Vignaud and William A. O'Brien; agriculture, Dr. H. K. Hayes and Dean W. C. Coffey; education, Professor William S. Gray and Professor Harold W. Benjamin.

Meeting with the association will be the American Phyto-Pathological Society, American Society of Plant Physiologists; Botanical Society of America; Corn Belt Section of Agronomy; Dairy Science Association; Ecological Society of America; Great Plains section, American Society of Horticultural Science; American Meteorological Society; Minnesota section, American Chemical Society; Minnesota State Medical Association and the Society for Research on Meteorites.

Is Surgeon on Cruiser

Dr. Albian Lindall, a graduate of the University of Minnesota, recently was assigned as surgeon commander of the Minneapolis, America's newest 10,000 ton cruiser, which is now sailing the Pacific, stationed off the California coast. Dr. Lindall has had an interesting career since his graduation from Minnesota. He was with the Mayo brothers at Rochester for a short time and later was named surgeon on the staff of President Coolidge and also served under England's famous surgeon, Sir Robert Jones. Dr. Lindall served as surgeon on the Memphis on its recent world cruise. He is a brother-in-law of Mrs. N. W. Elsberg, wife of the Minnesota state highway commissioner.

trained in the scientific basis of engineering, including mathematics, physics, chemistry, mechanics and strength of materials; in structural and machine design and construction; and also in the fundamentals of agriculture including soils, agronomy, horticulture, dairy husbandry, and farm organization and management. The bulletin of the College of Engineering and Architecture of the university shows the details of the course and is available on application to the Registrar of the University at Minneapolis.

For the young man who plans to enter this course a strong background of farm life and experience is eminently desirable. The young man who is industrious and who has an aptitude for mathematics and for engineering activity will find in the agricultural engineering field a wide range of possible interests extending from office, designing room and factory, from lecture room and research laboratory, to broader, more active work as the director of activities of other men as superintendent or manager, as the entrepreneur in farming or in allied industrial and commercial effort. The field of opportunity covers the whole range of federal and state civic and educational service and of private industrial and commercial enterprise as well. At present the demand for graduates from Minnesota exceeds the supply.

MINNESOTA CHATS

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University of Minnesota, Minneapolis

Research Worker Tells About Dust Asks University Hold to Its Aims

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reasonably dry day on a busy street it may run up to four or six million particles per cubic foot. A factory building, depending upon the kind of work done, may show a count from a few thousand up to hundreds of millions of particles. Thus, the number of dust particles may vary within wide limits, and it is difficult to set standards as to the amount which should be tolerated. It is evident, however, that in most cases standards should include some consideration of the size of dust particles. A relatively small number of coarse, heavy particles might give the appearance of very dirty air and do a considerable amount of physical damage without being a menace to human health. On the other hand, large quantities of fine particles might be present which might be exceedingly dangerous to health and yet not be visible or cause any particular physical damage."

U Examines for Crime Bureau

Under the first arrangement whereby the Board of Regents of the University of Minnesota have examined to certify applicants for state positions a regents' examination to select men to fill 16 positions in the State Bureau of Criminal Apprehension was held on the campus June 3, under direction of Professor George B. Vold, named chairman of an examining committee by President L. D. Coffman. Under a law passed by the last legislature providing for expansion of the bureau it was specified that applicants must be certified after examination by the regents of the university.

Positions to be filled are a supervisor of the state police radio broadcasting station, three broadcasting operators, a director of the division of criminal statistics, an identification expert, an assistant identification expert and photographer, and several investigators.

Forester Tells About Windbreaks

To meet an increasing demand for information on how to plant a farm windbreak, the extension division of the Department of Agriculture, University of Minnesota, has issued a new bulletin, "Planting the Standard Windbreak." The bulletin was prepared by Parker O. Anderson, forestry specialist of the extension division. The bulletin tells how to prepare the land, size of trees to plant, how and where to plant the trees to afford the greatest protection for the farmstead, and, in fact, everything that one ought to know in making plans for such farm protection. Persons interested may obtain copies of the bulletin by going to their county agent or to a teacher of agriculture in a high school, or by writing to the Bulletin Office, University Farm, St. Paul.

Gortner to Give Cornell Lectures

Dr. R. A. Gortner, professor of agricultural biochemistry and chief of the division of agricultural biochemistry, Department of Agriculture, University of Minnesota, has been invited by Cornell University to be the George Fisher Baker non-resident lecturer in chemistry at Cornell during the fall semester 1935-36, and has been granted leave of absence by the board of regents of the University of Minnesota to accept. This lectureship at Cornell University is an endowed lectureship to which are invited from time to time chemists who have attained an international reputation.

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tolerance, whether it be in the name of patriotism, of religion, or of social theory. Neither the bondage of outworn customs nor the specious pleas of extremists, should ever be allowed to interfere with its legitimate functions of instruction or research.

Academic freedom derives its social significance from the fact that it is academic. The desirable academic attitude is objective, dispassionate, unprejudiced, clear-eyed, and informed. Free speech is a great thing, but sensible speech is even greater. In all university speech, reason should rule. Those who speak freely but not sensibly may be tolerated but not respected. Militant propaganda may be justified under certain circumstances but it should not hide behind the cloak of academic freedom. The duty of the scholar is to inquire fairly and justly into all relevant data bearing upon his hypothesis or problem and then to set forth faithfully and fearlessly his findings. To the freedom of learning as thus conceived and described, we of the university world can and should pledge our allegiance.

Professor Lambie To Go to Harvard

Resignation of Dr. Morris B. Lambie, professor of political science at the University of Minnesota and secretary of the Municipal Reference Bureau and of the League of Minnesota Municipalities, has been announced by Professor Harold Quigley, chairman of the political science department. Dr. Lambie will go to Harvard, which is strengthening its faculty in public administration and in courses training men for public service. These are the fields of Professor Lambie's specialties. He will have duties also under the new tutorial system that Harvard has begun, and will lecture in municipal government and public administration.

Professor Lambie has been a member of the Minnesota faculty for 14 years. Besides his teaching in the department of political science he has been active in directing the affairs of the two bureaus serving cities of the state, which function through the General Extension Division. Under his guidance both the Municipal Reference Bureau and the League of Minnesota Municipalities have greatly expanded their activities.

Dr. Lambie is a graduate of Williams College, who obtained the doctor of philosophy degree from Harvard. He came to Minnesota in the fall of 1921 and was promoted to a professorship in 1927. In 1927 and again in 1934 he spent a year abroad studying public administration in foreign countries. In the fall and winter of 1932 he was co-ordinator of relief between the federal and state governments and in the winter of 1933 he represented Governor F. B. Olson as CWA administrator.

Designs Airplane With No Tail

A tailless airplane, depending only upon its motor and wings to keep it in the air, recently was designed and is being constructed by Professor John D. Akerman, head of the department of aeronautical engineering at the University of Minnesota.

Aided by advanced students in aeronautical engineering at the university, Professor Akerman is seeking to learn whether tails are definitely needed by airplanes. Airplane designers in England and Germany have made a start toward proving such a scheme practical but very little is known about the construction of this type of plane.